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Application for Rectification in Terms of Section 24G of the National Environmental Management Act (Act No. 107 of 1998)

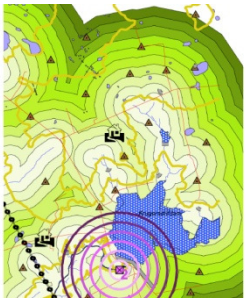
Final Environmental Impact Assessment and Environmental Management Programme (EIA - EMP)

Report

Final for Public Review
1 November 2013

Two Rivers Platinum
GCS Project Number: 11-639
LDEDET Ref. No: 12/1/9/S24G/GS2




TWO RIVERS PLATINUM SECTION 24G ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Report

Final for Public Review

1 November 2013

Two Rivers Platinum

11-639

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EXECUTIVE SUMMARY

PROJECT BACKGROUND

Two Rivers Platinum Ltd (TRP) is an existing mining operation conducting mining activities on Portion 6 and 7 of the farm Dwarsriver 372 KT, situated 27km south of the town Steelpoort, within the Greater Tubatse Municipality, Limpopo Province. Construction commenced in June 2005 and the current mining rate is 90 000tpm. The reef stockpile reached 800 000tonnes by March 2006 and the projected 1 300 000 tonnes required for processing was reached by August 2006. A concentrator was commissioned July 2006 and commercial operations commenced by June 2007.

The initiation of numerous activities on site occurred without approval under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). As a result, the identified activities require an environmental authorisation in terms of the NEMA regulations promulgated in 2006. A rectification process will thus be required for the listed activities which have already taken place.

GCS consulted with officials from Limpopo Department Economic Development, Environment and Tourism (LDEDET), who is the competent Authority for the TRP application (in terms of the NEMA). A site visit was also conducted with LDEDET who then advised that TRP conduct a legal Assessment to identify activities that commenced without approval and then apply for rectification in terms of NEMA.

Cameron Cross Attorneys conducted the legal Assessment for TRP, and during the site visit they noted, or were advised of, certain activities being undertaken on site. Where specific dates as to construction of, for example, dams on site could not be provided, and where capacity requirements are relevant, they have not been able to make a conclusive determination in respect of the applicability of listed activities in terms of both the Environment Conservation Act 73 of 1989 (ECA) and the NEMA thereto.

It was therefore recommended by Cameron Cross an application for the rectification of the unlawful commencement of listed unauthorised activities be made in terms of section 24G of the NEMA.

LEGISLATIVE PROCESS

Section 24 of the NEMA requires that any listed activities which may impact on the environment must obtain an environmental authorisation from a relevant authority before commencing with the activities.

Since mining began in 2005, a number of additional activities have commenced prior to environmental authorisation in terms of NEMA being obtained. These activities include:

- The construction of ten (10) dams at various locations on the site;
- The expansion of the existing Tailings Storage Facility (TSF);
- Installation of three (3) sewage plants;
- A concentrator plant upgrade (**Withdrawn since application as it has been established that the activity is not listed);**
- Permanent use of reef stockpiles 1 and 2 **(Withdrawn since application as it has been established that the activity is not listed);**
- The emergency lay-down area; and
- An upgrade to the road joining the north decline and silos.

Activities identified by Cameron Cross that commenced without approval and would now require rectification in terms of section 24G is included in the Table below:

Number and date of the relevant Notice	Activity No.(s) in terms of the relevant notice	Finding observations and / recommendations
ECA , Section 22, GNR 1182 of 5 September 1997	Item 1 (j) The construction erection or upgrading of dams, levees or weirs affecting the flow of the river	Finding A number of dams have been constructed on site. TRP advised that the dams at the concentrator plant, main decline and the tailings deposit facility were constructed during 2007. Recommendations The applicability of 1 (j) of GNR 1182 will be relevant to those dams constructed between 2 March 1998 and 3 July 2006. With regard to the above, exact dates as too the construction of the various dams was not provided; consequently conclusive determination in this regard could not be made. As stated herein above, the requirement to obtain environmental authorization in respect of the dams constructed on site is based on the exact dates of

		construction, coupled with the requirements in any of the aforesaid activities having been met. Recommendation In view of what is stated herein above, we recommend that upon confirmation of the above, should same constitute a non-compliance with the requirement to obtain an environmental authorization, an application for the rectification of the unlawful commencement of a listed activity be made in terms of section 24 (g) of the NEMA.
ECA , Section 22, GNR 1182 of 5 September 1997	Item 1 (n) The construction, erection or upgrading of sewage treatment plants and associated infrastructure. Item 1(n) commenced on 2nd March 1998.	Three STPS have been constructed on the premises as follows: • STP1 at the main decline • STP2 at the concentrator plant; and • STP3 at the North Decline Dates of the construction and the commissioning of the aforesaid STPs were not provided. However, TRP will have to comply for rectification of these activities in terms of Section 24(g) as this would've triggered listed activities in terms of ECA (if constructed between 2 March 1998 and 3 July 2006) or in terms of NEMA if constructed after July 2006.

PUBLIC PARTICIPATION PROCESS

The Section 24G Application is being run in parallel with other environmental applications currently being undertaken at TRP. The public participation process is also being run in parallel, in order to prevent repeat notifications and stakeholder fatigue. The Section 24G application was introduced at the draft EIA phase since a Scoping Phase is not required by LDEDET. A summary of the parallel applications/ processes currently being conducted by TRP is included in Table 0.1 below:

Table 0.1 TRP Parallel Environmental Authorisation Applications

APPLICABLE LEGISLATION	APPLICABLE TITLE	LEAD AUTHORITY	REF- NUMBER	DATE OF ACCEPTANCE OF APPLICATION	CURRENT PROGRESS
[1] NEMA	Proposed new TSF	[2]LDEDET	12/1/9/2-GC22	30 August 2012	Final scoping report accepted by LDEDET on the 10 June 2013.
NEMA	Proposed UG2 and Merensky Mine	LDEDET	12/1/9/2-GS26	30 August 2012	Final scoping report accepted by LDEDET on the 10 June 2013.
NEMA	Application to rectify unlawful commencement of listed activities.	LDEDET	12/1/9-524G-GS2	28 November 2012	To be introduced into the EIA phase authorities and public consultation
[3] NEM:WA	Proposed sewage treatment plant.	[4]DEA: Pretoria	12/9/11/L946/5	18 June 2012	Final scoping report accepted by the DEA on the 13th May 2013
[5]MPRDA	Two rivers EMP amendment in terms Section 102 of the MPRDA to include all required infrastructure in one holistic application.	[6]DMR: Polokwane	N/A	Meeting held on 30th July 2013 to discuss requirements	Authorities and public consultation. A consolidated EMP will be presented to the DMR at the end of the EIA phase.

APPLICABLE LEGISLATION	APPLICABLE TITLE	LEAD AUTHORITY	REF- NUMBER	DATE OF ACCEPTANCE OF APPLICATION	CURRENT PROGRESS
[7]NWA	Two Rivers WUL amendments to include new proposed water uses.	[8]DMR: Nelspruit	N/A	Meeting held on 6 Feb 2013 to discuss requirements	A water use license amendment application will be submitted after the EIA phase.

[1] National Environmental Act, 1998 (Act 107 of 1998)
[2] Limpopo department of Economic development, environment and Tourism.
[3] National Environmental Waste Act, 2008 (Act 28 of 2008)
[4] Department of Environmental affairs
[5] Mineral and Petroleum Resources Development Act (2002) Act no. 28 of 2002
[6] Department of Mineral Resources
[7] National Water Act, 1998 (Act Number 36 of 1998).
[8] Department of Water Affairs

All I&APs on the existing TRP database have been contacted and notified of the Section 24G application via site notices, flyers (in English and Sepedi), email, fax and post.

MEDIA ADVERTISEMENTS

An advertisement, in terms of Regulation 54 of NEMA regarding the project background and the assessment process being followed was placed in the following newspaper:

- The Steelburger, published on Friday, 05 July 2013

BACKGROUND INFORMATION DOCUMENTS

Background Information Documents (BID's), in terms of regulation 54 of the NEMA were distributed to all I&APs/Stakeholders as per the existing database for TRP. BID's in both English and Sepedi were distributed to the Tribal Offices on 5 July 2013 for distribution to the local communities. Other stakeholders were send the BID via email, post or fax.

SITE NOTICES

Site notices were placed at the entrance to the mine, and at the project areas, on 5 July 2013.

STAKEHOLDER MEETINGS

A Public Open day was held on 21 August 2013 at the Malekane Community Hall. Authorities and a landowner focus group meeting were also held on 22 August 2013, at Didingwe Lodge, to present the application and Draft EIA Report.

SPECIALIST INVESTIGATIONS

Activities applied for in this report are currently being undertaken within the approved mine premises, as part of existing infrastructure. Specialist studies were conducted prior to commencement of TRP mining activities, this data was therefore used as a baseline reference.

IMPACT ASSESSMENT AND STATEMENT

All of the new activities form part of the existing mine, within the mining right area, and are being undertaken in areas that have already been disturbed. Environmental impacts were assessed as being medium to low with mitigation, the same as for the existing mine infrastructure. It is recommended that the activities be authorised.

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DISCLAIMER

Information contained in this report relating to the project description is based on information supplied by the client and other client appointed sources. It is assumed that the information provided to GCS is correct.

Environmental and Social data, as well as environmental impact assessment provided in this report is based on information supplied by specialists in their respective fields, as well as existing information pertaining to the area in question (including previous site investigation data). It has been assumed that the information provided to GCS to perform the outcomes of this report is correct.

No responsibility is accepted by GCS for Incomplete or Inaccurate data supplied by others (the client and external sources). Where gaps have been identified these are listed for consideration by the responsible decision-makers.

GCS's opinions, conclusions and recommendations are based upon information that existed at the time of the start of the production of this Document.

LIST OF ABBREVIATIONS/ACRONYMS

ARM	African Rainbow Minerals
DEA	Department of Environmental Affairs DMR
CNRA	The Conservation of Natural Resources Act, 1983 (Act No. 43 of 1983)
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment EMP
GCS	GCS (Pty) Ltd
GN704	Government Notice 707
HSA	Hazardous Substances Act,1973 (Act No. 15 of 1973)
IWULA	Integrated Water Use License Application
IWWMP	Integrated Water and Waste Management Plan
I&AP	Interested and Affected Party
JV	Joint Venture
LDEDET	Limpopo Department of Economic Development, Environment and Tourism
LoM	Life of Mine
MHSA	The Mine Health and Safety Act, 1996 (Act No.29 of 1996)
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No.28 of 2002)
MMF	Milling-Milling-Float
NEMA	National Environmental Management Act, 1998 (Act No.107 of 1998)
NEM:AQA	The National Environmental Management: Air Quality Act,2004 (Act No. 39 of 2004)
NEM:BA	The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act,2008 (Act No.59 of 2008)
NHRA	The National Heritage Resources Act,1999 (Act No.25 of 1999)
NWA	National Water Act,1998(Act No.36 of 1998)
OSHA	Occupational Health and Safety Act,1993 (Act No.85 OF 1993)
PGM	Platinum Group Metals
PPP	Public Participation Process
ROM	Run of Mine
RWD	Return water dam
SCPE	Sekhukhuneland Centre of Plant Endemism
TSF	Tailings Storage Facility
UG2	Upper Group 2

1 INTRODUCTION

1.1 Background

Two Rivers Platinum Ltd (TRP) is an existing mining operation conducting mining activities on Portion 6 and 7 of the farm Dwarsriver 372 KT, situated 27 km south of the town Steelpoort, within the Greater Tubatse Municipality, Limpopo Province. Construction commenced in June 2005 and the current mining rate is 90 000 tonnes per month (tpm). The reef stockpile reached 800 000 tonnes by March 2006 and the projected 1 300 000 tonnes required for processing was reached by August 2006. A concentrator was commissioned in July 2006 and commercial operations commenced by June 2007.

The initiation of numerous activities on site occurred without approval under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). As a result, the identified activities require an environmental authorisation in terms of the NEMA regulations promulgated in 2006. A rectification process will thus be required for the listed activities which have already taken place.

GCS Water and Environment (Pty) Ltd (GCS) consulted with officials from the Limpopo Department of Economic Development, Environment and Tourism (LDEDET), who is the competent Authority in terms of the NEMA for the TRP application. A site visit was also conducted with LDEDET who then advised that TRP conduct a legal assessment to identify activities that commenced without approval and then apply for rectification in terms of NEMA.

Cameron Cross Attorneys conducted the legal assessment for TRP, and during the site visit noted, or were advised of, certain activities being undertaken on site. Where specific dates as to construction of, for example, dams on site could not be provided, and where capacity requirements are relevant, they have not been able to make a conclusive determination in respect of the applicability of listed activities in terms of both the Environment Conservation Act, 1989 (Act No. 73 of 1989) (ECA) and the NEMA thereto.

It was therefore recommended by Cameron Cross Attorneys that an application for the rectification of the unlawful commencement of activities without a conclusive determination of applicability be made in terms of section 24G of the NEMA.

1.2 Brief Project Description

Since mining began in 2005, a number of additional activities have commenced prior to environmental authorisation in terms of NEMA being obtained. These activities include:

- The construction of ten (10) dams at various locations on the site;

- The expansion of the existing Tailings Storage Facility (TSF);
- Installation of three (3) sewage plants;
- A concentrator plant upgrade (**Withdrawn as it has been established that the activity is not listed);**
- Permanent use of reef stockpiles 1 and 2 **(withdrawn as it has been established that the activity is not listed);**
- The emergency lay-down area; and
- An upgrade to the road joining the north decline and silos.

It is the intention of TRP to apply for rectification of these activities in terms of section 24G of the NEMA.

1.3 Description of Land

This section of the Report relates to the content of an EIA Report as regulated by Regulation 31 of the NEMA Regulations.

Regulation 31(2)	*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 contemplated in Regulation 35, and must include•*
	(c) a description of the property on which the activity is to be undertaken and the location of the activity on the property, or if it is...

1.4 Contact Details

1.4.1 Contact Details of Applicant

Refer to Table 1.1 for the contact information in respect of the Mine as well as the Mineral Rights' Holder

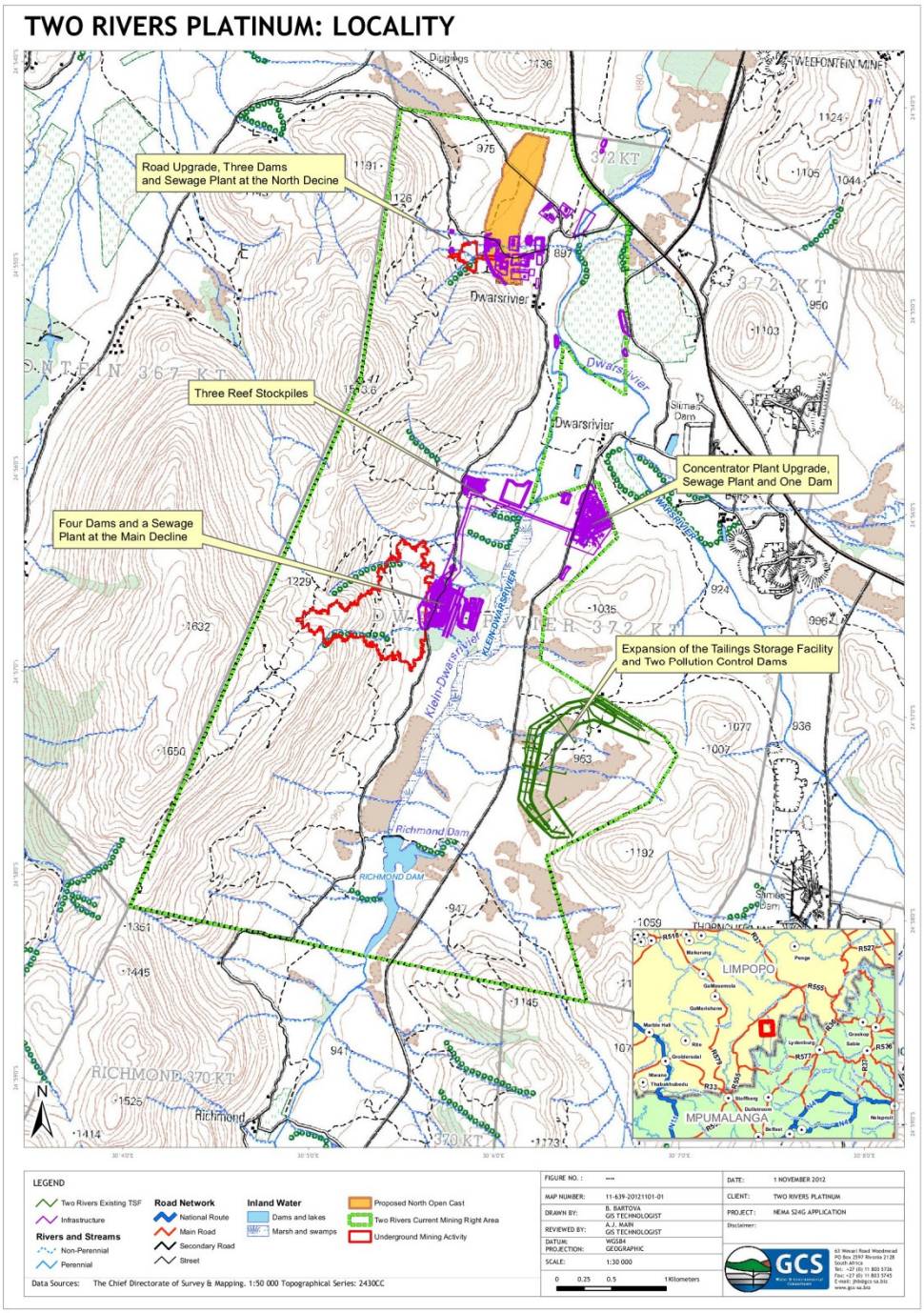
Table 1.1 Name and Address of Mineral Rights Holder

Mining Right Holder	Two Rivers Platinum (Pty) Ltd
Physical Address	Dwarsriver Farm KT372, Lydenburg,1120

Mining Right Holder	Two Rivers Platinum (Pty) Ltd
Telephone	013 230 2650
Facsimile	013 230 2660
Email	Johannes.senyane@trp.co.za
Contact Person	Johannes Senyane
Mining Right Holder	Two Rivers Platinum (Pty) Ltd

1.4.2 Land and Farms relevant to Project

The activities applied for are located within the approved mining area (as approved in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA), on portions 6 and 7 of the farm Dwarsrivier 372KT. Locations of the identified activities is outlined in Figure 1.1.



(Not to Scale – Refer to A3 Figure over the page)

Figure 1.1 Locality Map

2 LEGISLATIVE BACKGROUND

2.1 Environmental Process

2.1.1 Summary of all Environmental Authorisation Processes

TRP is currently in the process of expanding its mining operations. The expansion of the mining activities has resulted in the need for various environmental authorisations:

1. First authorisation process involves the authorisation of the proposed New TSF and associated infrastructure (new TSF);
2. **Second authorisation process involves the Section 24G application for unauthorised activities (to be introduced at the Environmental Impact Assessment (EIA) phase);**
3. Third authorisation process involves the application for existing and new sewage treatment plants; and
4. Fourth authorisation process involves the application for the UG2 and Merensky Expansion.

Refer to Table 0.1 in the Executive Summary.

The EIA, Waste, Water Use Licensing and DMR authorisation processes are being run in parallel as far as practically possible to streamline the process, and reduce stakeholder fatigue in terms of the required stakeholder consultation associated with each authorisation process.

2.1.2 The Section 24G Process in terms of the National Environmental Management Act, Act 107 of 1998 (NEMA)

The process to be followed will consist of the following steps -

Step 1: GCS will ascertain whether TRP are responsible for the commencement or continuation of an activity requiring authorisation in terms of the NEMA Regulations without the necessary authorisation.

The following activities commenced unlawfully at TRP and require rectification in terms of Section 24G:

- Construction of Pollution Control Dams (PCDs):
  - Four (4) PCDs at the Main Decline;
  - Three (3) PCDs at the North Decline;
  - One (1) PCD at the Concentrator plant; and
  - Two (2) PCDs at the TSF (Concentrator plant).

- Expansion of the existing TSF;
- Sewage Treatment Plants:
  - One (1) sewage treatment plant at the Main Decline;
  - One (1) sewage treatment plant at the North Decline; and
  - One (1) sewage treatment plant at the Concentrator Plant.
- Plant upgrade to include secondary crusher and flotation cells **(It has been determined that this activity is not listed, and has such has been withdrawn from the application, refer to Section 3.4 of this report);**
- Permanent use of reef stockpiles 1 and 2 **(withdrawn as it has been established that the activity is not listed);**
- Emergency laydown area;
- Upgrading of the haul road linking the north decline and silos.

Step 2: An application for rectification must submitted to the Department on the prescribed application form. The required application form was submitted to LDEDET on behalf of TRP on 8 November 2012.

Step 3: The application is then reviewed by the Department. This may include a site inspection to verify information provided. Based on the review of the application, the applicant will be advised on further information required to consider the application. A letter of acknowledgement, with further requirements was received from LDEDET on 28 November 2012 (Refer to Appendix B).

Step 4: The competent authority will advise the applicant on further procedural and information requirements by means of a notice. This may include the compilation of a report after conducting prescribed public consultation. The competent authority will also advise the applicant on the administration fine payable.

Step 6: The applicant must submit the required reports together with proof of payment of the fine to the department. Reports submitted without proof of payment or exemption from payment will not be processed.

Step 7: The Department reviews the reports and advise the competent authority to inform the decision.

Step 8: The competent authority communicates the decision to the applicant. This decision could be either:

- Issue the applicant with an environmental authorisation; or
- Issue the applicant with a directive instructing the the activity to cease, and rehabilitation of the environment.

Step 9: The applicant implements the decision.

2.1.3 Consequences of not applying

Section 24F(4) stipulates that it is an offence to commence or continue with a listed activity in the EIA Regulations and the person or company will be guilty of an offence and may be subject to a fine of R 5 000 000 (5 million Rand) and/or 10 years imprisonment.

Section 24G(3) advises that failure to comply with conditions of an environmental authorisation issued in terms of a Section 24G Application or with a directive issued by the Member of the Executive Council (MEC) in terms of Section 24G also constitute an offence with the abovementioned penalties attached to 1t.

Further to the above, environmental penalties are not necessarily limited to the penalties mentioned in a specific provision (i.e. Section 24G). Section 34 of NEMA governs criminal proceedings and states, amongst others, that anyone convicted of an offence in terms of any provision listed in Schedule 3 is, in addition to other penalties, liable to meet the cost of rehabilitating and/or preventing damage to the environment. Schedule 3 lists penalties for which a person can be held criminally liable and includes Section 24G (3). In other words, the risk related to not complying with the duties in terms of the Section 24G, are compounded when one also considers the additional penalties in Schedule 3.

In addition to the abovementioned and in terms of the Section 28(14) of NEMA, it is an offence for anyone to unlawfully and intentionally or negligently commit any act or omission which: (a) causes, or is likely to cause, significant pollution or degradation of the environment, or (b) detrimentally affects, or is likely to affect, the environment in a significant manner. A person convicted of a Section 28(14} offence is liable to a fine of up to R 1 000 000 (1 million Rand) or imprisonment for up to one year, or to both. The significance of the aforesaid is that Section 34 of NEMA makes provision for both companies and its directors to be held personally liable for environmental crimes. This personal liability also applies to managers, agents or employees who have done or omitted to do an allocated task, while acting on behalf of their employer.

Unless it can be shown that all reasonable steps necessary to prevent the "contravention" were taken, even an unintentional (but negligent) unlawful act or omission which causes significant pollution or degradation (or potential pollution or degradation) of the environment, can hold a 'director' personally liable. It is therefore paramount for directors and other executives to ensure that they take all reasonable measures to ensure that the company and its employees, agents or managers do not do anything (or omit to do anything) that wilt harm (or potentially harm) the environment or contravene any of the listed offences in Schedule 3 of NEMA.

2.1.4 The Process in terms of the National Environmental Management Act, Act 107 of 1998 (NEMA)

Scoping and Environmental Impact Reporting (S&EIR) entail a comprehensive Environmental Impact Assessment (EIA) which includes a scoping phase and an EIA phase. In the scoping phase, issues are identified and it includes a plan of study for the EIA. The EIA phase assesses issues identified during the scoping phase and includes an Environmental Management Programme (EMP). The EMP provides information on the proposed activity and the manner in which potential impacts wilt be minimised or mitigated. This process is required for all listed activities.

The competent authority for this application is the Limpopo Department of Economic Development, Environment and Tourism (hereinafter referred to as LDEDET).

2.1.5 The Process in terms of the National Water Act, Act 36 1998 (NWA)

In addition to the NEMA and MPRDA authorisations, activities which have the potential to impact on a water resource require that a Water Use licence (WUL) issued by the Department of Water Affairs (DWA), under the National Water Act, 1998 (Act No. 36 of 1998) (NWA). Section 21 of the NWA identifies certain water uses which have to be authorised. The existing WUL will be amended to include the unauthorised activities, and submitted to the DWA in Lydenburg.

In addition, an Integrated Waste and Water Management Plan (IWWMP) will also be amended and submitted as a supporting technical document to the Water Use License Application (WULA). The IWWMP is used as a management tool by TRP to manage water emanating from the new TSF as a result of runoff or seepage, using best practices in the interest of protecting the water resources which may be affected.

A WUL may be issued for a maximum period of 40 years with a specified review period. The WUL also prescribes a set of conditions to protect water resources, and gauge the impact of the water use. These have to be strictly adhered to for as long as the water use continues.

This may extend beyond the life of the new TSF and other uses, as TRP will be responsible for impacts caused by the TSF after decommissioning and closure.

- Furthermore, Section 27 of the NWA specifies that the following factors, regarding water use authorisation, must be taken into consideration:
- The efficient and beneficial use of water in the public interest;
- The socio-economic impact of the decision whether or not to issue a license;
- Alignment with the catchment management strategy;
- The impact of the water use and possible resource directed measures; and
- Investments made by the applicant in respect of the water use in question.

Section 27 considerations will be included in the WULA and IWWMP. This will assist TRP in ensuring that the water uses applied for, are undertaken in a manner that does not negatively impact on the public, water resources, or downstream water users or compromise any of the country's international obligations with regards to shared water resources.

2.1.6 The Process in terms of the National Environmental Management: Waste Act, Act 59 of 1998 (NEM: WA)

According to Section 44 of the National Environmental Management: Waste Act, 1998 (Act No. 59 of 1998) (NEM:WA), the application and decision-making process regarding the licensing of waste management activities must be in line with the decision-making process in NEMA. The interpretation and application of the NEM:WA must be guided by the principles set out in Section 2 of NEMA (as addressed in paragraph 1.2 of this document).

The existing sewage plants trigger a listed activity under Category B in Schedule 1 of the NEM:WA. In terms of section 19(1) of the NEM:WA, TRP is required to conduct the necessary environmental application process and submit a Scoping Report and EIA/EMP reports to the DEA, in respect of the listed activities described in Category B in Schedule 1 of the NEM:WA.

The activities listed under Category B are equivalent to those that require an environmental impact assessment process as stipulated in the EIA Regulations promulgated under the NEMA. Activity 4(7) requires investigation and subsequent authorisation:

"The treatment of effluent, wastewater or sewage with an annual throughput capacity of 15 000 cubic meters or more."

TRP currently has 3 existing sewage plants on the site, and the proposed Merensky Project will involve the construction of two additional/new sewage plants. It was agreed with the Department of Environmental Affairs (DEA) that the Waste License Application for the existing sewage plants should be amended to include the proposed new plants. Refer to Appendix A which contains the Waste Licence Application, and correspondence with the DEA.

2.2 Environmental Process Objectives

In order to mitigate potentially negative impacts and to identify any potential fatal flaws which may render the project environmentally unacceptable, GCS has adopted an integrated, step-by-step process to identify issues of concern and to thoroughly investigate these issues. The proposed environmental investigations undertaken will address all phases related to the proposed project. These phases will include the:

- Construction phase;
- Operational phase; and
- Closure and Decommissioning phase.

To ensure that the negative impacts are identified and mitigated in the early stages of the project, and that the positive impacts are maximised, it will be necessary for the environmental study to meet the following aims:

- Follow the guideline process as outlined by the NEMA;
- Provide input in the feasibility phases to ensure that the most technically feasible, and environmentally sound options are selected;
- Ensure that impacts are identified early through investigations to minimise environmental damage and maximise benefits;
- Conduct thorough special investigations that will allow the project team to develop an adequate understanding of the issues to be dealt with;
- Compile an EIA that will identify, evaluate and address the potential impacts;
- Provide on-going environmental input into the project planning and development;
- Compile an EMP that will limit the significance of the negative impacts and maximise the positive aspects;
- Ensure that all relevant I&APs/stakeholders are consulted and involved throughout the project; and

- Ensure that an open and transparent communication structure is in place during the life of the mine

2.3 Environmental Assessment Practitioner

This section of the Report relates to the content of an EIA Report as regulated by Regulation 31 of the NEMA Regulations.

Regulation 31(2)	*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 contemplated in Regulation 35, and must include -*
	(a) details of *(i) the EAP who compiled the report; and* *(ii) the expertise of the EAP to carry out an environmental impact assessment;*

In terms of Section 17 of the NEMA, TRP has to appoint Environmental Assessment Practitioners (EAPs) before applying for an environmental authorisation of any activity listed in terms of GN R544; R545 and R546. For this purpose TRP has appointed GCS to undertake the necessary environmental assessments and to ensure that all legislative requirements are adhered to as part of the environmental authorisation process.

GCS provides a professional independent consulting service in the fields of water, environmental engineering and earth sciences. The GCS team consists of highly trained staff that has extensive experience in the fields of hydrogeology, hydrology, pedology, engineering geology, engineering and environmental science.

GCS undertakes hydrogeological investigations for water supply projects, groundwater pollution studies, mining hydrogeology, mathematical modelling and hydrogeological aspects of waste disposal throughout sub-Saharan Africa. GCS also provides expertise in environmental management services.

GCS was founded in 1987 and the broad GCS client base ranges from individuals, engineers, municipalities and mines, to Independent States and Governments. GCS is an independent practice, which is wholly owned by the partners of the company. GCS is an independent environmental consulting firm and will undertake the EIA and co-ordinate the specialist investigations which form part of the EIA. GCS will also be responsible for the relevant public participation process related to the proposed project.

The EAPs representing GCS in this instance are detailed in Table 2.1

Table 2.1 EAPS from GCS (PTY) LTD

NAME	POSITION	GENERAL QUALIFICATIONS	YEARS OF EXPERIENCE IN EIAs AND EMPs
Tanja Bekker	Environmental Unit Manager	MSc Environmental Management Pr.Sci.Nat (Reg. Nr 400198/09) Member of the Environmental Law Association Member of the International association for Impact Assessment Technical and Quality and control	10
Megan Wuite	Senior Environmental Consultant	BSc Agriculture M Environment and Development Pr.Sci.Nat (Reg.Nr 400400/13) Member of the International association for Impact Assessment	5

2.4 Reporting

A Section 24G Application form was submitted to LDEDET on 8 November 2012. This was acknowledged on 28 November 2012 (Refer to Appendix B). Public participation and an EIA/EMP report was requested in support of the application.

2.4.1 Environmental Impact Assessment

The EIA Report must determine the nature, extent, duration, probability and significance of the environmental, social and cultural impacts of the project, the reasonable alternatives and the required mitigation measures for each impact during the life of the mine. It is the role of the relevant environmental authorities to make a decision on whether the project should proceed or not, based on the information provided in the EIA and this report therefore does not make a recommendation on whether the project should proceed or not. Regulation 31(2) of Government Notice R543 of the NEMA Regulation stipulates that an EIA Report must contain all necessary information to enable the competent authority to consider the application and to reach a decision. The EIA Report must contain, inter alia, the following:

- A description and comparative assessment of all alternatives identified

- A description of all environmental issues identified as well as the significance of each issue and an indication if the extent to which the issue could be addressed by the adoption of mitigating measures;
- An Environmental Impact Statement; and
- An Environmental Management Plan.

Furthermore, the criteria which the competent authority will apply, when considering applications in terms of the provisions of NEMA, is enunciated in Regulation 8 of Government Notice R543 of the NEMA Regulations. The latter regulation states that consideration must be had for Section 240, Section 24(4) as well as the need and desirability of the activity. The activities identified in the provisions of NEMA and the Regulations thereto pertain to activities which may have a detrimental impact on the environment.

The criteria to be taken into account by the competent authority when considering applications as set out in Section 240 and 24(4) of NEMA includes, inter allia, the following relevant factors:

- Any pollution, environmental impacts or environmental degradation likely to be caused if the application is approved or refused;
- Measures taken to protect the environment from harm as a result of the activity which is the subject of the application;
- Measures taken to prevent, control abate or mitigate any pollution, substantially detrimental environmental impacts or environmental degradation;
- The ability of the applicant to implement mitigation measures and to comply with any conditions subject to which the application may be granted;
- Where appropriate, any feasible and reasonable alternatives to the activity which is the subject of the application and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment; and
- Any comments received from organs of state that have jurisdiction over any aspect of the activity which is the subject of the application.

2.4.2 Environmental Management Programme (EMP)

A draft EMP must include information on any proposed management or mitigation measures that will be taken to address the environmental impacts that have been identified, including environmental impacts or objectives in respect of -

  - Planning and design;
  - Pre-construction and construction activities;
  - Operation or undertaking of the activity;
  - Rehabilitation of the environment; and
  - Closure, where relevant.
- A detailed description of the aspects of the activity that are covered by the EMP;
- An identification of the persons who will be responsible for the implementation of the mitigating measures;
- Where appropriate, time periods within which the measures contemplated in the EMP must be implemented; and
- Proposed mechanisms for monitoring compliance with the environmental management plan and reporting thereon.

The EIA ensures that the needs of the environment (biophysical and socio-economic) are identified. The EMP in turn provides a tool for meeting the objective to reduce or avoid negative environmental impacts associated with a project within a certain environment by providing detailed mitigation measures and management commitments. All of these sections will become legally binding on the approval of this report.

3 DETAILED ACTIVITY DESCRIPTION

This section of the report relates to the content of an EIA Report as regulated by Regulation 31 of the NEMA Regulations:

Regulation 31(2)	*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 contemplated in Regulation 35, and must include:*
	(b) a detailed description of the proposed activity.

A legal assessment was conducted at the TRP mine to identify activities that commenced without any approval/Authorisation from relevant authorities. The following activities commenced unlawfully and require rectification in terms of Section 24G of the NEMA:

- Construction of Dams:
  - Four (4) PCDs at the Main Decline;
  - Three (3) PCDs at the North Decline;
  - One (1) PCD at the Concentrator plant; and
  - Two (2) PCDs at the TSF (Concentrator plant).
- Expansion of the existing TSF;
- Sewage Treatment Plants:
  - One (1) sewage treatment plant at the Main Decline;
  - One (1) sewage treatment plant at the North Decline; and
  - One (1) sewage treatment plant at the Concentrator Plant.
- Plant upgrade to include secondary crusher and flotation cell (**withdrawn**);
- Permanent use of temporary stockpiles (**withdrawn**);
- Emergency lay down area; and
- Upgrading of the haul road linking the north decline and silos.

These activities are discussed in detail in the sections below:

3.1 Construction of New Dams

3.1.1 Legal framework and link to listed activities

Table 3.1 indicates the listed activity triggered by the construction of pollution new dams.

Table 3.1 Construction of dams on the mine property legal framework

		EIA regulation of 21 April 2006 in terms of Chapter 5 of NEMA		EIA Regulation of 18 June 2010 in terms of Chapter 5 of NEMA		
	Environment Conservation Act (Act No. 73 of 1989)	GN R.386 of 21 April 2006	GN R.387 of 21 April 2006	GN R.544 of 18 June 2010. Listing Notice 1	GN R.544 of 18 June 2010. Listing Notice 1	GN R.544 of 18 June 2010. Listing Notice 1
4 Pollution control dams at the main Decline (Jan 2005)	GN.R. 1182 Sept 1997 Schedule (1) (j)	Repealed	N/A	N/A	N/A	N/A
3 Pollution control dams at the North Decline (Apr 2007)	N/A	N/A	(1) (e) (Section 21 g of NWA) – Activity will be included into a new Water Use Licence Application	N/A	Relisted (Activity 5)	N/A
1 Pollution control dam at the concentrator plant (June 2006)	N/A	N/A	(1) (e) (Section 21 g of NWA) – Activity will be included into a new Water Use Licence Application	N/A	Relisted (Activity 5)	N/A
2 Pollution control dams at the Tailings SF (Jun 2006)	N/A	N/A	(1) (e) (Section 21 g of NWA) – Activity will be included into a new Water Use Licence Application	N/A	Relisted (Activity 5)	N/A

3.1.2 Reason for dam construction

Pollution Control Dams at TRP were required to collect storm water runoff from the dirty areas of the mine. The water collected is recycled at the mine as part of the mining operations.

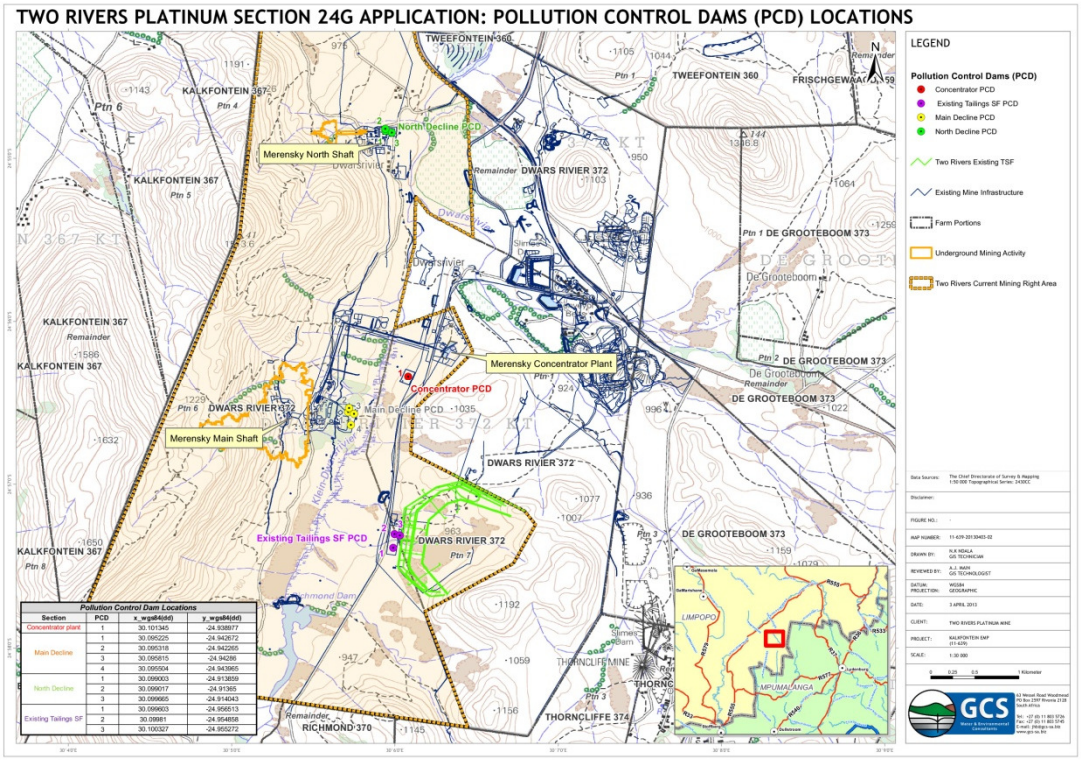
3.1.3 Description and layout (area, capacity, start date, plans)

TRP has 10 PCDs on site that forms part of the Section 24G application. Table 3.2 indicates the description of the PCDs.

Table 3.2 Description and Layout of the PCD's

ACTIVITY	LOCATION OF PCD'S/GPS CO-ORDINATES	AREA COVERED	CAPACITY	DATE OF COMMENCEMENT	CURRENT STATUS
4 Pollution control dams at the main Decline (Jan 2005)	E30.095504 S-24.943965	2900 m^2 per dam, total = 16000 m^2	9000 m^3 each Total :36 000m^3	January 2005	Activity operational
3 Pollution control dams at the North Decline (Apr 2007)	1)E30.099003 S-24.913859 2)E30.099017 S-27.91365 3)E30.099665 S-24.914043	4000 m^2 per dam, total= 12000 m^2	9000 m^3 each Total: 27 000m^3	April 2007	Activity operational
1 Pollution control dam at the concentrator plant (June 2006)	E30.101345 S-24.938977	4000 m^2	9000 m^3	June 2006	Activity operational
2 Pollution control dams at the Tailings SF (Jun 2006)	1.E30.099603 S-24.956513 2)E30.09981 S-24.954858 3)E30.100327 S-24.955272	4000 m^2 per dam, total= 8000 m^2	9000 m^3 each Total: 18 000 m^3	June 2006	Activity operational

Refer to Figure 3.1 for the location of the identified PCDs.



(Not to Scale - Refer to the A3 image over the page)

Figure 3.1 Location of the PCDs.

3.1.4 Site information prior to new activity (description, photos)

Refer to Photos 3.1 - 3.4 for images of some of the PCDs that commenced without authorisation. The photos indicate the PCD's during the construction phase, immediately after construction (prior to operational phase), and some during the operational phase.

Photo 3.1 New PCD at the Main Decline, during construction Phase

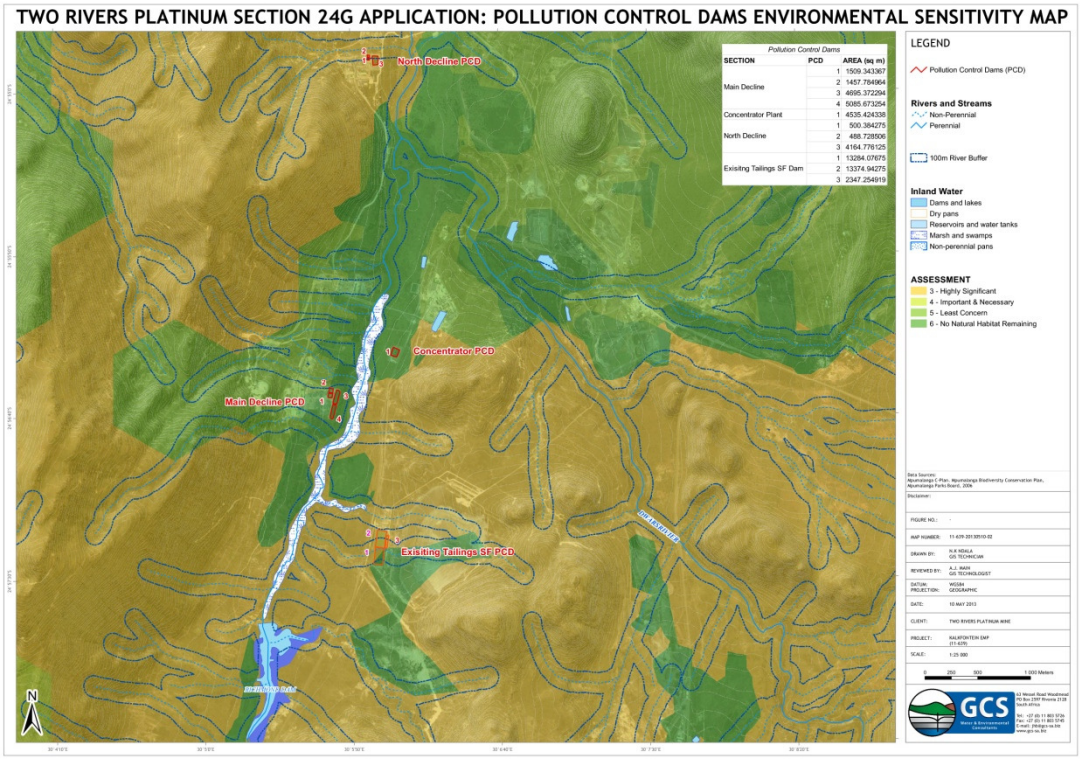
Photo 3.2 New PCD at the Plant, Prior to operation

Photo 3.3 New PCD at the North Decline, prior to Operation

Photo 3.4 Existing PCD at the North Decline, currently operational

3.1.5 Environmental Sensitivity

Refer to Figure 3.2 for the Environmental Sensitivity at the PCD areas. The data is sourced from the Mpumalanga C-Plan, Mpumalanga, 2006. Most of the pollution control dams are located in areas of 'no natural habitat remaining' or areas of 'least concern'. The dams at the North Decline and existing Tailings storage facility are located in areas deemed important and necessary'. It should be noted that, since 2006, construction of infrastructure at the North Decline has removed the natural habitat present in 2006.



(Not to Scale – Refer to A3 Figure over the page)

Figure 3.2 Sensitivity at the PCD areas

3.1.6 Cost value of the activity

The pollution control dams cost approximately R3 million each to construct. The total construction value for the 10 pollution control dams was approximately R30 million.

3.2 Alteration and Expansion of the Existing TSF

3.2.1 Legal framework & link to listed activities

Table 3.3 indicates the listed activity triggered by the expansion of the TSF. Expansion of the existing TSF is currently a listed activity in terms of GN R.544 of 18 June 2010: Listing Notice 2, Activity 28. Amendment of the Water Use Licence will be required for the expansion in terms of Section 21g of the National Water Act (Act 36 of 1998). The increased size of the expanded TSF also means transformation of an area of vacant land to industrial use in Activity 23(ii).

Table 3.3 Expansion of the Existing Tailings Storage Facility

		EIA Regulations of 21 April 2006 in terms of Chapter 5 of NEMA		**EIA Regulations of 18 June in terms of Chapter 5 of NEMA**		
	Environment Conservation Act (Act n. 73 of 1989)	GN R.386 of 21 April 2006	GN R.387 of 21 April 2006	GN R.544 of 18 June 2010.Listing Notice 1	GN R.545 of 18 June 2010.Listing Notice 2	GN R.544 of 18 June 2010.Listing Notice 3
Expansion transgression into unauthorized footprint June 2011	N/A	N/A	N/A	Activity 28 (Section 21g of the NWA) Activity 23(ii)	N/A	N/A

3.2.2 Reason for TSF Modification

Platinum tailings from TRP are being disposed of on an approved TSF to the south of the existing plant. Further studies by the mine in 2010 indicated that modification on of the TSF was needed urgently to ensure stability and safety of the structure, and employees at the mine. The modified design also included capacity for expansion in order to accommodate future tailings deposition.

3.2.3 Description and layout (area, capacity, start dote, plans)

The TSF is located on Portion 7 of the farm Dwarsriver 372KT. The description of the TSF is indicated in Table 3.4. Also refer to Figure 1.1 for the location of the TSF.

Table 3.4 Description of the Tailings Storage Facility

Activity	Location of PCDs/GPS co-ordinates (Alistair)	Area Covered	Capacity	Date of Commencement	Current Status
Expansion of the existing tailings storage facility	24°57'12.6"S 30°06'49.1"E	Final surface area will be approximately 700 000 m^2	The initial capacity was for 36 Mt. The expansion design capacity is for 66 Mt.	June 2011	Activity operational

Refer to Figures 3.3a and 3.3b below, indicating the design modifications. The following information was extracted from the Frazer Alexander Report, 2010 (Refer to Appendix I for the full report): An objective of the design modifications is to maximize the disposal capacity on the available site. The current design has an estimated remaining capacity of around 12years which would not meet the tailings disposal requirements of the TRP Mine. The available site is restricted on the north and east by the TRP Mine property boundary, but the existing design falls some distance short of these boundaries, thus providing potential for expansion. The west is restricted by the existing RWD and booster pump station, leaving no expansion potential in that direction. To the south west lies open ground which could be utilized. There is however, an existing pipeline and power line and beyond that the ore-body is encountered.

Consequently, it was considered adequate to only extend the TDF footprint to the pipe and power line, obviating relocation of these facilities. The same overall 1:3 slope as the original design has been retained as this should allow adequate rehabilitation and closure.

The current design indicates a final basin elevation of 1005masl, whereas the property boundary allows this to be increased to 1020masl. The increased footprint area compensates for the final rate of rise. The capacity models for the proposed extended dam were based upon survey data from November 2009 used in the Model Maker DTM software package. The average in situ dry density used to convert the volume to dry tonnes is 1.7, conservatively less than half of the determined and reported SG of the tailings. The underflow measured densities are around 2t/m3. Overflow densities have not been established. The overall projected capacity from the November 2009 survey is 66Mt. This would provide a life of 22years at 250000tpm.

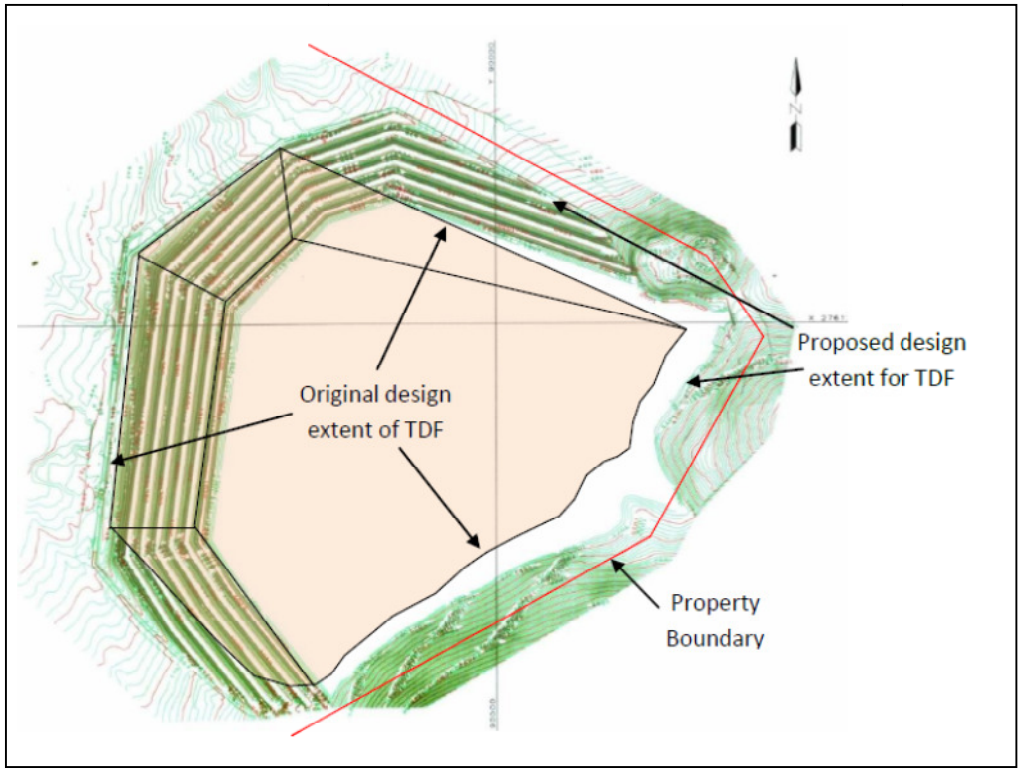
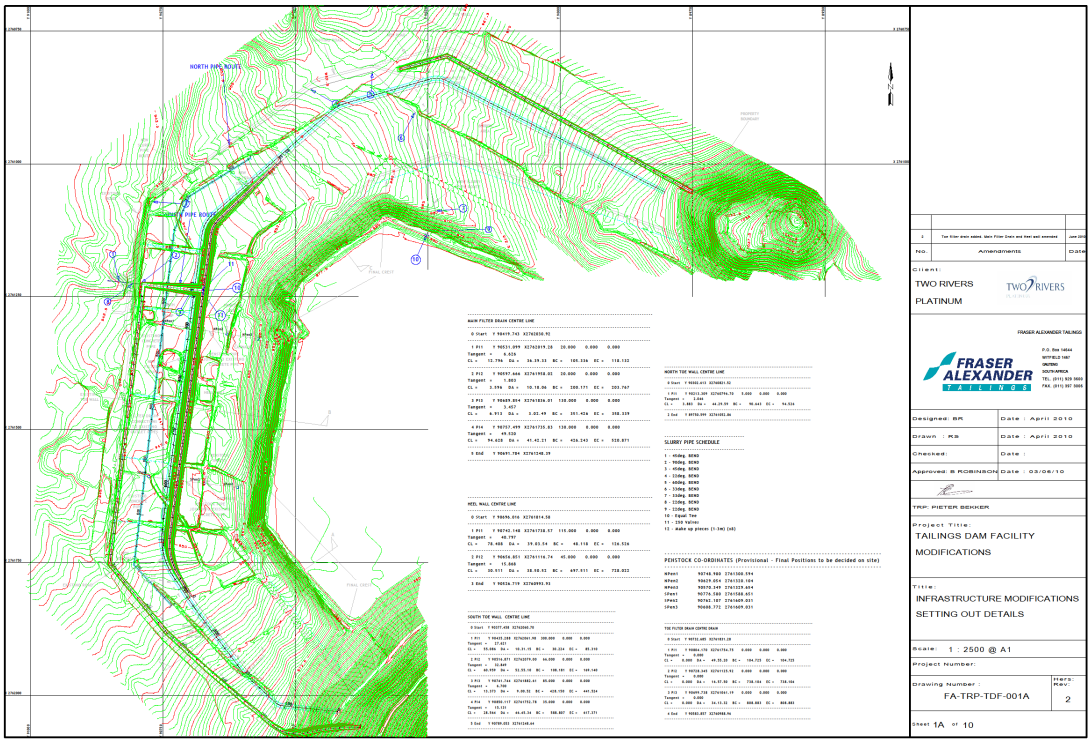


Figure 3.3a Design Modifications to the existing TSF (Taken from Frazer Alexander, 2010)



[Not to scale. Refer to the A3 Figure over the page]

Figure 3.3b Detailed design of the TSF Modifications (Frazer Alexander)

3.2.4 Site information prior to new activity (description, photos)

The TSF expansion area was against a slope on the foothill of a hill with the gradient of the site making it ideal for the deposition of tailings. The area had already been impacted by existing mining operations as well as the existing TSF. Photo 2.5 indicates the area for expansion in relation to the existing TSF.

3.2.5 Environmental Sensitivity

Refer to Figure 3.2 for the sensitivity map for the TSF area (adjacent to the PCD's indicated in the existing tailings storage area). The existing TSF falls within an area classified as 'no natural habitat remaining'.

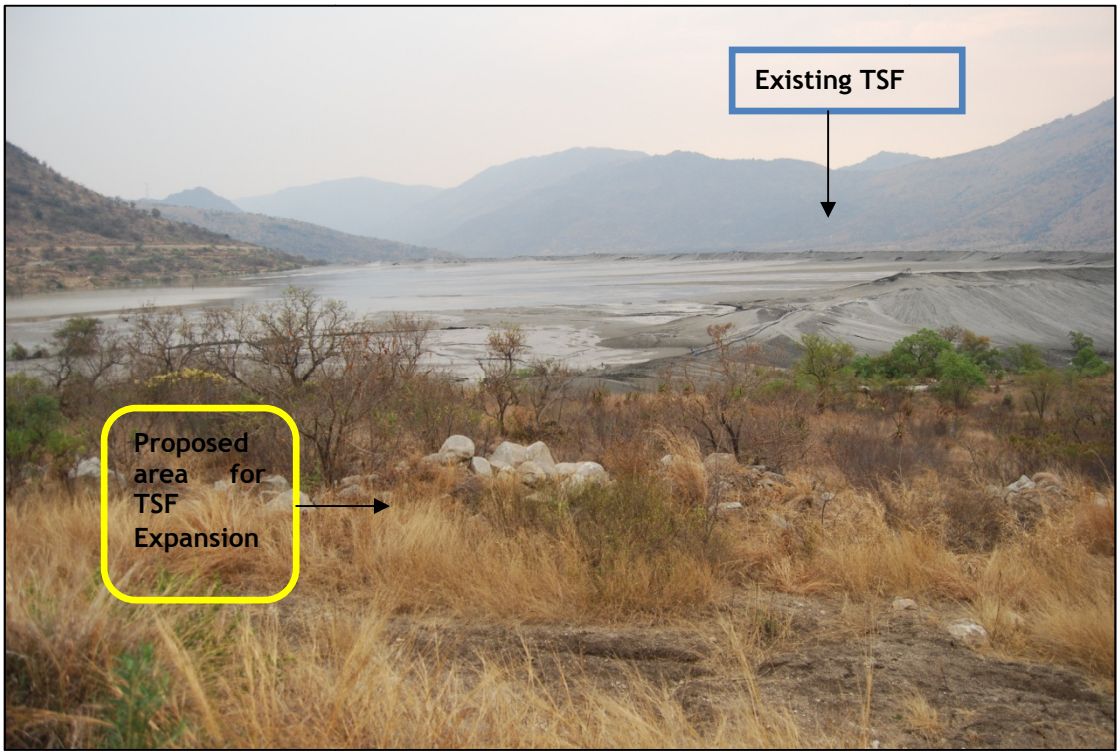


Figure 3.4 Existing TSF and proposed expansion area

3.2.6 Cost value of the activity

The cost for the TSF modification was R28 Million.

3.3 Three sewage plants

3.3.1 Legal framework & link to listed activities

Table 3.5 indicates listed activities triggered by the installation of Sewage Treatment Plants at TRP.

Table 3.5 Installation of Sewage plants

		EIA Regulations of 21 April 2006 in terms of Chapter 5 of NEMA		EIA Regulations of 18 June in terms of Chapter 5 of NEMA		
	Environment Conservation Act (Act n. 73 of 1989)	GN R.386 of 21 April 2006	GN R.387 of 21 April 2006	GN R.544 of 18 June 2010.Listing Notice 1	GN R.545 of 18 June 2010.Listing Notice 2	GN R.544 of 18 June 2010.Listing Notice 3
Sewage Treatment Plant at the main decline	1 (n)	repealed	N/A	N/A	N/A	N/A
Sewage Treatment Plant at the concentrator plant	1 (n)	repealed	N/A	N/A	N/A	N/A
Sewage Treatment Plant at the north decline	N/A	N/A	(1)(p)	repealed	N/A	N/A

3.3.2 Reason for sewage plant installation

The sewage plants were constructed as part of the approved initial mine EMP in terms of the MPRDA, the sewage plants were however not included in the IWULA, and they were also not authorised in terms of NEMA.

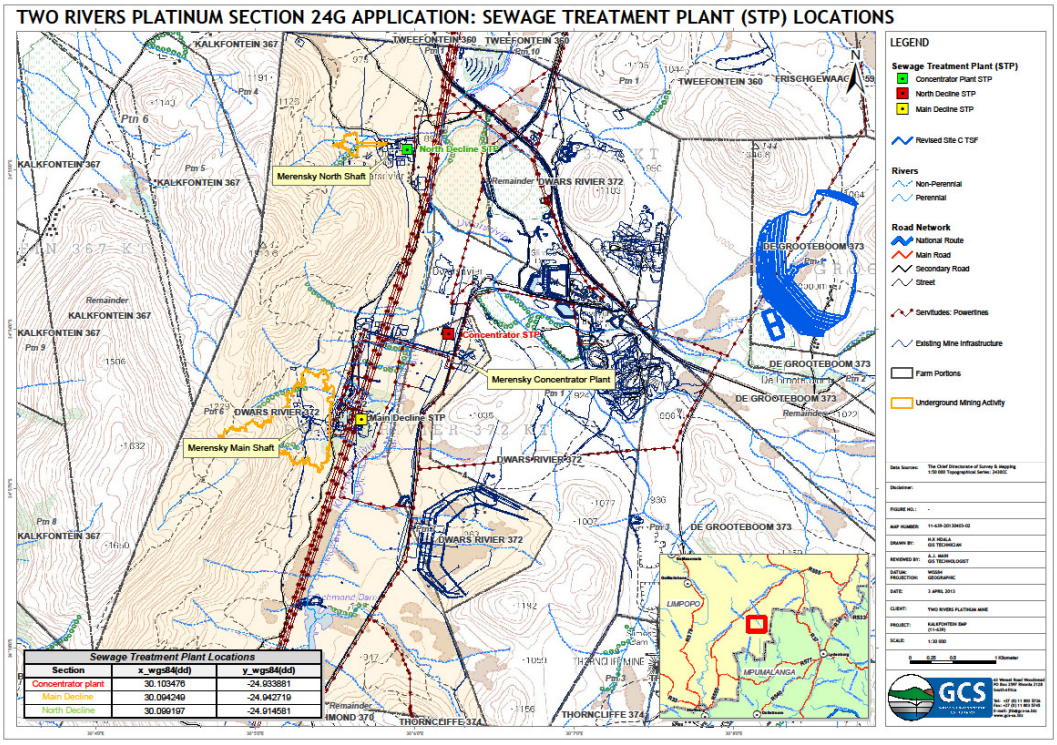
3.3.3 Description and layout

There are three sewage plants at TRP: at the Main Decline, North Decline and the Concentrator plant. The Sewage plant locations are indicated in Figure 3.5, and in Photos 3.6 to 3.8.

Table 3.6 Description of the Sewage Plants

Activity	Location of PCDs/ GPS co-ordinates (Alistair)	Area covered	Capacity	Date of commencement	Current status
Sewage Treatment Plant at the main decline	E 30.094249 S-24.942719	2500 m^2	97 500 l per day	January 2005	Activity operational

Activity	Location of PCDs/ GPS co-ordinates (Alistair)	Area covered	Capacity	Date of commencement	Current status
Sewage Treatment Plant at the concentrator plant	E30.103476 S-24.933881	30 m^2	7875 l per day	June 2005	Activity operational
Sewage Treatment Plant at the north decline	E 30.099197 S-24.914581	2500 m2	45 000 l per day	April 2007	Activity operational



(Figure Not to Scale, refer to A3 Figure over the page)

Figure 3.5 Location of the STPs

Photo 3.5 Sewage Package plants at the Main Decline

Photo 3.6 Sewage Package Plant at the North Decline

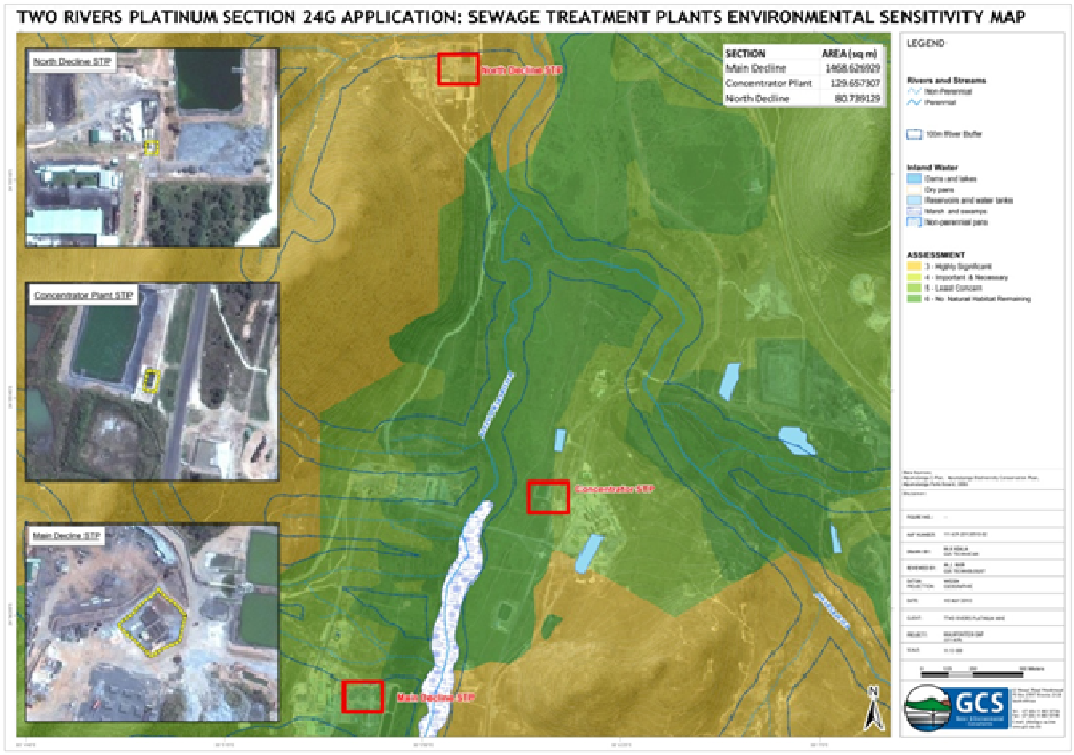
Photo 3.7 Sewage Plant at the Concentrator Plant

3.3.4 Site information prior to new activity

The sewage treatment plants were installed on the existing mine, within disturbed infrastructure areas. No photographs of the specific locations of the sewage treatment plants prior to installation are available.

3.3.5 Environmental Sensitivity

Refer to Figure 3.6 for the Environmental Sensitivity at the Sewage Treatment Plants. Sewage plants at the Main Decline and Concentrator Plant are located in areas of least concern/no natural habitat remaining. The sewage plant at the North Decline is located in an area deemed 'important and necessary'.



(Not to Scale – refer to A3 Figure over the page)

Figure 3.6 Sensitivity at the STP areas

3.3.6 Cost value of the activity

The cost for the Sewage package plants at TRP was:

- One (1) sewage treatment plant at the Main Decline: Approximately R 600 000
- One (1) sewage treatment plant at the North Decline: The plant was bought as second hand from Impala for R 600 000
- One (1) sewage treatment plant at the Concentrator Plant: Approximately R 400 000

3.4 Plant upgrade to include secondary crusher and flotation cells

3.4.1 Legal framework & link to listed activities

Table 3.7 indicates the listed activity triggered by the plant upgrade, as included in the section 24G application form.

Table 3.7 ACTIVITY 4: UG2 Concentrator Plant Upgrade

		EIA regulation of 21 April 2006 in terms of Chapter 5 of NEMA		EIA Regulation of 18 June 2010 in terms of Chapter 5 of NEMA		
	Environment Conservation Act (Act No. 73 of 1989)	GN R.386 of 21 April 2006	GN R.387 of 21 April 2006	GN R.544 of 18 June 2010. Listing Notice 1	GN R.544 of 18 June 2010. Listing Notice 1	GN R.544 of 18 June 2010. Listing Notice 1
Concentrator plant upgrade (Additional cleaner floatation cells and secondary crusher)(June2009)	N/A	**(25) {Section (39)(3)(1) of Minerals Act, 1991}[1]**	N/A	N/A	N/A	N/A

[1]**This activity is not triggered and has been withdrawn from the application.**

It is noted, since application, that listed activity 25 of GN R.386 of 21 April 2006 refers to 'The expansion of or changes to existing facilities for any process or activity, which requires an amendment of an existing permit or license or a new permit or license in terms of legislation governing the release of emissions, pollution or effluent.'

Since the Minerals Act, 1991, does not govern the release of emissions, pollution or effluent, and no other legislation was triggered by this plant upgrade, the activity is not listed and has been withdrawn from the application.

3.4.2 Reason for plant upgrade

The UG2 concentrator Plant was required upgrading to meet increased demand from the mining operations.

3.5 Permanent use of the previously temporary reef stockpiles 1 & 2

3.5.1 Legal framework & link to listed activities

Table 3.8 indicates the listed activity triggered by the permanent use of the reef stockpiles.

Table 3.8 ACTIVITY 5: Permanent Use of the Temporary Reef Stockpiles

		EIA regulation of 21 April 2006 in terms of Chapter 5 of NEMA		EIA Regulation of 18 June 2010 in terms of Chapter 5 of NEMA		
	Environment Conservation Act (Act No. 73 of 1989)	GN R.386 of 21 April 2006	GN R.387 of 21 April 2006	GN R.544 of 18 June 2010. Listing Notice 1	GN R.544 of 18 June 2010. Listing Notice 1	GN R.544 of 18 June 2010. Listing Notice 1
Permanent use of the previously temporary reef stockpiles	N/A	**(25) {Section (39)(3)(1) of Minerals Act, 1991}[1]**	N/A	N/A	N/A	N/A

[1]This activity is not triggered and has been withdrawn from the application.

It is noted, since application, that listed activity 25 of GN R.386 of 21 April 2006 refers to 'The expansion of or changes to existing facilities for any process or activity, which requires an amendment of an existing permit or license or a new permit or license in terms of legislation governing the release of emissions, pollution or effluent.'

Since the Minerals Act, 1991, does not govern the release of emissions, pollution or effluent, and no other legislation was triggered by this plant upgrade, the activity is not listed and has been withdrawn from the application.

3.5.2 Reason for permanent use of the stockpiles

Reef stockpile 1 and Reef stockpile 2 were initially authorized as temporary. As the need for these arose TRP then decided to make use of the reefs on a permanent basis

3.6 Emergency Lay-down area

3.6.1 Legal framework and link to listed activities

Refer to Table 3.9 indicating the relevant legislation.

Table 3.9 ACTIVITY 5: Permanent Use of the Temporary Reef Stockpiles

		EIA regulation of 21 April 2006 in terms of Chapter 5 of NEMA		EIA Regulation of 18 June 2010 in terms of Chapter 5 of NEMA		
	Environment Conservation Act (Act No. 73 of 1989)	GN R.386 of 21 April 2006	GN R.387 of 21 April 2006	GN R.544 of 18 June 2010. Listing Notice 1	GN R.545 of 18 June 2010. Listing Notice 1	GN R.546 of 18 June 2010. Listing Notice 1
Emergency Lay down area (reef stockpile) (June 2006)	N/A	N/A	N/A	Activity 28 (Section 21g of NWA)	N/A	N/A

Amendment of the Water Use Licence is required under Section 21g of the NWA.

3.6.2 Reason for the emergency lay-down area

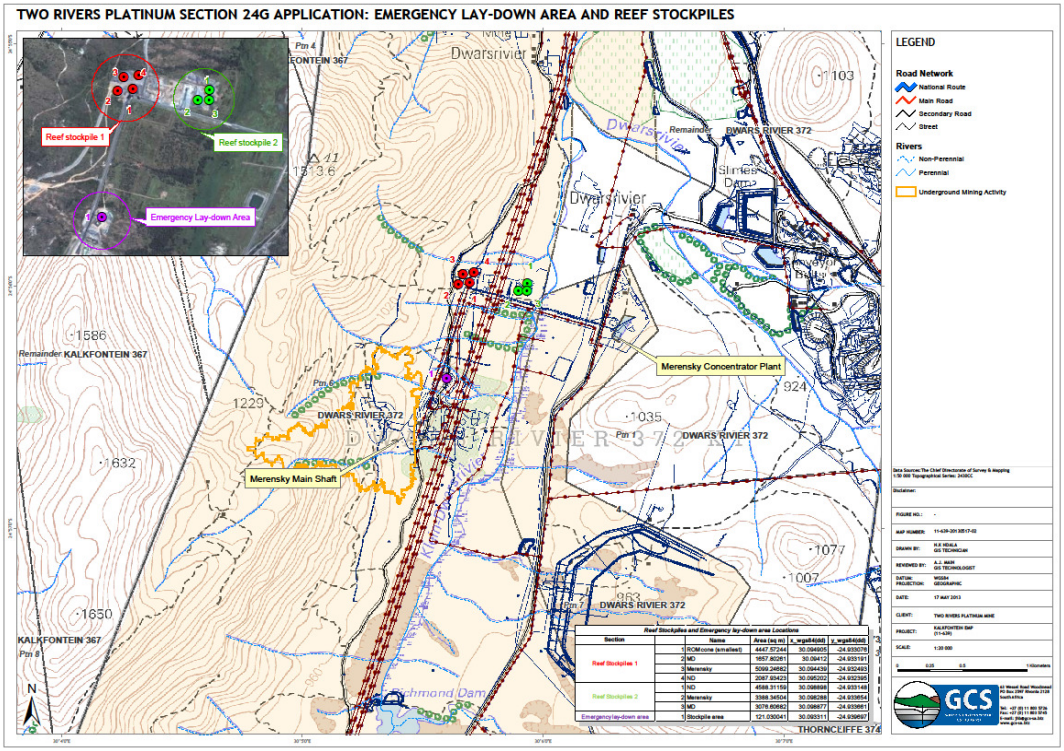
The emergency lay-down area at TRP is required in the event of conveyor breakdown. The ore requires a lay-down area during conveyor repair.

3.6.3 Description and layout

The emergency stockpile is located immediately to the north of the Main decline surface infrastructure, and comprises a small pad fed by a short off-take conveyer from the main convent conveyer. Because the stockpile is fed from a single overhead source, any tonnage placed into the area will adopt a conical shape, with side slope determined by the natural angle of repose of the ore. The total capacity of the laydown area is 6,000 tonnes. Further details regarding the emergency lay down area are presented in Table 3.10. The Emergency Lay down area is also indicated in Figure 3.6.

Table 3.10 Description of the Emergency Lay down area

Activity	Location of PCDs/GPS coordinates (Alistair)	Area covered	Capacity	Date of Commencement	Current status
Emergency Lay down area (reef and waste rock)	E 30.093311 S24.939796	5000m^2	Maximum 6000 tons	June 2006	Activity operational



(Not to Scale – refer to A3 Figure over the page)

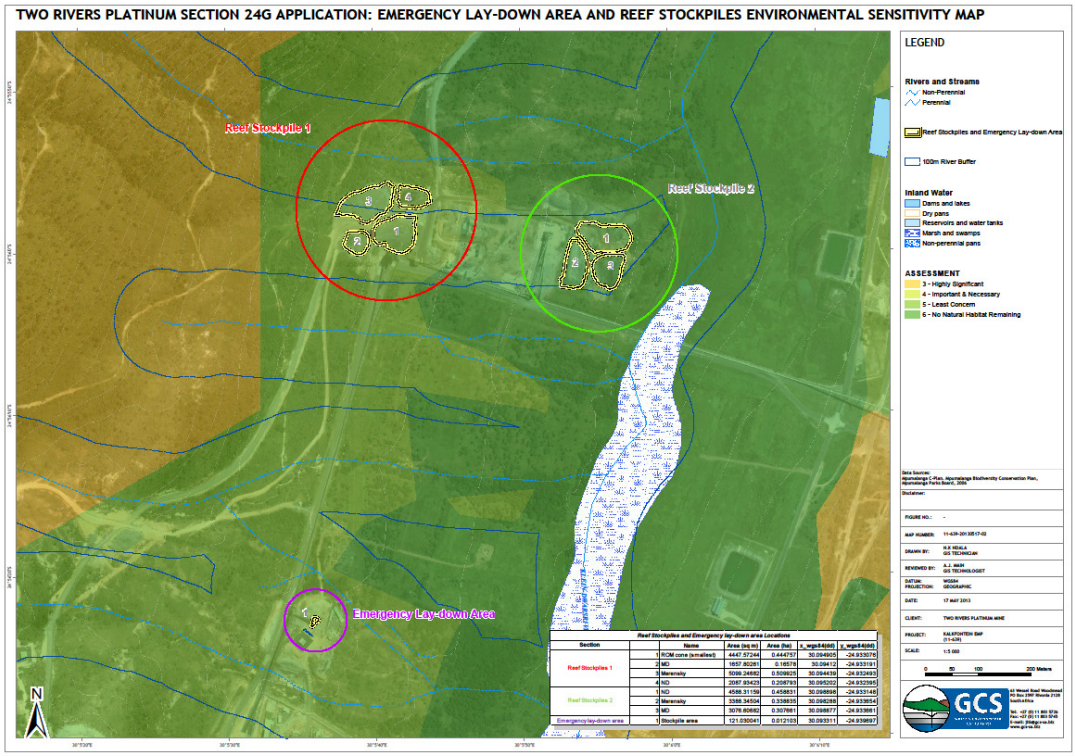
Figure 3.6 TRP Emergency Lay Down Area

3.6.4 Site information prior to new activity

The emergency laydown area was installed on the existing mine property, within disturbed infrastructure areas. No photographs of the specific locations of the area prior to installation are available.

3.6.5 Environmental Sensitivity

Refer to figure 3.7 indicating the Environmental Sensitivity in the location of the emergency lay down area.



(Not to Scale - refer to A3 Figure over the page)

Figure 3.7 Environmental Sensitivity of the Emergency Lay-down Area

3.6.6 Cost value of the activity

A cost value cannot be attributed to the emergency lay-down area as it consists of a 5ha area of land, and a new stockpile in the event of conveyor breakdown only only. No expenditure was required to implement the new stockpile area.

3.7 Upgrading of the haul road linking the north decline and silos

3.7.1 Legal framework link to listed activities

Table 3.11 indicates the listed activity triggered by the road upgrade

Table 3.11 ACTIVITY 7: Road joining the North decline and silos

		EIA regulation of 21 April 2006 in terms of Chapter 5 of NEMA		**EIA Regulation of 18 June 2010 in terms of Chapter 5 of NEMA**		
	Environment Conservation Act (Act No. 73 of 1989)	GN R.386 of 21 April 2006	GN R.387 of 21 April 2006	GN R.544 of 18 June 2010. Listing Notice 1	GN R.545 of 18 June 2010. Listing Notice 1	GN R.546 of 18 June 2010. Listing Notice 1
Upgrading of the road joining the North decline and silos (April 2007)	N/A	N/A	N/A	N/A. the Road does not exceed 8m in width so the 2010 regulations are not triggered.	N/A	N/A

3.7.2 Reason for haul road upgrade

There is no conveyor between the north decline and silos, Ore from the North Decline can only be transported by a truck. The existing haul road therefore needed upgrading for ore transportation purposes.

3.7.3 Description and layout

Figure 3.8 indicates the location of the haul road. Please note that the Figure is taken from the UG2 and Merensky Expansion feasibility study, which is the subject of a separate application. The Merensky infrastructure, as indicated in the Figure, is not yet in existence.

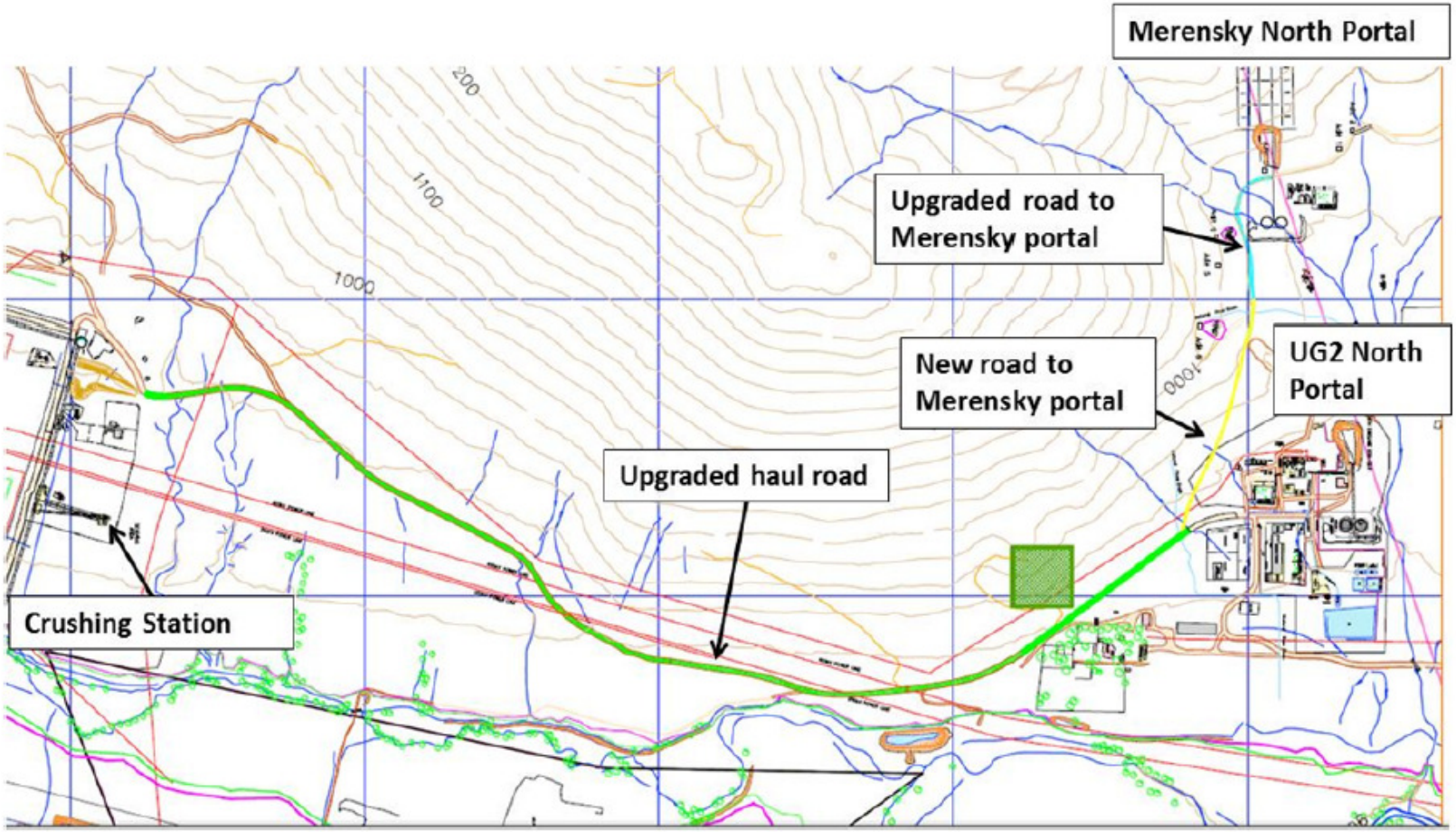
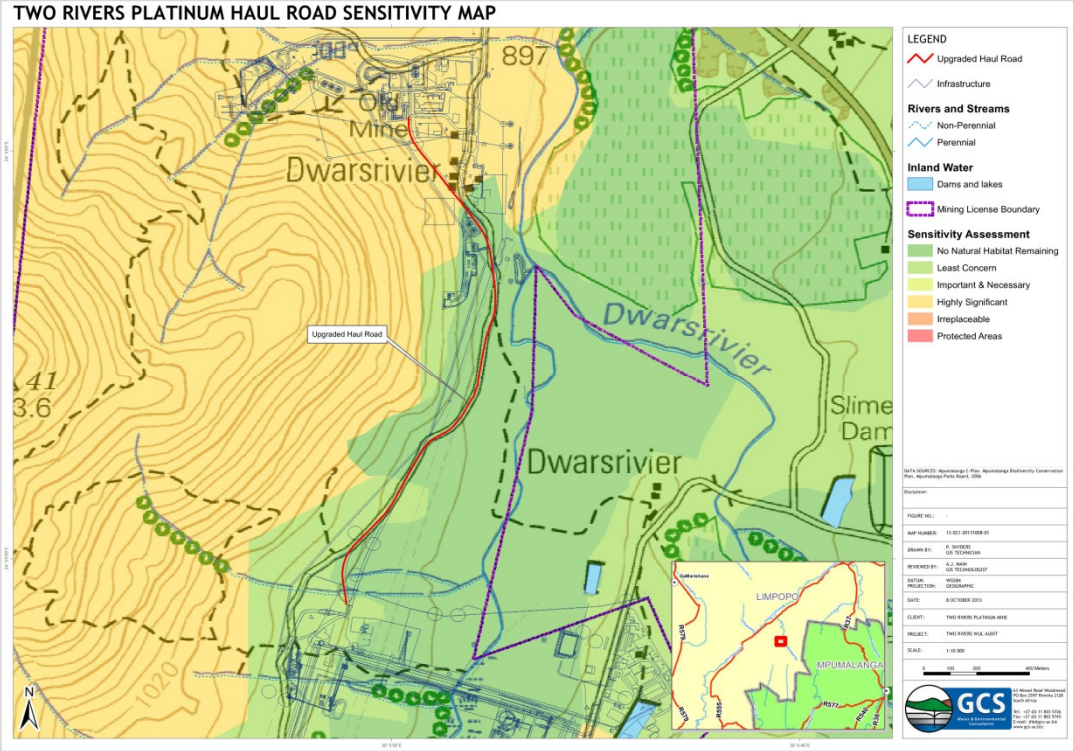


Figure 3.8 Layout of the upgraded haul road, indicated in green.
(Taken from the UG2 and Merensky Feasibility Study, the Merensky Infrastructure as indicated is not yet in existence)

3.7.4 Environmental Sensitivity

Refer to Figure 3.9 indicating the upgraded haul road on a an environmental sensitivity map. The road passes through areas 'of least concern' and 'important and necessary'.



[Not to scale, refer to the A3 Figure over the page]

Figure 3.9 Environmental Sensitivity map for the upgraded haul road

3.7.5 Site information prior to new activity

The existing haul road was upgraded on the existing mine property, within disturbed infrastructure areas. No photographs of the road prior to the upgrade are available.

3.7.6 Cost value of the activity

The costs for upgrading the haul road for transportation of the Ore were approximately R 1.5 Million.

4 BASELINE ENVIRONMENTAL DESCRIPTION

All activities applied for in terms of Section 24G of the NEMA have commenced and are currently operating within the approved mining area, where mining activities are currently taking place. Environmental studies were undertaken by specialists prior to the start of mining in 2002. The studies were conducted for the whole mine including areas were the unlawful activities are taking place. This section of the report therefore details the Environmental Status Quo of the areas prior to construction of any activity.

4.1 Geology

4.1.1 Regional Geology

The TRP Project area is situated in the eastern limb of the Bushveld Igneous Complex, the world's largest layered intrusion, comprising the emplacement of at least 7 x 105km3 of magma into the sediments of the Transvaal Supergroup (Figure 4.1). The farm Dwarsrivier 372 KT on which TRP is located, is underlain by rocks of the Winnaarshoek and Winterveld Norite-Anorthosite Formations of the Rustenburg layered suite. These Formations comprise alternating layers of chromatite, pyroxenite, norite and anorthosite (SACS, 1980). The outcrop of the Winterveld Norite-Anorthosite Formation, which hosts the platiniferous UG-2 Chromatite layer and Merensky Reef is orientated north/south. The extent of surface exposure is approximately 180km long and up to 40km wide. The regional dip of the igneous layering is generally 10 to 15° to the west.

4.1.2 Local Geology

4.1.2.1 Structure

The regional dip of the igneous layering on Dwarsrivier is approximately 10" to the west, striking north/south. Some faults are evident, forming a conjugate set striking NNE/SSW and NW/SE respectively. Two sets of later intrusive dykes comprise a distinct swarm of NNE-trending dykes, and a lesser set of dykes striking WNW. The dykes consist of a fine to medium grained dolerite.

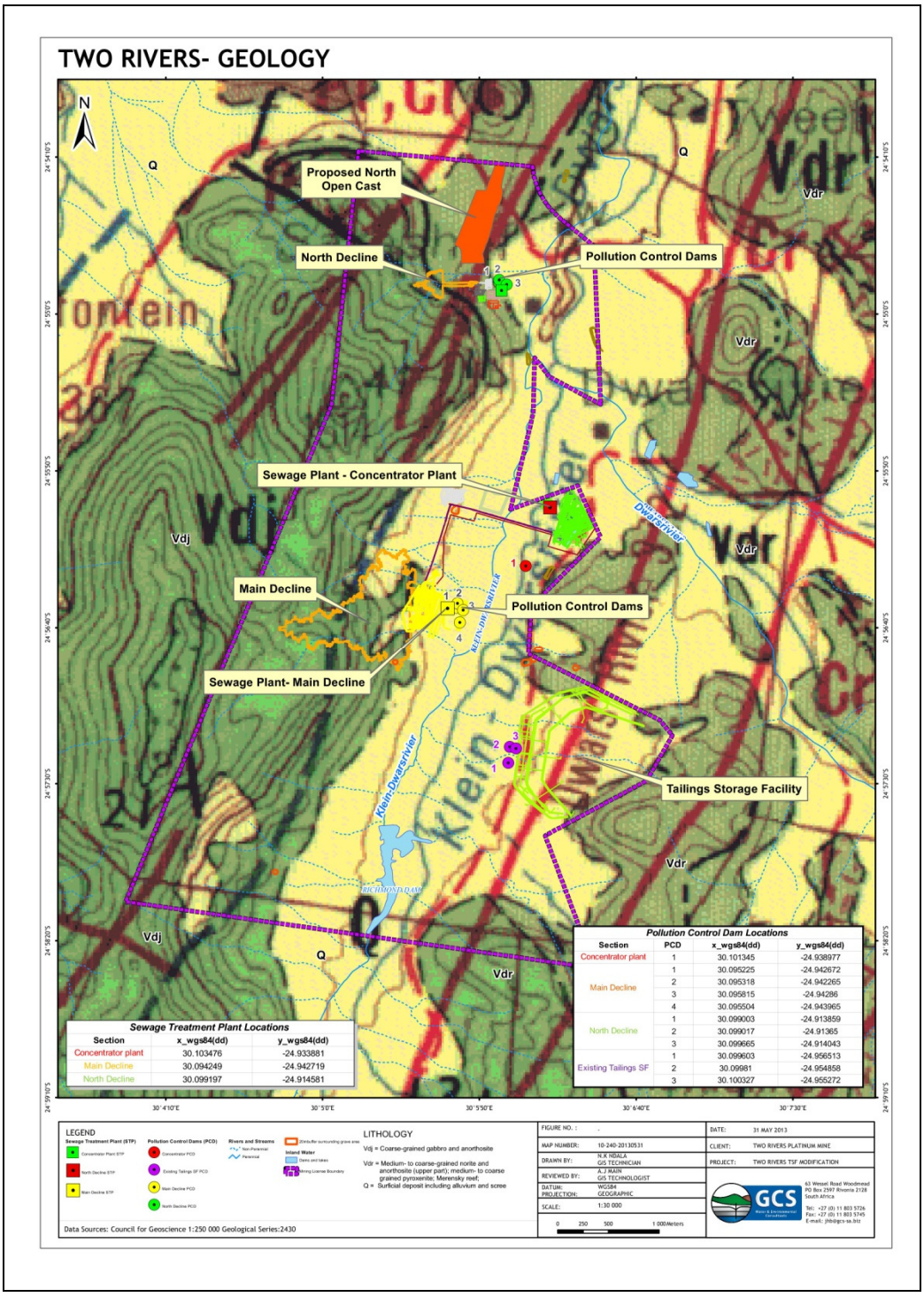
4.1.2.2 Geology of the UG-2 Chromitite Layer

The lowermost lithology consists of metanorite (FW2 Unit). This is overlain by pegmatoidal pyroxenite (FW1 Unit), which is approximately 1m thick. The UG-2, overlying the FW1 Pegmatoid varies between 54cm and 187cm in thickness, averaging approximately 115cm. The UG-2 is overlain by poikilitic pyroxenite (HW1 Unit, 4-6m thick), that hosts up to three chromitite 'leader' layers (collectively termed the UG-2A chromitite layers). The leaders vary in their development within the pyroxenite, and may be situated immediately above the UG-2, or up to 3.5m into the pyroxenite. The HW1 pyroxenite is overlain by a 6-15m

layer of mottled anorthosite (HW2 Unit), and then approximately 40m of norite (HW3 Unit). Towards the south of the property, the character of the UG-2 changes in that it hosts an internal pyroxenite parting (termed 'split reef').

4.1.2.3 Geology of the Merensky Reef

The Merensky Reef is situated approximately 150m above the UG-2, towards the top of the well-layered Upper Critical Zone, within a sequence of interlayered norite and anorthosite. The reef consists of medium-grained feldspathic poikilitic pyroxenite, varying between 1 and 4m in thickness. Thin chromitite layers are present towards the top and at the base of the pyroxenite, with associated sulphide and PGM's mineralisation. Based on the available historical information, the Merensky Reef is currently considered to be sub-economic.



(Not to Scale – refer to A3 Figure over the Page)

Figure 4.1 Geology of the study area

4.2 Climate

4.2.1 Regional Climate

The TRP ore body is situated on the eastern escarpment on the border of the Highveld and Northern Transvaal climatic zones (Schulze, 1974). The terrain is generally sub-montane with steep slopes. The climate can generally be defined as sub-humid, and can be locally described as normally hot and dry. The area falls within the summer rainfall zone and receives most of its annual rainfall during the period October to March.

4.2.2 Rainfall

Rainfall records for the weather stations Beetgeskraal, Maartenshoop and Lydenburg (most representatives) were obtained from the Weather Bureau. A summary of the mean monthly and mean annual rainfall at the stations is given in Table 4.1 and Table 4.2.

The mean annual rainfall is in the order of 703mm.

Table 4.1 Rainfall in TRP region

Stations			
Station Name	Beetgeskraat	Maartenshoop	Lydenburg
WB Station No.	05545168	05934195	0554816A7
Length of Record	1927-1970	1909-2001	1961•2000
Rainfall			
Average Monthly (mm)			
January	109	115	137.8
February	90	88.9	78.1
March	87.3	81.9	75
April	54.4	45	47.5
May	16.2	15	16
June	9.9	6	5.9
July	7.9	5.9	5.5
August	6.3	7.6	10.1
September	25.1	21.8	24.6
October	57.9	60.3	66.1
November	118.9	1126.3	126.3
December	129.1	122.9	118.4
Average annual(mm)			
Annual	712	686.4	711.3

Additional rainfall statistics for the Lydenburg Weather Station is presented in Table 4.2.

Table 4.2 Rainfall in Region of TRP-Lydenburg Weather Station (1961 to 1990)

Month	Mean days of rain	Maximum 2 hr rainfall		Maximum and minimum total per month / year			
		mm	Date	Maximum	Year	Minimum	Year
January	13.3	66	1982101/11	261	1975	42	1979
February	10.0	110	1961/02/09	246	1985	20	1983
March	9.1	57	1969/03/10	187	1987	7	1966
April	7.0	47	1967/04/05	139	1973	2	1987
May	3.2	40	1962/05/0Z	50	1972	0	1966
June	1.3	29	1961/06/ ZO	52	1989	0	1990
July	1.0	29	1974/07/01	50	1984	0	1987
August	1.6	36	1987/08/ 26	65	1979	0	1984
September	3.1	74	1988/09/01	135	1973	0	1989
October	8.9	50	1990/10/07	141	1984	28	1965
November	14.1	66	1970/11/27	295	1983	53	1985
December	13.4	78	1983/12/17	287	1987	49	1972
Annual	86	110	1961/02/09	1117	1987	530	1966

4.2.3 Mean Monthly Maximum and Minimum Temperatures

Temperature data obtained from the Lydenburg Weather Station shows that summers are warm, temperatures rarely exceed 30"C, and winters are mild. TRP is likely to be warmer than Lydenburg. Refer to Table 4.3.

Table 4.3 Temperatures Recorded in the TRP Region (Lydenburg Weather Station)

	Temperatures (°C)				
	Lydenburg Weather Station (1961 to 1990)				
Month	Mean daily			Extremes	
	Maximum	Minimum	Average	Highest	Lowest
Jan	25.9	14.7	20.3	33.5 (1983/11)	15.8 (1972/ 23)
Feb	25.5	14.2	19.8	34.5 (1983/ 27)	14.9 (1967/19)
Mar	24.8	12.9	18.8	34.0 (1984/ 02)	13.6 (1975/18)
Apr	22.6	10.0	16.3	31.3 (1987/04)	12.8 (1974/03)
May	20.8	6.0	13.4	28.0 (1979/08)	9.0 (1972/13)
Jun	18.3	2.8	10.6	25.3 (1962/28)	5.9 (1968/ 03)
Jul	18.8	2.7	10.7	26.4 (1983/15)	8.0 (1967/15)
Aug	20.9	4.8	12.8	28.5 (1979/08)	6.2 (1977/24)
Sep	23.6	8.1	15.9	33.5 91983/29)	6.4 (1974/04)
Oct	24.0	10.8	17.4	33.5 (1961/24)	9.3 (1965/19)
Nov	24.2	12.7	18.4	33.3 (1981/06)	9.0 (1968/11)
Dec	25.2	14.1	19.6	31.8 (1972/30)	15.2 (1966/17)
Annual	22.9	9.5	16.2	34.5 (1983/27)	5.9 (1968/03)

4.2.4 Mean Annual Evaporation

As can be seen in Table 4.4, the mean annual evaporation for the area, as recorded at the Lydenburg Weather Station, is 1731 mm this is the closest full weather station to the farm Dwarsrivier. No evaporation data is available for the weather stations Beetgeskraal and Maartenshoop.

Table 4.4 Average Evaporation (Lydenburg Weather Station)

Month	Rainfall (1961 - 2000)	Evaporation Figures
January	137.76	176
February	78.13	154.7
March	74.98	148.9

Month	Rainfall (1961 - 2000)	Evaporation Figures
April	47.50	114.6
May	16.00	102.5
June	5.86	88.2
July	5.48	103.2
August	10.12	137.7
September	24.63	170.6
October	66.09	184.2
November	126.34	165.9
December	118.42	182
Year	711.30	1731

From the evaporation and rainfall figures it can be seen that TRP is located in a water deficit area, where evaporation is greater than rainfall. This reduces the potential for leachate.

4.2.5 Prevailing Wind Direction

The Lydenburg Weather Station is the nearest station to the TRP site with wind records. Generally, winds recorded at Lydenburg Weather Station are light (1.6 to 3.5m/s) and blow predominately from the north-west and south-east throughout the year. However, due to the mountainous terrain, wind directions cannot be accurately assessed and the micro-climate can be unpredictable.

4.2.6 Incidence of Extreme Weather Conditions

The area is not exposed to extreme temperatures. Frost and hail are rare occurrences.

4.3 Topography

The Dwarsrivier farm portions on which the TSF, the PCDs and the Sewage package plant are located is traversed by the Klein Dwars River. The confluence of the Klein and Groot Dwars River is just to the north of the northern decline. The confluence of these TRP is also located on the property. The eastern portion of the property generally slopes in a westerly to south-westerly direction, towards the Dwars River. Adjacent to the river, slopes are gentle, in the order of 3. The western portion of the property is very steep and mountainous, with the elevation at the Klein Dwars River at 920mamsl rising to an elevation of between 1513.6m and 1650m to the west. The topography to the east of the Klein Dwars River is gently sloping and then rises suddenly in the south east of the property.

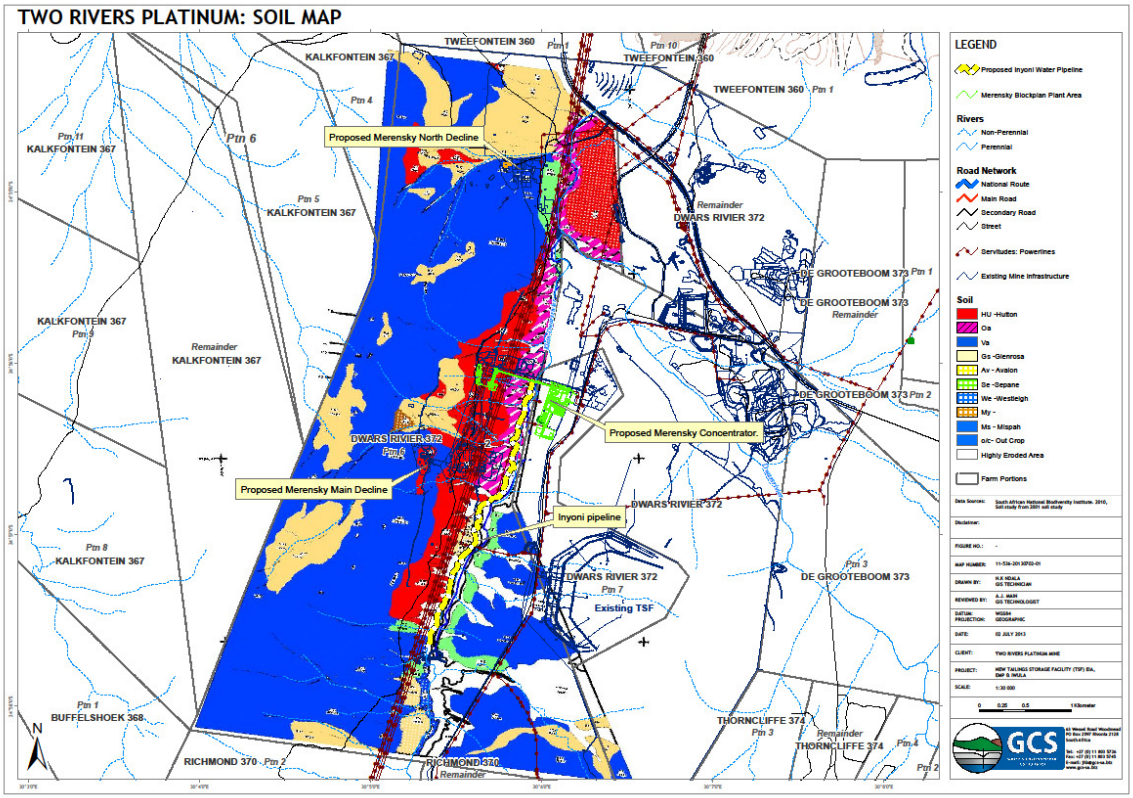
The areas where the PCDs and the sewage package plants are located have already been levelled through cutting and filling associated with the initial mining preparations and have an even gradient.

4.4 Soils

4.4.1 Description

A total of four (4) soil forms were identfied in the initial study area including Hutton (Hu), Valsrivier (Va), Glenrosa (Gs),Mispah soil forms.

The soils that will be disturbed and will require rehabilitation due to the expansion of the TSF and its related infrastructure, as well as the PCDs and the Sewage Package plant, are moderately shallow, (400 mm - 700 mm), poorly drained and susceptible to erosion and compaction.



(Not to Scale - Refer to A3 Figure over the page)

Figure 4.2 Soil types

4.5 Land Use

4.5.1 Pre-Mining Land Use

Prior to mining occurring on the Dwarsrivier property, areas adjacent to both the Klein Dwars River and the Dwars River were heavily utilized for agricultural purposes. At present all cultivation practices have ceased and the land is used predominantly for informal grazing and wilderness land.

4.5.2 Current Land Use

The Dwarsrivier Chrome Mine is also currently operating on the same property as TRP. Associated with the mine are two declines, a number of pollution control dams, a Tailings Storage Facility and a concentrator plant.

4.6 Vegetation

4.6.1 Background Description

In terms of traditional nomenclature, the vegetation of the project area forms part of Acocks's (1988)[1]. Sourish Mixed Bushveld. In more contemporary terms, it would be classified simply as Mixed Bushveld (van Rooyen &: Bredenkamp,1996) [2].

Van Wyk &: van Wyk (1997)[3] identify the area with their 4 000 square kilometre Sekhukhuneland Centre of Plant Endemism (SCPE), suggesting that numerous of its estimated 1800 vascular plant species are restricted to that part of the country.[1]

The SCPE is not a politically demarcated region, but a heterogeneous floristic region restricted to the ultramafic substrates of the Rustenburg Layered Suite, a geological system forming part of the Bushveld Complex (Siebert, 1998) [5]• Compared to ultramafic substrates elsewhere in southern Africa, the Sekhukhuneland substrates rank third in terms of their

[1] 1 Acocks,J.P.H.1988. Veld Types of South Africa.Mem.Bot.Surv.S.Afr. 57: 1-146

2 van Rooyen, N.& Bredenkamp, G.J. 1996.Mixed Bushveld.In:Low. A.B.& Rebelo, A.G.(eds) Vegetation of South Africa,Lesotho and Swaziland.DEAT, Pretoria.

3 VanWyk, A.E. & van Wyk, P. 1997.Field Guide to Trees of Southern Africa. Struik, Cape Town.

4 Siebert (2001) estimates that 54 (3%) of these are endemic and 70 (nearly 4%) are near-endemic or disjunct to the region.

5 Siebert, S.J. 1998. Ultramafic substrates and floristic patterns in Sekhukhuneland, South Africa. M.Sc. Thesis, University of Pretoria.

propensity to induce plant endemism (ibid). New endemic plant taxa are being described for the SCPE on a regular basis: for example *Plectanthus venteri*, *Gladiolus sekhukhuniensis,* and *Rhoidssus sekhukhuniensis* in 1997,1999 and 2001 (Siebert,2001). [6]

Based on the distribution of endemic I near-endemic and threatened plant taxa, three main subcentres have been identified for the SCPE (Siebert, 2001)[7]. The farm Dwarsrivier 372 KT falls within the Steelpoort Subcentre, which comprises undulating norite, pyroxenite and magnetite outcrops and hills as well as dongas and areas of weakly structured soils. The Steelpoort Subcentre is known to host 43 SCPE endemics8 and 40 SCPE near-endemics[92]. It also hosts 16 newly assessed Red Data List (RDL) taxa.

Siebert's (2001) phytosociologicalclassification of the vegetation of the SCPE has resulted in the identification of six vegetation types. They are:

- Acacia tortilis - Dicrostachys cinerea Arid Northern Bushveld
- Kirkia wilmsii - Terminalia prunioides Closed Mountain Bushveld
- Combretum hereroense - Grewia vernicosa Open Mountain Bushveld
- Hippobromus pauciflorus - Rhoicissus tridentata Rock Outcrop Vegetation
- Themeda triandra - Senecio microglossus CoolMoist Grasslands
- Fuirena pubescens- Schoenoplectus corymbosus Wetland Vegetation

4.6.2 Vegetation Types and Associated Species

It is probable that up to four of Siebert's (2001) vegetation types are represented in the project area, namely:

1. Kirkia wilmsii - Terminalia prunioides Closed Mountain Bushveld
2. Combretum hereroense - Grewia vernicosa Open Mountain Bushveld
3. Hippobromus pauciflorus- Rhoicissus tridentata Rock Outcrop Vegetation
4. Fuirena pubescens - Schoenoplectus corymbosus Wetland Vegetation

According to Siebert (2001) vegetation types 1, 2 and 3 are probably part of their Englerophyton - magalismontanum - Acacia caffra Mountain Bushveld Class.

[2] 6 Siebert,S.J. 2001.South African Journal of Botany 67(2).

7 Siebert. S.J. 2001. Vegetation of the ultramafic soils of the Sekhukhuneland Centre of Plant Endemism, South Africa. Unpublished Ph.D. Thesis, University of Pretoria (and South African Journal of Botany 68(2).

8 Plant taxa confined to the Sekhukhuneland Centre of Plant Endemism (SCPE) Plant taxa shared between the SCPE and the Wolkberg Centre of Plant Endem1sm (WCPE)

An analysis of Siebert's (2001) synthesis of the SCPE flora suggests that together, these vegetation types could potentially host as many as 93 species of conservation interest. Only 26 of these were actually seen or suspected of being seen during the previous limited field surveys in the area surrounding the TRP Mine. The number of species in the area will be confirmed as part of the Environmental Impact Assessment Phase.

4.7 Animal Life

Animal life within the project area is dependent on the soil, plant, and water resources of the area. It is these basic biophysical resources that afford suitable habitat and food to the range of fauna that exist there.[3]

4.7.1 Threatened Species

Species of the different animal groups that are potentially or actually present in the project area, and which are considered to be threatened, are outlined in Table 3.7.

Of all the threatened fauna species listed in Table 3.7, only the avifauna (birds) and the fish are confirmed to have been seen on Dwarsrivier 372KT.

Due to the current degree of disturbance on and around the mining area it is unlikely to be an important habitat for any animals. Certain animals that are less sensitive to disturbance will be on the site, such as the scrub hare (*Lepus saxatilis*), slender mongoose (*Galerella sanguinea*) and the grey climbing mouse (*Dendromus malanotis*).

There are likely to be some larger mammals in the undisturbed areas. In addition animals such as porcupines, common duiker, dassies and white-tailed mongoose have been reported to occur in the area. The study area has a moderately high diversity of bird life.

3 1. Personal communication: Dr.J.Engelbrecht. Mpumalanga Parks Board, Lydenburg.Tel013 2351673.

2.JACOBSEN, N.H.G. 1989.TransvaalReptile Survey.TPA Nature Conservation McMACHLAN,1978.

3. SA Red Data Book- Reptiles •Provincial Ordinance 12 of 1983 BROOKE. R.K. 1984. SA Red Data Book- Birds.

4.8 Surface Water

4.8.1 Catchment area and affected water course

TRP mine is located on the farm Dwarsrivier 372 KT, approximately 3.2km upstream of the confluence of the Dwarsrivier and the Klein Dwars River. The underground mining operations, metallurgical plant and associated infrastructure do not have an impact on the Groot Dwars River, and only the hydrological characteristics of Klein Dwars River will be addressed in this section. The catchment area of the two rivers at the confluence is some 448km2, with the area of the Klein Dwars River Catchment being 125 km 2 and the main Dwars River being 313 km2. A Department of Water Affairs and Forestry flow gauging station (B4H009) exists on the Dwars River just below the confluence.

Fractured and associated weathered aquifers in the Igneous Bushveld Supergroup rocks. Most of the groundwater movement within this system will probably occurring fractures and weathered zones. The hydraulic conductivities in these aquifers tend to be in the vicinity of 0.01 - 5m/d in the rock matrices however they might be orders of magnitude higher in the fractures.

The groundwater recharge for these aquifers tends to be low especially in areas that are characterised by steep topography (- 3%). Alluvial aquifers occur along the rivers. The material present in these aquifers ranges from large boulders to fine silty material. Depending on the aquifer characteristics and the proximity to the river the groundwater recharge in these aquifers can vary greatly (from > 3% to < 30%). The water levels in the Bushveld aquifer to the west of the alluvial aquifer will be affected to some degree by mining activities.

4.9 Groundwater

A good relationship (correlation = 86%) exists between groundwater levels and surface topography. The groundwater gradient is towards the Dwars and Klein Dwars Rivers.

4.9.1 Groundwater zone

There are 2 main aquifer systems present in the area, they are:

- Fractured and associated weathered aquifers in the Igneous Bushveld Supergroup rocks. Most of the groundwater movement within this system will probably occur in fractures and weathered zones. The hydraulic conductivities in these aquifers tend to be in the vicinity of 0.01 - 5m/d in the rock matrices however they might be orders of magnitude higher in the fractures.

The groundwater recharge for these aquifers tends to be low especially in areas that are characterised by steep topography (~ 3%).

- Alluvial aquifers occur along the rivers. The material present in these aquifers ranges from large boulders to fine silty material.

Depending on the aquifer characteristics and the proximity to the river the groundwater recharge in these aquifers can vary greatly (from > 3% to < 30%). The water levels in the Bushveld aquifer to the west of the alluvial aquifer will be affected to some degree by mining activities.

4.10 Air Quality

Fugitive dust at TRP originates from the rock dump, blasting, crushing of ore, tailings dams associated with the mine and the movement of heavy vehicles on the gravel roads and materials handling (loading and downloading). Air pollution may result from additional infrastructure; however the impacts in this regard will be minimal as the additional activities are located within the existing mining operations.

4.11 Noise

The existing noise levels in the vicinity of the TRP Mine site include traffic on the R555 road and mining activities. Environments which are recognized, as being noise sensitive includes residential area, offices, educational, health and church buildings. None of these sensitive environments are in close proximity to the TRP mining area.

Limited noise may result from the additional activities, although this may be considered to be insignificant as the proposed project will be located in an area in which mining currently takes place.

4.12 Archaeology

The presence of protected graves sites in the project area are indicated in Figure 4.3. A detailed survey was completed in December 2001 by Cultural Resource Consultants and an additional survey was conducted in March 2002 at the plant, stockpile area, conveyor route and the ventilation shafts area.

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act No. 25 of 1999) and NEMA.

4.12.1 Stone Age

The Stone Age is well represented in the area. Although no sites were identified within the project area, a variety of stone tools dating from the Early Stone Age right through to the Late Stone Age were identified along with a few wall paintings higher up in the mountains. One Early Stone Age chopper tool was picked up in the valley alongside the Klein Dwars River. Late Stone Age material that was found consisted of cores, broken blades and scrapers. Most of these were also found in the valley.

Three Late Stone Age tools, a thumbnail scraper, core and core scraper were made of a shiny black rock, that seem to have been brought to this area from a distant area as it is not similar to the surrounding material. Some of the lithic tools clearly show signs of being exposed to water. Coupled with the fact that clear signs were visible on the surface of water flowing from uphill, it seems as if the tools were mainly washed down from higher up the mountain slopes where there might be Stone Age sites.

It is known that rock art sites (probably dating to the Late Stone Age) are found in the mountains. The higher ying areas were however not surveyed as no development is planned there for the near future. The mountains would certainly have provided ample shelter for Stone Age people. The valley on the other hand would have been an easy hunting ground for these people as migrating animals would easily have been trapped and killed here.

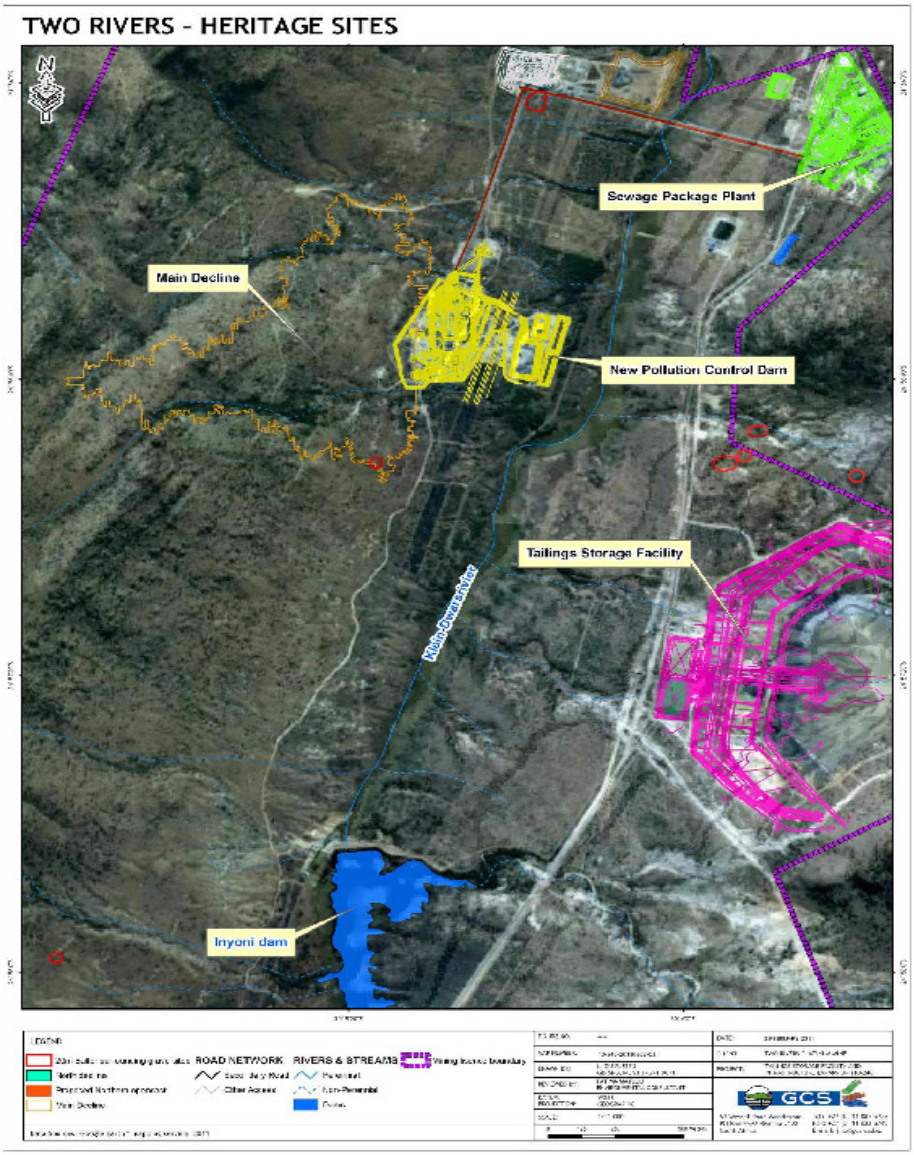
4.12.2 Iron Age

Iron Age pottery was found scattered around in the total surveyed area. However it was more in abundance in the valley. Most of the potsherds were undecorated, but decorated pieces were found in two instances. Other typical Iron Age features that were found included grinding stones, hammer and rubbing stones and middens. It however seems as if only one Iron Age site was located.

The vegetation of the area is suitable for the farming communities of the Iron Age, as these people herded livestock and planted different crops. The topography is also suitable for Iron Age settlement.

4.12.3 Historical age

A number of recent sites belonging to the historical period were identified. This also includes gravesites. Recent artefacts such as old fence poles, fragments of glass, bottles, metal objects and ceramics and bicycle parts were seen throughout the surveyed area. This clearly indicates that the farm was occupied during the historical period.



(Not to Scale - Refer to A3 Figure over the page)

Figure 4.3 Heritage Sites

4.13 Sensitive Landscapes

All the activities applicable to the development description in Section 2 of this document have been, or will be, undertaken within the existing mining footprint, or within already disturbed areas. This will assist in limiting any impacts on potential sensitive environments.

Table 4.5 Sensitive Landscapes

Types of sensitive landscapes	Occurrence at Two Rivers site
Nature conservation or ecologically sensitive areas - indigenous plant communities (Particularly rare communities and forests), wetlands, rivers, riverbanks, lakes islands, lagoons, estuaries, reefs, inter-tidal zones, beaches and habitats of rare animal species.	The Sekhukhune land area in general harbours a number of endemic plant species, namely heavy metal accumulators. This is due to the outcropping UG-2 and LG-2 seams which are rich in minerals. Wetlands do not occur on the site, except for the riparian areas and vegetation closely associated with the major rivers (riverbanks).
Sensitive physical environments – Such as unstable soils and geotechnically unstable areas.	Loamy clay occurs within the floodplain of the Klein Dwars River requires special attention from geotechnical perspective – structures need special foundations to accommodate the shrink swell properties of this soil.
Important natural resources – river systems, ground water systems, high potential agricultural land.	The alluvial aquifer associated with the Klein Dwars River occurs on the site" Major Aquifer System" The new National Water Act does not distinguish specific ground water resources as requiring protection; it requires that all ground water resources be protected.
Sites of special scientific interest.	There are no sites of special scientific interest. A national geological monument occurs on the northern boundary of the farm Dwarsriver.
Sites of social significance – including sites of archaeological, historic, cultural, spiritual or religious importance and burial sites.	Archaeological sites and gravesites have been identified.
Sites of outstanding natural beauty, panoramic views and scene drivers.	The mountains to the west of Two Rivers are of natural and offer panoramic view of the areas below.
Green belts or public open space in municipal areas.	The site is in a rural area.

5 PUBLIC PARTICIPATION PROCESS

***Note**: The Public Participation Process (PPP) for the Section 24G application was initiated during the EIA Phase of the parallel application process for TRP, as the Scoping Phase was not required by LDEDET. Issues raised by the authorities and I&Aps during the public review have been incorporated in this Final EIA Report which will then be submitted to the LDEDET after a final public review period in November-December 2013.*

5.1 Purpose of Public Participation

PPP is a requirement of the EIA/EMP process and ensures that all relevant I&APs are consulted and involved. The process ensures that all stakeholders have an opportunity to raise their comments as part of an open and transparent process, which in turn ensures for a complete comprehensive environmental study.

The purpose of PPP and engagement process is to:

- Introduce the proposed project;
- Explain the EIA/EMP and PPP processes to be undertaken;
- Determine and record public issues and concerns;
- Provide opportunities for public input and gathering of local knowledge;
- Inform a broad range of stakeholders about the project and the environmental process to be followed;
- Establish lines of communication between stakeholders and the project team;
- Identify all the significant issues in the project; and
- Identify possible mitigation measures or environmental management plans to minimise and/or prevent environmental impacts, associated with the project; and
- Once the concerns of I&APs have been established, the EIA/EMP study will aim to address these concerns.

5.2 Public Participation Methodology

5.2.1 Identification of Authorities

A comprehensive list of authorities was compiled during the early stages of the project.

The authorities as listed below have been invited to become involved in the process by inviting them to the introductory authorities meeting.

- Department of Minerals and Resources (DMR)- Regional Office- Polokwane;
- Limpopo Department of Economic Development, Environment and Tourism (LDEDET);
- Department of Water Affairs (DWA)- Regional Office Lydenburg;
- South African Heritage Resources Agency (SAHRA);
- Limpopo- Department of Agriculture;
- Greater Tubatse Local Municipality; and
- Ward Councilor.

5.2.2 Identification of I&APs

All I&APs on the existing Two Rivers database were contacted in terms of regulation 55 of the NEMA as interested and affected parties (I&APs) in relation to the application. During the consultation with I&APs, as well as with the mine, additional parties will be identified and included within the existing database to provide an updated database. Numerous I&APs will be notified by word of mouth. Parties who respond to the advertisements and notifications will be included in the database. A copy of the initial stakeholder database is included in Appendix F.

5.2.3 Notification of Stakeholders

A2 Site notices were placed at the following locations:

- Entrance to the mine;
- Entrance to the North Decline;
- Proposed area for the new TSF; and
- At the Kalkfontein area.

A3 notices were placed at the following tribal offices:

- The Buffelshoek tribal office;
- Kalkfontein Tribal office; and
- Masha Royal house.

A copy of this notice is attached as Appendix C. Table 5.1 below indicates the placement of site notices in the communities surrounding TRP.

Table 5.1 Location of Site Notices

Location (Street Name/Other)	Name of the Town/Public Place	GPS Co-ordinates (WGS84 Decimal Degrees)
Buffelsfontein Tribal Office	Steelpoort	East: 30 02.395
		South: 24 57.238
Kalkfontein (Isaac Masha)	Steelpoort	East: 30 03.987
		South: 24 53.223
Masha Royal House/tribal office	Steelpoort, Ga Masha	East: 30 00.543
		South: 24 53.475
Mine Entrance	Steelpoort	East: 30,104830
		South: 24. 93410
North Decline	Steelpoort	East: 30.09822
		South: 24.91548
Kalkfontein and Tweefontein	Steelpoort	East: 30.08323
		South: 24.89528
New TSF area	Steelpoort	East: 30.14180
		South:24.94022

An advertisement, in terms of Regulation 54 of NEMA regarding the project background and the assessment process being followed was placed in the following newspaper:

- The Steelburger, published on Friday, 05 July 2013.

Refer to Appendix D for proof of the advertisement placed.

Background Information Documents (BID), in terms of regulation 54 of the NEMA were sent to all I&APs/Stakeholders as per the existing database for Two Rivers. All I&APs were notified by way of fax, email or letter, depending on their preferred method of contact. A copy of the BID is attached as Appendix E. The BID's and site notices were distributed in both English and Sepedi, to ensure that no stakeholder was excluded.

5.2.4 Meetings / Open day

A community open day was held on Wednesday 21 August 2013. All registered stakeholders were invited via registered mail, fax, telephone or sms as preferred. Two focus group meetings, one for the surrounding landowners, and one for the authorities, were held at Didingwe Lodge for Thursday 22 August 2013. The registered stakeholders were personally invited as per their preferred method. However, there were no attendees for the Authorities meeting. Refer to the meeting minutes in Appendix G.

5.2.5 Document Review

5.2.5.1 Draft EIA Report

The draft EIA/EMP reports were made available for a 40 day review period, from 1 August to 16 September 2013. Access to the documents was via:

- Hard copies at the Two Rivers Security Office
- Electronic Copies on the GCS website: www.gcs-sa.biz
- CD's were posted to stakeholders who requested them

5.2.5.2 Final EIA/EMP Report

The final EIA/EMP reports will be available for a 30 day review period, from 5 November 2013, to 5 December 2013. The reports will be available at the following venues:

- Hard copies at the **Two Rivers Security Office;**
- Electronic Copies on the **GCS website**: www.gcs-sa.biz; and
- **CD's** will be posted to stakeholders who request them.

Comments on the final reports will be incorporated for final submission to LDEDET.

5.2.6 Comments and Response

Stakeholders had opportunity to raise queries and issues regarding the Section 24G application, and Draft EIA report, during the EIA phase consultation meetings, and to GCS via telephone, email, post or fax during the review period of 1 August to 16 September 2013. Refer to Table 5.2 below which summarises the issues raised via all communication, and GCS's response.

Lengthly letters of objection were received from Bokomoso Environmental Consultants, on behalf of Mr Le Grange. The letters included queries regarding all of TRP's current environmental applications. The comments and responses pertaining only to the Section 24G application have been extracted from the full response to Bokomoso, and are included in Table 5.2 below. The letters of objection received from Bokomoso are contained in Appendix H. GCS's full document of response to all queries was attached with the New TSF Final EIA, since most of the queries relate to the proposed New TSF application, and not the Section 24G application.

Table 5.2 Sec24G Draft EIA Stakeholders Comments and Response

Communication and Date	Person	Issue	Response
21 August 2013 Public Open Day	N/A	No specific queries or issues were raised regarding the Section 24G Application	N/A
22 August 2013. Landowner Meeting.	N/A	No specific queries or issues were raised regarding the Section 24G Application	N/A
22 August 2013. Authorities Meeting.	N/A	There were no attendees at the Authorities meeting	N/A
Faxes received on 3 April and 16 September 2013.	Bokomoso Environmental, On behalf of Mr Le Grange.	LDEDET's requirements w.r.t to S24G Application: Sections 2.2.2 and 2.2.3 of the letter dated 3 April. Sections: Introduction; 2.1.12; 2.1.16; 2.2.2; 2.2.6 and 2.3.2 of the letter dated 16 September	We refer the I&AP to Section 24G(1) of NEMA which gives a discretion to the competent authority to decide on the process to be followed. Refer to Appendix B indicating LDEDET's specific requirements. It should be noted that the Section 24G application for the existing sewage plants falls under the 2006 NEMA regulations, due to the start date of the activity. Only the proposed new sewage plants fall under the NEM:WA. This is clearly stated in the Section 24G application and Draft EIA reports. GCS followed the instruction of LDEDET officials when submitting the applications. All applications have been acknowledged and accepted. LDEDET can possibly provide further clarity on this point. Kindly note, that GCS was advised by LDEDET that a Scoping process was not required for the Section 24G application process. Furthermore, information provided in the New TSF Scoping Report, regarding the Existing Tailings Storage Facility (TSF) at Two Rivers, was provided in support of the New TSF application and to provide content to the need for this facility and not for the purposes of the Section 24G application which was introduced at the EIA Phase and is a

			stand-alone application process being undertaken in parallel to the new TSF application process. Two Rivers is not exempt of the Section 24G requirements. The existing sewage plants are covered under the Section 24G and Waste Management License Applications, the new sewage plants are covered under the UG2 and Merensky EIA application and the Waste Management License Application. The Waste Management License Application covers both existing and new sewage plants. This has been approved by DEA. Correspondence to this effect will be provided on request, but was included in the Final UG2 and Merensky Scoping Reports. GCS is not familiar with the constraints Bokamoso encountered with previous EIA or Section 24G applications and cannot comment on those. GCS have consulted with the regulatory authorities in terms of the legal processes to follow for the proposed Two Rivers applications and has followed the regulatory and authority requirements to date.
Fax dated 16 September 2013	Bokomoso Environmental, On behalf of Mr Le Grange.	Notification for the S24G application was not correctly done. Section 2.1.13 of letter dated 16 September.	All NEMA Regulations were complied with. Notification was sent to the full PP database for TRP, not only those registered in the Tailings Dam process. Proof of the process followed is contained in the EIA report.
Fax dated 16 September 2013	Bokomoso Environmental, On behalf of Mr Le Grange.	The DEIA (S24G) report was completed prior to the scheduled public meeting. Section 2.1.14 of letter dated 16 September	The Draft EIA Report allows presentation of the information to stakeholders, upon which they are then able to comment/agree/disagree. They would not be able to comment on an incomplete report. Any considerations and comments are then incorporated into the Final EIA Reports, which are again made available to stakeholders before being submitted to the authorities for comment.
Faxes received on 3 April and 16	Bokomoso Environmental,	The objector requires more information regarding the	Refer to Appendix I of this report, containing a Frazer Alexander Report detailing the required design alterations.

September 2013.	On behalf of Mr Le Grange.	existing TSF structural flaw Section 2.2.2 of 16 September. Section 2.2.3 of 3 April 2013.	
Faxes received on 3 April and 16 September 2013.	Bokomoso Environmental, On behalf of Mr Le Grange.	Emergency measures & Heavy metal pollution measurements. Section 2.2.3 of 16 September, Section 2.2.3 of 3 April.	TRP has emergency procedures in place, as part of the health and safety system at the mine. Heavy metal analysis has not been done in the vicinity of the existing tailings dam since PGM's are inert. TRP conducts environmental monitoring according to license requirements, and this does not include heavy metal analysis.

6 IDENTIFICATION OF ACTIVITIES

6.1 Construction Phase

6.1.1 Construction of Pollution Control Dams

All PCDs are already in operational; however this section details possible impacts and mitigation thereof resulting from the presence of PCDs in the area. These impacts area indicated in the tables for each phase in section 7.

The following activities can be associated with the construction of the storm water and return water dams:

- Clearing vegetation;
- Topsoil stripping and stockpiling;
- Construction of dams;
- Construction vehicles/machinery on site; and
- Contractors/workers on site.

6.1.2 Expansion of the Tailings Storage Facility

During the expansion of the TSF the following activities could impact on the environment if mitigation measures are not put in place:

- Clearance of vegetation
- Waste generation
- Contractors on site
- Vehicles on site; and
- Expansion of the TSF.

6.1.3 Construction of the Sewage Treatment Plants

During the construction of the Sewage Treatment Plants the following activities could impact on the environment if mitigation measures are not put in place:

- Clearance of vegetation area;
- Waste generation;
- Contractors on site;
- Construction of Sewage plants; and
- Vehicles on site.

6.1.4 Construction phase for the upgrading of the haul road

During the construction phase the following activities could impact on the environment if mitigation measures are not put in place:

- Clearance of vegetation area;
- Contractors on site;
- Vehicles on site.

6.1.5 Construction phase for the Emergency Lay down area

During the construction phase the following activities could impact on the environment if mitigation measures are not put in place:

- Clearance of vegetation area;
- Contractors on site.

6.2 Operational Phase

6.2.1 Operation of Pollution Control Dams

The following activity can be associated with the Pollution Control Dams during the operational phase:

- Operation and Maintenance of the PCDs

6.2.2 Operation of the Tailings Storage Facility

During the operation of the TSF the following activities could impact on the environment if mitigation measures are not put in place:

- Operation of the TSF; and
- Use of Pipelines and PCDs.

6.2.3 Operation of the Sewage Treatment Plants

During the operational phase, the following activities could impact on the bio-physical environment and the cultural/social setting:

- Sewage management;
- Vehicle/Machinery on site; and
- Operation of the Sewage Treatment Plants (STPs).

6.2.4 Operation of the Haul Road

The following activities can be associated with the operation of the haul road:

- Dust generation;
- Presence of vehicles; and

- Transportation

6.2.5 Operation of the Emergency Lay Down Area

The following activities can be associated with the operation of the emergency laydown area

- Operation of the laydown area;
- Storm water management; and
- Dust generation.

6.3 Decommissioning and Closure Phase

Closure for mining activities is highly important as far as the environmental factors are concerned. If mitigation measures are not followed properly it could have devastating impacts. As closure without mitigation factors could have a permanent effect on the area and its surrounds. The decommissioning of the all identified activities will form part of the mine closure.

The mine will be required to apply for a Closure Certificate according to Section 43 of the MPRDA. Section 43 (1) of the MPRDA stated that *"the holder of a … mining right …remains responsible for any environmental liability, pollution or ecological degradation, and the management thereof, until the Minister has issued a closure certificate to the holder concerned"*.

It is therefore assumed that all environmental impacts will be successfully addressed and managed at this phase. When the decision is taken to decommission the mine, the activities below will be implemented:

- Recovery of all saleable infrastructure;
- Demolition of structures;
- Ripping of all compacted areas, which will be followed with amelioration and vegetation;
- Ensure that all remaining dumps, piles and slopes are sufficiently shaped to blend in with the surrounding infrastructure;
- Amelioration and vegetation of all disturbed areas;
- Maintenance of all re-vegetated areas up until such areas initiate succession and create a sustainable cover;
- Monitoring of key environmental variables (i.e. soils, vegetation, groundwater and
- surface water) in order to demonstrate stability of rehabilitated areas;

- Weed management after closure, limited to areas disturbed by mining or included in the mining area.
- Monitoring will be undertaken for a specific period after closure or up until such time that all areas create a sustainable cover and ecosystem.

6.3.1 Removal of Infrastructure

The following activities will be conducted during the decommissioning and closure phase of the project:

Buildings

- All infrastructure will be removed and rehabilitated, should no alternative use be found for the structures;
- Foundations will be removed to a depth of 1 m below surface;
- An alternative use for the brick structures will first be sought i.e. they can either be sold/donated to the post-mining landowner on sale of the land. If an alternative use cannot be found, the buildings will be demolished; and
- All material recovered from the demolition of buildings and/or structures will either be transported to a permitted disposal site, sold as scrap or made available to the local community as building materials (provided they are in a satisfactory condition following demolition).

Linear Infrastructure

- Linear infrastructure constructed will be removed if it proves to inhibit land use at decommissioning. Where possible, infrastructure will remain for future operations as determined by Two Rivers or for social investment opportunities; this will be decided in conjunction with IDP of the area and the local authorities (i.e. municipality). The soils and land capability will be rehabilitated to near pre-mining conditions;
- All roads will be rehabilitated by ripping these structures to a depth of 500 mm; and
- All fences erected will be dismantled and either disposed of at a permitted disposal site or sold as scrap (provided these structures will no longer be required by the post-mining land owner). Fences erected to cordon-off dangerous excavations will remain in place and will be maintained as and when required.

Water storage Dams

- All dams will be maintained to ensure that no leakages occur;

- Overflow pipes will be kept clean;
- Sumps will be kept clean and all pumps will be maintained; and
- The dams will only be demolished should the area prove to be free draining with no pollution potential after rehabilitation.

6.3.2 Active Rehabilitation - Landscaping

Landscaping activities will involve the active rehabilitation of the area with the following activities taking place:

- Recovery of all saleable infrastructure;
- Demolition and removal of all buildings and structures;
- Ripping of all compacted areas, which will be followed with amelioration and vegetation;
- Ensure that all remaining piles and slopes are sufficiently shaped to blend in with the surrounding environment;
- Amelioration and vegetation of all disturbed areas;
- Maintenance of all re-vegetated areas up until such areas initiate succession and create a sustainable cover;
- Monitoring of key environmental variables (i.e. soils, vegetation, groundwater and surface water) in order to demonstrate stability of rehabilitated areas; and
- Weed management after closure, limited to areas disturbed by mining or included as infrastructure related to the mine.

***Note**: Impacts related to the decommissioning of the activities applied for in this report will be handled and managed as per the approved EMP for Two Rivers as all this activities are undertaken within the existing approved mine operations and will be there until the end of life for the mine.*

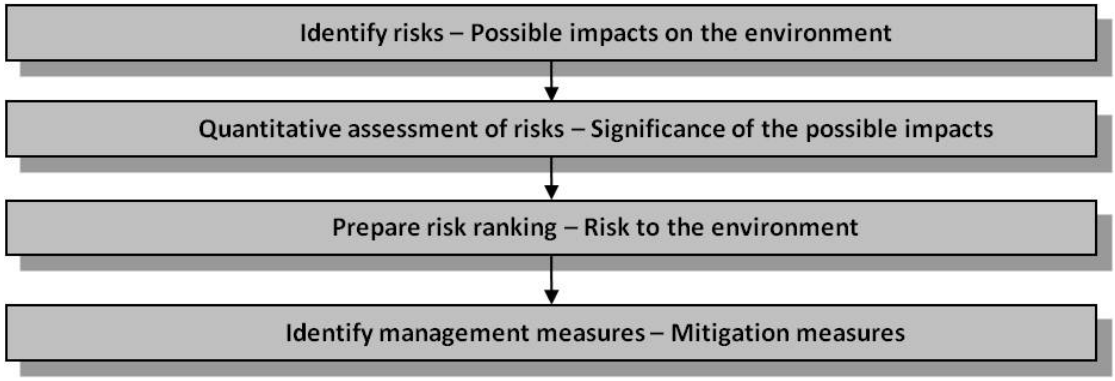
7 ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT ACTION PLAN

7.1 Environmental Impact Assessment Methodology

To ensure uniformity, the assessment of potential impacts will be addressed in a standard manner so that a wide range of impacts is comparable. For this reason a clearly defined rating scale will be provided to the specialist to assess the impacts associated with their investigation.

Each impact identified will be assessed in terms of probability (likelihood of occurring), scale (spatial scale), magnitude (severity) and duration (temporal scale). To enable a scientific approach to the determination of the environmental significance (importance), a numerical value will be linked to each rating scale.

The following process will be followed:



The following criteria will be applied to the impact assessment for the EIA/EMP:

Occurrence

- Probability of occurrence (how likely is it that the impact may occur?); and
- Duration of occurrence (how long may impact last?).

Severity

- Magnitude (severity) of impact (will the impact be of high, moderate or low severity?); and
- Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?).

Status of Impact

- +: Positive impact
- -: Negative impact

- N: Neutral (no impact)

In order to assess each of these factors for each impact, the following ranking scales were used:

Probability:=P	*Duration:=D*
5 – Definite/don't know	5 – Permanent
4 – Highly probable	4 - Long-term (ceases with the operational life)
3 – Medium probability	3 - Medium-term (5-15 years)
2 – Low probability	2 - Short-term (0-5 years)
1 – Improbable	1 – Immediate
0 – None	
Scale:=S	*Magnitude:=M*
5 – International	10 - Very high/don't know
4 – National	8 – High
3 – Regional	6 – Moderate
2 – Local	4 – Low
1 – Site only	2 – Minor
0 – None	
Status of Impact	
+: Positive	
-: Negative	
N: Neutral	

Once the above factors have been ranked for each impact, the environmental significance of each was assessed using the following formula:

SP = (magnitude + duration + scale) x probability

The maximum value that can be achieved is 100 Significance Points (SP). Environmental effects were rated as follows:

SIGNIFICANCE	*ENVIRONMENTAL SIGNIFICANCE POINTS*	*COLOUR CODE*
High (positive)	>60	H
Medium (positive)	30 to 60	M
Low (positive)	<30	L
Neutral	0	N
Low (negative)	>-30	L
Medium (negative)	-30 to -60	M
High (negative)	<-60	H

7.2 Environmental Impact Assessment, Management and Action Plans

Refer to Tables 7.1, 7.2, 7.3 and 7.4 indicating identified impacts, mitigation measures and management action plans for the construction, operation, decommissioning and closure, and post closure phases respectively. Table 7.5 is a summary of identified cumulative impacts.

The unauthorized activities from part of the overall existing mine, and as such were assessed as part of the existing infrastructure.

7.2.1 Construction Phase

Table 7.1 below indicates the Construction Phase EIA/EMP for the Sec24G activities.

Table 7.1 Construction Phase EIA/EMP

POTENTIAL ENVIRONMENTAL IMPACT	APPLICABLE TRP MINE AREA	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							ACTION PLAN	PHASE	PERSON
			M	D	S	P	TOTAL	STATUS	SP		M	D	S	P	TOTAL	STATUS	SP			
CONSTRUCTION PHASE ACTIVITIES: SITE PREPARATION, FOOTPRINT CLEARANCE, INFRASTRUCTURE AND DECLINE CONSTRUCTION, WASTE HANDLING																				
TRP MINING AREA: NEW (UNAUTHORISED) INFRASTRUCTURE WITHIN THE EXISTING MINE AS FOLLOWS: Additional pollution control dams, TSF expansion, Sewage Treatment Plants, Haul Road Upgrade, Emergency lay-down area																				
GEOLOGY																				
Alteration of Geology	N/A		0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
TOPOGRAPHY																				
Change to natural topography	All Unauthorised Infrastructure as listed above	**Site Preparation** - Storm water	4	4	1	4	36	-	M	Limit clearing to the footprint, maintain as much natural vegetation as possible	2	4	1	3	21	-	L	1. Designs should take cognisance of topographical features of the site	Site preparation & footprint clearance	Engineer
		Footprint Clearance & Levelling	4	4	1	3	27	-	L	Limit clearing and levelling activities to the footprint area only	2	4	1	2	14	-	L	1. Demarcate footprint clearly as per design. 2. Limit vegetation removal to the footprint only. 3. Limit levelling to within the footprint only.	Footprint clearance	Engineer
		Construction - infrastructure & stockpiles	4	4	1	3	27	-	L	Mine design should take cognisance of the natural surroundings	2	4	1	3	21	-	L	1. Use natural colours to paint structures where possible (green or brown) 2. Revegetate exposed surfaces immediately after construction	Construction and post construction	Engineer
SOILS, LAND USE AND LAND CAPABILITY																				
Loss of fertile topsoil	All Unathorised Infrastructure as listed above	**Footprint Clearance** & Levelling	8	5	1	5	70	-	H	Minimise the stripping footprint as far as possible, and stockpile the topsoil for future use.	4	3	1	4	32	-	M	1. Demarcate the footprint area clearly 2. Stockpile the topsoil for future use 3. Fertilise and re-vegetate the stockpile at the end of the construction phase	Prior to construction	Engineer

Soil Erosion		**Footprint Clearance & Construction -** exposed soil	6	5	1	4	48	-	M	Minimise Infrastructure footprint	4	3	1	3	24	-	L	1. Demarcate the footprint area clearly. 2. Manage storm water flow with temporary erosion control measures where possible (cut-off trenches or berms) 3.Schedule construction as soon as possible after site clearing.	Prior to and during construction	Engineer
Soil compaction		**Footprint Clearance & Construction -** vehicle movement	6	3	1	4	40	-	M	Correct use of vehicles to prevent compaction, avoidance of work in wet conditions.	4	3	1	4	32	-	M	1. Use tracked vehicles instead of wheeled vehicles where possible 2. Avoid clearance and earthworks in the rainy season 3. Stockpile soils loosely and to a sufficient height to prevent vehicles driving over the stockpiles 4. Drive only on constructed roads	Prior to and during construction	Engineer
Soil Contamination		**Waste Handling** - waste water and fuels	8	2	1	5	55	-	M	Prevent seepage of wastewater and spillage of fuel and oils.	2	2	1	2	10	-	L	1. Solid waste must be stored at site on an approved waste disposal area, and removed regularly by credible contractors 2.A berm should be constructed upslope of the construction footprint area, to direct clean water away from the dirty water area 3. Water from the development footprint must be captured and contained 4. Any spillages from the wastewater containment system must be managed immediately in accordance with the Emergency Response Plan 5. Chemicals and fuels to be stored in bunded areas. 6. Vehicles to be correctly maintained to prevent oil leakage	Prior to and during construction	Engineer
TERRESTRIAL BIODIVERSITY (FAUNA AND FLORA)																			
Loss of flora species of conservation importance (including habitat suitable for these species)	All Unauthorised Infrastructure as listed above	**All construction activities**	10	4	2	4	64	-	H	Minimise the area to be cleared. Identify important species in the footprint areas	10	4	2	3	48	-	M	1.Conduct detailed, multi-seasonal walk-through prior to construction activities 2. Compile list of protected and RD species, compile relocation programme 3. Establish off-site nursery	Prior to vegetation clearing	Project Manager Ecologist Environmental Officer
Loss of fauna species of conservation importance (including habitat suitable for these species)		**All construction activities**	10	4	2	4	64	-	H	Minimise the area to be cleared. Identify important species in the footprint areas	10	4	2	3	48	-	M	1. Conduct detailed, multi-seasonal walk-through prior to construction activities 2. Compile list of protected and RD species 3. Compile relocation programme where necessary/practical	Prior to vegetation clearing	Engineer in consultation with Environmental Officer

Loss of unique or protected habitat types (including loss and degradation)		**All construction activities**	8	4	2	5	70	-	H	Implement a biodiversity offset area	6	5	2	4	52	-	M	1. Identify suitable offset area/s, taking cognisance of existing and formal (declared) conservation programmes in the immediate region. 2. Implement Biodiversity Offset Principles	Prior to vegetation clearing	Engineer in consultation with Environmental Officer
Displacement of fauna species, human-animal conflicts & interactions (including diversity & abundance)		**All construction activities**	4	4	2	5	50	-	M	Operational plans that allow for animal protection. Staff training and awareness.	4	4	2	4	40	-	M	2. Identify operational protocol that will allow for protection of animals during construction & operational phases 3. Awareness programmes 4. Catch and release protocol	Construction	Engineer in consultation with Environmental Officer
Loss of ecological connectivity and ecosystem functioning;		**All construction activities**	8	4	2	5	70	-	H	Very difficult to mitigate. Contain activities to the construction footprint only. Implement a biodiversity offset area.	6	4	2	4	48	-	M	1. Identify suitable offset area/s, taking cognisance of existing and formal (declared) conservation programmes in the immediate region. 2. Implement Biodiversity Offset Principles	Construction	Engineer in consultation with Environmental Officer
SURFACE WATER																			
Siltation of surface water resources & associated soil erosion	All Unauthorised Infrastructure as listed above	**Footprint Clearance & Construction -** exposed soil	10	4	3	5	85	-	H	Ensure that clean and dirty water separation infrastructure is in place prior to the commencement of construction.	4	4	1	2	18	-	L	1. Installation of water management structures as a priority. 2. Compaction of the footprint area. 3. Sloping to allow free runoff to water control structures. 4. Management of runoff velocity to prevent erosion gullies. 5. Inspection and maintenance of water management infrastructure	Construction	Project Manager Contractor Environmental Officer
Reduced runoff to surface water resources & potential contamination due to incorrect dam sizing		**Construction -** diverted runoff	10	4	2	5	80	-	H	Appropriate design criteria for the 1:50 year storm event to be contained and re-used.	6	1	1	3	24	-	L	1. Maintenance of the on-site dams to contain water for re-use 2. Internal management of the site water balance	Design Construction	Engineer
Surface water contamination		**Waste Handling** - litter and building rubble	2	2	2	5	30	-	M	Builder's contracts should stipulate the appropriate storage and removal of builders' waste.	2	2	1	2	10	-	L	1. Solid waste must be stored at site on an approved waste disposal area, and removed regularly by credible contractors 2.A berm should be constructed upslope of the construction footprint area, to direct clean water away from the dirty water area 3. Water from the development footprint must be captured and contained 4. Any spillages from the wastewater containment system must be managed immediately in accordance with the Emergency Response Plan 5. Chemicals and fuels to be stored in bunded areas. 6. Vehicles to be correctly maintained to	Construction	Engineer

																	prevent oil leakage		
		Waste Handling - fuel and oil spills	6	3	3	3	36	-	M	Prevent seepage of wastewater and spillage of fuel and oils.	4	3	2	2	18	-	L	Construction	Engineer
		Waste Handling - Seepage to surface water resources from waste disposal areas.	10	4	2	5	80	-	H	Design criteria should prevent seepage (Refer the New TSF Hydrogeological study). Any seepage must be contained.	6	4	1	2	22	-	L	Construction	Engineer
RIPARIAN ZONES AND WETLANDS DOWNSTREAM OF THE SITE																			
Increased sediment transport into down slope water resources	All Unauthorised Infrastructure as listed above	**Footprint Clearance and Construction** - dirty water runoff	6	2	2	5	50	-	M	Reduce sediment load of surface runoff	4	2	1	5	35	-	M	1. Hydro seeding with a mix of species should be done with regular monitoring to ensure 70% cover in revegetated areas within 3 months. 2.Where practically possible, the major earthworks should be undertaken during the dry season (roughly from June to September) to limit erosion due to rainfall runoff.	Pre-construction Construction	Engineer
Erosion within watercourses	All Unauthorised Infrastructure as listed above	**Construction** - Infrastructure	6	2	1	4	36	-	M	Prevent high velocity surface flow while surfaces are exposed during construction	4	2	1	4	28	-	L	1.Structures leading to flow concentration such as roads and ruts should be modified to ensure no concentrated, high velocity surface flows occur on site or are discharged into watercourses. 2.All storm water and clean water diversion discharge points should be protected against erosion and incorporate energy dissipators to prevent high velocity flows entering water resources. 3.Bidim walls should be installed at all discharge points to trap sediments. These bidim walls will need to be regularly inspected and repaired if required. With the establishment	Construction	Engineer Environmental Officer

GROUNDWATER																			
Impact on groundwater quality	All Unauthorised Infrastructure as listed above	**Footprint Clearance -** exposure of soil	2	2	1	4	20	-	L	Prevent seepage of dirty water to the aquifer	2	2	1	2	10	-	L	1, Divert clean water away from dirty water systems 2. Construct storm water management structures prior to footprint clearance.	Prior to footprint clearance Construction	Engineer
	All Unauthorised Infrastructure as listed above	**All activities -** containment of dirty water	2	2	1	4	20	-	L	Prevent seepage of dirty water to the aquifer	2	2	1	2	10	-	L	1. Line all dirty water dams with HDPE liner	Construction	Engineer
AIR QUALITY																			
Dust creation	All Unauthorised Infrastructure as listed above	**Footprint Clearance and Construction** - soil exposure	2	2	1	3	15	-	L	Reduce dispersion of dust to the atmosphere	2	2	1	2	10	-	L	1. Ensure the clearance footprint adheres to the design (minimum area) 2. Implement a programme of dust suppression if required 3. Implement dust monitoring	Construction phase	Engineer
VISUAL																			
Negative impact on aesthetics	All Unauthorised Infrastructure as listed above	**Footprint clearance -** removal of vegetation	5	4	1	4	40	-	M	Limit clearance to the footprint only	4	5	2	4	44	-	M	1. Clearly demarcate construction footprint.	Prior to footprint clearance	Engineer
	All Unauthorised Infrastructure as listed above	**Waste Handling -** improper storage of waste	6	2	1	4	36	-	M	Separate, store and remove waste regularly	4	2	1	3	21	-	L	1.Solid waste must be stored temporarily on site in waste skips 2. Waste must removed regularly by an credible contractor.	Construction	Engineer
Dust creation	All Unauthorised Infrastructure as listed above	**Footprint clearance -** removal of vegetation	4	4	1	3	27	-	L	Control dust creation to reduce visual and visibility impacts	2	4	1	2	14	-	L	1. Limit construction footprint. 2. Retain visual screening as far as possible	Construction	Engineer
ARCHAEOLOGY AND HERITAGE																			
Possible impacts to heritage resources	All Unauthorised Infrastructure as listed above	**Footprint Clearance & Construction**	0	5	1	1	6	-	L	An archaeologist must be consulted should any artefacts be uncovered.	0	5	1	1	6	-	L	1. It is not expected that any items of heritage significance will be destroyed, however, should artefacts be uncovered during excavation, activity must cease until an archaeologist has been consulted.	Prior to footprint clearance	Engineer

SOCIO-ECONOMICS																			
Waged Labour	All Unauthorised Infrastructure as listed above	**Construction**	6	3	3	2	24	+	L	Sourcing local labour and offering skills development	6	3	3	4	48	+	M	1. Local labour should be employed as far as possible. 2. Establish an employment information desk (part of the community forum meetings)	Prior to footprint clearance	Engineer and Corporate and Social Affairs
Impact on the social dynamics of surrounding communities	All Unauthorised Infrastructure as listed above	**Construction**	6	3	3	3	36	+	M	Employ local labour, but avoid the construction of labour camps	6	3	3	3	36	+	M	1. Attempt to employ labour locally. 2. House temporary workers at the closest town rather than in a labour camp.	Prior to footprint clearance	Engineer and Corporate and Social Affairs
NOISE																			
Increase in noise levels in the vicinity of the Mine	All Unauthorised Infrastructure as listed above	**Footprint Clearance & Construction**	4	2	2	3	24	-	L	Limit construction activities to the day time; ensure that all equipment is regularly serviced	2	2	2	2	12	-	L	1. Limit construction to day time only. 2. Ensure vehicle maintenance to minimise engine noise	Clearance Construction	Engineer

7.2.2 Operational Phase

Table 7.2 below indicates the operational phase EIA/EMP for the Section 24G activities

Table 7.2 Operational Phase EIA/EMP

POTENTIAL ENVIRONMENTAL IMPACT	APPLICABLE TRP MINE AREA	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							ACTION PLAN	FREQUENCY	PERSON
			M	D	S	P	TOTAL	STATUS	SP		M	D	S	P	TOTAL	STATUS	SP			
OPERATIONAL PHASE ACTIVITIES: UNDERGROUND MINING, PRODUCT & WASTE STOCKPILING, WATER MANAGEMENT, WASTE HANDLING (DOMESTIC, HAZARDOUS & SEWAGE), HYDROCARBON STORAGE, TAILINGS DEPOSITION																				
TRP MINING AREA: NEW (UNAUTHORISED) INFRASTRUCTURE WITHIN THE EXISTING MINE AS FOLLOWS: Additional pollution control dams, TSF expansion, Sewage Treatment Plants, Haul Road Upgrade, Emergency lay-down area.																				
GEOLOGY																				
Alteration of Geology	All Unauthorised Infrastructure as listed above		0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
TOPOGRAPHY																				
Alteration of topography	TSF Expansion	**Tailings Deposition** - increasing size of TSF	8	5	1	5	70	-	H	Limit the steepness of slopes as far as possible and revegetate as soon as possible.	6	5	1	5	60	-	M	1. Maintain slopes less than 1:5 as far as possible. 2. Implement concurrent rehabilitation where possible	Operational Phase	Engineer
SOILS, LAND USE AND LAND CAPABILITY																				
Soil compaction	All Unauthorised Infrastructure as listed above	**Product & Waste Stockpiling**	6	3	1	4	40	-	M	Minimise stockpile footprint areas	4	3	1	4	32	-	M	1. Adhere to mine design plans 2. Drive only on constructed roads	Operational Phase	Engineer
Soil Contamination	All Unauthorised Infrastructure as listed above	**Water Management & Waste Handling -** waste and dirty water management	10	4	2	4	64	-	H	Ensure vehicles are in good condition, dirty water is contained	4	3	1	4	32	-	M	1. Adhere to TRP's recommended vehicle maintenance schedule and environmental policies 2. Provide spill kits and follow spill procedures on site for collection of contaminated soil 4. Ensure correct functioning of storm water management and PCD's 5. Ensure correct bunding of hydrocarbon and chemical storage areas	Operational Phase	Engineer

TERRESTRIAL BIODIVERSITY (FAUNA AND FLORA)																			
Indirect impacts on surrounding habitats	All Unauthorised Infrastructure as listed above	**All operation activities**	6	4	2	3	36	-	M	Prevent the spread of impacts to adjacent habitat	6	4	2	2	24	-	L	1. Contain activities to the mine site only	Closure Phase	Engineer
Human-animal conflicts & interactions		**All operation activities**	6	4	1	3	33	-	M	Operational plans that allow for animal protection. Staff training and awareness.	6	4	1	2	22	-	L	1. Awareness programmes (environmental induction for new contractors) 2. Catch and release protocol	Closure Phase	Engineer in consultation with Environmental Officer
SURFACE WATER																			
Deterioration of surface water quality	All Unauthorised Infrastructure as listed above	**Stockpiling, Water management -** contaminated runoff	4	4	2	3	30	-	M	Consider runoff from stockpiles and infrastructure as dirty water. Maintain all water control infrastructure.	4	2	2	2	16	-	L	1. Ensure ongoing maintenance of water dams. 2. Ensure maintenance and unblocking of storm water structures. 3. Contain and remediate hazardous spills immediately 4. Implement and maintain the water monitoring programme 5. Investigate poor water quality results and implement appropriate mitigation where possible 6. Implement correct maintenance of the sewage treatment plants as per manufacturer's instructions 7. Implement sewage outflow monitoring as per the water use and waste licences 9. Maintain bunded areas for hydrocarbon and chemical storage	Operational Phase	Engineer
	All Unauthorised Infrastructure as listed above	**Waste Handling -** sewage overflow, waste spills , **Hydrocarbon storage**	6	4	2	4	48	-	M	Design pollution control structures to contain the 1:50 year flood event	4	4	2	3	30	-	M		Design Operational Phase	Engineer
	All Unauthorised Infrastructure as listed above	**Tailings Deposition -** spills and leaks	8	4	2	4	56	-	M	Conduct regular inspection and maintenance on the tailings pipeline	6	4	2	4	48	-	M		Operational Phase	Engineer
Siltation of water resources	All Unauthorised Infrastructure as listed above	**All operation activities** - exposure of soil surfaces and ineffective rehabilitation	8	4	3	4	60	-	M	Maintain storm water infrastructure, ensure effective rehabilitation	4	4	3	2	22	-	L	1. Maintain berms and cut-off trenches 2. Collection of eroded topsoil for use in rehabilitation 3. Monitor post-construction rehabilitation and implement further rehabilitative measures where it has not been effective	Operational Phase	Engineer in consultation with Environmental Officer

RIPARIAN ZONES on and off site, AND WETANDS DOWNSTREAM OF THE SITE																				
Erosion within watercourses	All Unauthorised Infrastructure as listed above	**All operation activities**	6	4	2	4	48	-	M	Ensure maintenance of storm water structures	4	4	1	3	27	-	L	1. Maintain the clean and dirty water separation structures 2. Ensure drains and storm water structures are maintained and free from obstruction	Operational Phase	Engineer
Water quality deterioration	All Unauthorised Infrastructure as listed above	**All operation activities**	6	4	2	5	60	-	M	Ensure correct waste handling	4	4	2	3	30	-	M	1. Refer to the action plan for surface water quality above 2.	Operational Phase	Engineer
GROUNDWATER																				
Impact on groundwater quality	All Unauthorised Infrastructure as listed above	**Water Management** - Seepage from containment dams	6	3	2	4	44	-	M	Prevent and contain seepage	4	3	2	4	36	-	M	1.Maintain the clean and dirty water separation systems, including containment dams and storm water structures	Operational Phase	Engineer
	TSF Expansion	**Water Management** - Seepage from the TSF	8	3	2	4	52	-	M	Prevent and contain seepage	2	3	1	2	12	-	L	1.The TSF should be operated with a minimum pool size to limit the infiltration volumes. 2. Review and update of conceptual and numerical model 3. Continue with the groundwater monitoring programme	Operational Phase	Engineer
AIR QUALITY																				
Dust creation	All Unauthorised Infrastructure as listed above	**Ore processing** - plant, crusher and vehicle movement on roads	6	2	2	4	40	-	M	Minimise exposed surfaces and dust generation	4	2	2	2	16	-	L	1. Ensure the mine footprint adheres to the design (minimum area) 2. Rehabilitate cleared areas immediately 3. Implement dust monitoring to determine where dust suppression is required 4.Prioritise dust suppression according to dust monitoring results	Operational Phase	Engineer
Dust creation	TSF Expansion	**Tailings Deposition** - drying of tailings	4	4	2	3	30	-	M	Reduce exposed surface area	2	4	2	2	16	-	L	1. Concurrent rehabilitation of the New TSF side slopes	Operational Phase	Engineer

VISUAL																				
Light pollution	All Unauthorised Infrastructure as listed above	**All operational activities**	7	4	3	3	42	-	M	Reduce lighting to the minimum required	6	4	2	3	36	-	M	1. Do not install more lighting than is required for safe work in dark conditions.	Operational Phase	Engineer
Dust Pollution from TSF	TSF Expansion	**Tailings deposition** - expansion of the TSF	6	4	2	3	36	-	M	Reduce exposed surface areas	4	4	1	2	18	-	L	1.Refer to action plan under Air Quality	Operational Phase	Engineer
Change in topography	TSF Expansion	**Tailings deposition** - expansion of the TSF	7	4	3	4	56	-	M	Limit visual intrusion as far as possible	6	4	3	3	39	-	M	1.Concurrent revegetation of Tailings Facility to limit visual intrusion. 2.Limit dust creation as much as possible	Operational Phase	Engineer
ARCHAEOLOGY AND HERITAGE																				
No additional impacts after construction	All Unauthorised Infrastructure as listed above	**All operational activities**	0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
SOCIO-ECONOMICS																				
Actual health and fertility	All Unauthorised Infrastructure as listed above	**All operational activities**	6	4	2	4	48	+	M	A health and safety management programme, and AIDS awareness.	4	4	2	3	30	+	M	1. Implement an AIDS awareness programme	Operational Phase	Engineer and Corporate and Social Affairs
Feelings in relation to the project and aspirations for the future	All Unauthorised Infrastructure as listed above	**All operational activities**	6	3	2	2	22	+	L	Effective community liaison	6	2	2	2	20	+	L	1. Continuous consultation with the affected communities should take place to maintain an open and trusting relationship	Operational Phase	Engineer and Corporate and Social Affairs
Physical quality of the living environment (actual and perceived	All Unauthorised Infrastructure as listed above	**All operational activities**	8	4	1	4	52	+	M	Minimise potential impacts as far as possible	6	4	1	3	33	+	M	1. Implement the operational phase environmental action plans. 2. Maintain community communication channels	Operational Phase	Engineer and Corporate and Social Affairs
Aesthetic quality of the living environment	All Unauthorised Infrastructure as listed above	**All operational activities**	6	4	2	4	48	+	M	Minimise visual impacts	4	4	2	4	40	+	M	1. Implement the operational phase visual impact action plan.	Operational Phase	Engineer and Corporate and Social Affairs

Crime and violence	All Unauthorised Infrastructure as listed above	**All operational activities**	4	3	2	2	18	+	L	Effective community liaison	4	2	1	2	14	+	L	1.Local, unemployed labour should be employed as far as possible	Operational Phase	Engineer and Corporate and Social Affairs
NOISE																				
Creation of noise	All Unauthorised Infrastructure as listed above	**Ore processing** - plant	4	4	1	3	27	-	L	Reduce noise levels as far as possible.	2	4	2	2	16	-	L	1. Ensure adherence to noise limits as per the health and safety requirements	Operational Phase	Health and Safety Officer

7.2.3 Decommissioning and Closure Phase

Refer to Table 7.3 below which indicates the decommissioning and closure phase EIA/EMP.

Table 7.3 Decommissioning and Closure Phase EIA/EMP

POTENTIAL ENVIRONMENTAL IMPACT	APPLICABLE TRP MINE AREA	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							ACTION PLAN	FREQUENCY	PERSON
			M	D	S	P	TOTAL	STATUS	SP		M	D	S	P	TOTAL	STATUS	SP			
DECOMISSIONING and CLOSURE ACTIVITIES: REMOVAL OF INFRASTRUCTURE AND RUBBLE, REHABILITATION OF DISTURBED AREAS																				
TRP MINING AREA: NEW (UNAUTHORISED) INFRASTRUCTURE WITHIN THE EXISTING MINE AS FOLLOWS: Additional pollution control dams, TSF expansion, Sewage Treatment Plants, Haul Road Upgrade, Emergency lay-down area																				
GEOLOGY																				
No additional impacts after operation	All Unauthorised Infrastructure as listed above	**N/A**	0	0	0	0	0	N	N	Mitigation not possible, geology is permanently altered	0	0	0	0	0	N	N	N/A	N/A	N/A
TOPOGRAPHY																				
Altered topography	All Unauthorised Infrastructure as listed above	**Removal of infrastructure & rubble, rehabilitation**	6	5	1	3	36	+	M	None, the impact will be positive	6	5	1	3	36	+	M	1. Reshape and rehabilitate to free-draining, taking into cognisance the topography of the surrounding area.	Decommissioning	Engineer
	TSF Expansion	**Rehabilitation -** final height	6	5	2	5	65	-	H	Rehabilitate the final dam to appear as natural as possible	4	5	2	5	55	-	M	1. Shape the slopes if required for stability and/or aesthetics. 2. Re-vegetate using species common to the area	Closure Phase	Engineer
SOILS, LAND USE AND LAND CAPABILITY																				
Soil compaction	All Unauthorised Infrastructure as listed above	**Removal of infrastructure & rubble, rehabilitation** - vehicle movement	6	3	1	4	40	-	M	Minimise vehicle movement in undisturbed areas.	4	3	1	4	32	-	M	1. Adhere to mine design plans 2. Drive only on constructed roads 3. Use tracked rather than wheeled vehicles where possible	Decommissioning	Engineer

Soil Contamination by fuel and dirty water	All Unauthorised Infrastructure as listed above	**Removal of infrastructure & rubble, rehabilitation** - vehicle movement	10	4	2	4	64	-	H	Ensure vehicles are in good condition, dirty water is contained	4	3	1	4	32	-	M	1. Adhere to TRP's vehicle maintenance schedule 2. Provide spill kits on site for collection of contaminated soil 3. Ensure correct functioning of storm water management and PCD's 4. Ensure correct bunding of hydrocarbon and chemical storage areas	Decommissioning	Engineer
Soil physical and chemical properties	All Unauthorised Infrastructure as listed above	**Rehabilitation -** improvement of soil conditions	8	5	1	4	56	+	M	None, the impact will be positive	8	5	1	4	56	+	M	1. Topsoil stockpiles will be sampled and tested for fertiliser requirements. 2. Organic and chemical ameliorants will be added to the soil to improve conditions for plant growth, as per the fertilizer recommendations. 3. Areas of soil compaction will be ripped.	Closure Phase	Engineer
TERRESTRIAL BIODIVERSITY (FAUNA AND FLORA)																			
Indirect impacts to surrounding plant and animal communities (fragmentation)	All Unauthorised Infrastructure as listed above	**Removal of infrastructure & Rehabilitation**	8	5	2	3	45	-	M	Limit activities to the infrastructure footprint.	6	5	2	2	26	-	L	1. Conduct environmental induction for workers. 2. Limit vehicle movement to roads and infrastructure areas only	Decommissioning	Engineer
SURFACE WATER																			
Pollution of water resources	All Unauthorised Infrastructure as listed above	**Removal of infrastructure -** improper waste handling and fuel/oil spills	4	5	2	3	33	-	M	Manage waste effectively to prevent pollution of water resources	4	5	2	1	11	-	L	1. Waste that is not removed from site should be spread, covered and suitably rehabilitated 2. Comply to the TRP vehicle maintenance schedule to prevent oil/fuel leaks 3. Provide spill kits on site to remediate oil spills	Decommissioning	Engineer
Runoff and drainage from stockpiles and TSFs continue to yield polluted water	All Unauthorised Infrastructure as listed above	**Removal of infrastructure, Rehabilitation**	6	5	3	4	56	-	M	Maintain dirty water separation systems until the site is rehabilitated and free draining	6	5	1	2	24	-	L	1. Stockpiles must be spread and surfaces rehabilitated 2. The surfaces of TSFs must be rehabilitated 3.Drains and return water dams must be maintained and water transferred to a pollution control dam until the site is free-draining	Decommissioning Closure	Engineer

Siltation of water courses	All Unauthorised Infrastructure as listed above	**Removal of infrastructure** - including water and TSF pipelines	6	2	2	4	40	-	M	Rehabilitate as soon as possible, maintain erosion control for the duration of rehabilitation	4	2	2	3	24	-	L	1. Rehabilitate as soon after infrastructure removal as possible.	Decommissioning Closure	Engineer
RIPARIAN ZONES on and off site, AND WETLANDS DOWNSTREAM OF THE SITE																				
Increased sediment transport into down slope water resources	All Unauthorised Infrastructure as listed above	**All Activities**	6	2	2	5	50	-	M	Ensure effective rehabilitation, and monitoring of rehabilitation until established	4	2	2	4	32	-	M	1.All disturbed areas should be landscaped to approximate the natural landscape profile 2. Where steep slopes are unavoidable, geotextiles should be used to stabilise slopes before & during re-vegetation. 3.Compacted soils should be ripped and scarified. 4. The rehabilitated areas should be re-vegetated as soon as possible following completion of the earthworks to minimise erosion. 5.Regular long-term follow up of rehabilitated areas will be required to ensure the successful establishment of vegetation and to survey for any erosion damage on site. 6. Erosion damage should be repaired immediately.	Closure	Engineer
Altered runoff characteristics of the landscape	All Unauthorised Infrastructure as listed above	**Removal of infrastructure, Rehabilitation**	4	5	2	5	55	-	M	Manage runoff and exposed surfaces to minimise runoff	2	5	2	5	45	-	M	1. Implement measures to avoid concentration of flows and high velocity flows. 2. Ensure revegetation of all disturbed areas.	Decommissioning Closure	Engineer
Erosion within watercourses	All Unauthorised Infrastructure as listed above	**Removal of infrastructure, Rehabilitation**	6	5	2	4	52	-	M	Monitor rehabilitated areas for erosion.	4	5	1	3	30	-	M	1. Implement an erosion monitoring plan during closure 2. All rehabilitated areas should be monitored twice annually (start and middle of wet season), with any observed erosion damage repaired immediately.	Decommissioning Closure	Engineer
Water quality deterioration	All Unauthorised Infrastructure as listed above	**Removal of infrastructure, Rehabilitation**	8	5	3	4	64	-	H	Prevent contamination of streams and rivers	4	5	2	3	33	-	M	1. As per the surface water action plans	Decommissioning Closure	Engineer
Increase in alien vegetation	All Unauthorised Infrastructure as listed above	**Removal of infrastructure**	6	5	1	4	48	-	M	Prevent proliferation and remove alien species	2	2	1	3	15	-	L	1. As per the terrestrial biodiversity action plan	Closure	Engineer

GROUNDWATER																				
Impact on groundwater quality	All Unauthorised Infrastructure as listed above	**Removal of infrastructure, Rehabilitation** - Containment of dirty water and seepage	6	3	2	4	44	-	M	Maintain water control structures until rehabilitation is effective and the site is free-draining	2	3	1	2	12	-	L	1. Maintain storm water structures to keep clean water away from the Return Water Dam to minimise water volumes and risk of spilling from the site (until effective rehabilitation)	Decommissioning Closure	Engineer
AIR QUALITY																				
Creation of dust	All Unauthorised Infrastructure as listed above	**Removal of infrastructure, Rehabilitation** - exposed areas	4	2	2	4	32	-	M	Control the creation of dust as far as possible	2	2	2	3	18	-	L	1. Implement dust suppression spraying where necessary 2. Rehabilitation must take place as soon after infrastructure removal as possible	Closure	Engineer
	TSF Expansion	**Rehabilitation** - Ineffective rehabilitation of TSF slopes	4	4	2	4	40	-	M	Ensure effective rehabilitation of the TSF's	2	2	2	2	12	-	L	1.Monitor final rehabilitation of the TSF's for 5 years post closure, or according to legislative requirements at the time.	Closure	Engineer
VISUAL																				
Visual Impact of Tailings Storage Facilities	TSF Expansion	**Removal of Infrastructure** - Decommissioning of TSF and RW dam	6	4	3	3	39	-	M	Ensure effective rehabilitation of the TSF's	5	5	3	3	39	-	M	1. Revegetate the TSF	Closure	Engineer
Improvement to aesthetics	All Unauthorised Infrastructure as listed above	**Removal of Infrastructure**	6	2	2	3	30	-	M	Implement revegetation as soon as possible after infrastructure removal	4	2	2	3	24	-	L	1. Rehabilitation must take place as soon after infrastructure removal as possible	Closure	Engineer
ARCHAEOLOGY AND HERITAGE																				
No additional impacts	All Unauthorised Infrastructure as listed above		0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
SOCIO-ECONOMICS																				
Physical quality of the living environment (actual and perceived)	All Unauthorised Infrastructure as listed above	**All Activities**	8	4	1	4	52	-	M	Minimise potential impacts as far as possible	6	4	1	3	33	-	M	1. Implement the operational phase environmental action plans. 2. Maintain community communication channels	Operational Phase	Engineer and Corporate and Social Affairs

Personal safety and hazard exposure	All Unauthorised Infrastructure as listed above	**All Activities**	4	4	1	4	36	-	M	Maintain essential mine facilities to ensure health and safety of personnel on site during closure and rehabilitation	4	3	1	3	24	-	L	1. Ensure the entire site remains fence for the duration of rehabilitation 2. Retain security access control to the site 3. Health and safety measures must be maintained	Decommissioning Closure	Engineer and Corporate and Social Affairs
NOISE																				
Creation of noise	All Unauthorised Infrastructure as listed above	**Removal of Infrastructure**	4	2	2	3	24	-	L	Reduce noise levels as much as possible	2	2	2	2	12	-	L	1. Limit construction activities to the day time 2. Ensure that all equipment is regularly serviced	Decommissioning Closure	Engineer

7.2.4 Post-Closure EIA/EMP

Refer to Table 7.4 below indicating the Post-Closure EIA/EMP

Table 7.4 Post-Closure EIA/EMP

POTENTIAL ENVIRONMENTAL IMPACT	APPLICABLE TRP MINE AREA	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							ACTION PLAN	FREQUENCY	PERSON
			M	D	S	P	TOTAL	STATUS	SP		M	D	S	P	TOTAL	STATUS	SP			
POST-CLOSURE ACTIVITIES: MONITORING AND MAINTENANCE																				
TRP MINING AREA: NEW (UNAUTHORISED) INFRASTRUCTURE WITHIN THE EXISTING MINE AS FOLLOWS: Additional pollution control dams, TSF expansion, Sewage Treatment Plants, Concentrator Plant Upgrade, Haul Road Upgrade, Emergency lay-down area, Permanent Reef Stockpile																				
GEOLOGY																				
No additional impacts	All Unauthorised Infrastructure as listed above		0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
TOPOGRAPHY																				
No additional impacts	All Unauthorised Infrastructure as listed above		0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
SOILS, LAND USE AND LAND CAPABILITY																				
Soil physical and chemical properties - improvement in conditions	All Unauthorised Infrastructure as listed above	**Monitoring & Maintenance -** improvement of soil conditions	8	5	1	4	56	+	M	None, the impact will be positive	8	5	1	4	56	+	M	1. Conduct soil testing and amelioration (fertilization) should vegetation establishment not be successful post rehabilitation.	Post-closure	Environmental Personnel
TERRESTRIAL BIODIVERSITY (FAUNA AND FLORA)																				
Increase in alien vegetation	All Unauthorised Infrastructure as listed above	**Monitoring & Maintenance -** growth of new vegetation on rehabilitated areas	6	5	1	4	48	-	M	Remove and control the spread of alien invasive species	2	2	1	3	15	-	L	1. Alien invasive species should be removed from the site as far as practically possible. 2. Monitor surrounding properties and riparian zones for the spread of alien vegetation and remove where practically possible	Post-closure	Environmental Personnel

Improvement in vegetation	All Unauthorised Infrastructure as listed above	**Monitoring & Maintenance -** growth of new vegetation on rehabilitated areas	6	5	3	4	56	+	M	Prevent proliferation of invasive species, promote restoration of indigenous vegetation	6	5	3	4	56	+	M	1. Conduct soil testing and amelioration (fertilization) should vegetation establishment not be successful post rehabilitation.	Post-closure	Environmental Personnel
SURFACE WATER																				
Reduction in pollution of water resources	All Unauthorised Infrastructure as listed above	**Monitoring & Maintenance -** site will revert back to free-draining state	4	5	2	1	11	-	L	Continue water monitoring to determine possible impacts	6	5	2	4	52	+	M	1. Continue with the TRP water monitoring programme for 5 years or as per legislative requirements at the time	Post-closure	Environmental Personnel
RIPARIAN ZONES on and off site, AND WETLANDS DOWNSTREAM OF THE SITE																				
Improvement to riparian zones	All Unauthorised Infrastructure as listed above	**Monitoring and Maintenance** - return to free-draining state	4	5	2	2	22	-	L	Return to natural vegetation, removal of alien species.	6	5	2	2	26	+	L	1. Continue with the TRP water monitoring programme for 5 years or as per legislative requirements at the time	Post-closure	Environmental Personnel
GROUNDWATER																				
Groundwater Contamination	TSF Expansion	**Monitoring and Maintenance** - Contaminant plume will continue to migrate	6	3	2	4	44	-	M	Ensure effective rehabilitation and ongoing groundwater monitoring	4	3	2	3	27	-	L	1. Continue with the TRP water monitoring programme for 5 years or as per legislative requirements at the time	Post-closure	Environmental Personnel
AIR QUALITY																				
Improvement in air quality	All Unauthorised Infrastructure as listed above	**Monitoring and Maintenance** - All mining activities related to dust creation will have ceased	4	4	2	4	40	-	M	None required	6	5	2	2	26	+	L	None required	Post-closure	Environmental Personnel
VISUAL																				
Improvement of landscape appearance	All Unauthorised Infrastructure as listed above	**Rehabilitation** - disturbed areas	4	5	2	2	22	+	L	Ensure effective re-vegetation	4	5	2	3	33	+	M	1. Monitor rehabilitated areas to ensure that rehabilitation has been effective 2. Implement further rehabilitation measures where rehabilitation has not been effective	Post-closure	Environmental Personnel

ARCHAEOLOGY AND HERITAGE																				
No additional impacts	All Unauthorised Infrastructure as listed above	N/A	0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
SOCIO-ECONOMICS																				
Loss of Waged Labour	All Unauthorised Infrastructure as listed above	**All Activities**	10	5	2	5	85	-	H	Mine closure will mean loss of employment	8	4	2	4	56	-	M	1. Possible re-deployment to similar mining operations or a new mine.	Post-closure	TRP Management
NOISE																				
Creation of noise	All Unauthorised Infrastructure as listed above	**Monitoring & Maintenance**	4	2	2	3	24	-	L	None, mining activities will have ceased, reducing noise levels	2	2	2	1	6	+	L	1. Ensure vehicle maintenance to avoid excess noise during monitoring exercises.	Post-closure	Environmental Personnel

7.2.5 Cumulative Impacts

Refer to Table 7.5 below indicating the Cumulative Impacts EIA/EMP

Table 7.5 Cumulative Impacts EIA/EMP

POTENTIAL ENVIRONMENTAL IMPACT	APPLICABLE TRP MINE AREA	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							ACTION PLAN	FREQUENCY	RESPONSIBLE PERSON
			M	D	S	P	TOTAL	STATUS	SP		M	D	S	P	TOTAL	STATUS	SP			
CUMULATIVE IMPACTS: IMPACTS CONSIDERED ON A REGIONAL SCALE																				
TRP MINING AREA: NEW (UNAUTHORISED) INFRASTRUCTURE WITHIN THE EXISTING MINE AS FOLLOWS: Additional pollution control dams, TSF expansion, Sewage Treatment Plants, Haul Road Upgrade, Emergency lay-down area																				
GEOLOGY																				
No additional impacts	All Unauthorised Infrastructure as listed above		0	0	0	0	0	N	N	N/A	0	0	0	0	0	N	N	N/A	N/A	N/A
TOPOGRAPHY																				
Change to topography	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** construction and operation	2	4	1	3	21	-	L	Mine design should utilise existing facilities as far as possible, to reduce further impact	2	4	1	2	14	-	L	1. Construct new infrastructure close to existing where practical. 2. Adhere to approved designs.	Prior to and during construction	Engineer
SOILS, LAND USE AND LAND CAPABILITY																				
Soil erosion, compaction and contamination	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** disturbance of additional areas	2	4	1	4	28	-	L	Minimise construction footprints and adhere to the action plan above to minimise additional impacts	2	4	1	4	28	-	L	1.Implement soils action plan for all phases	All Phases	Engineer, in consultation with Environmental Officer
Loss of land capability	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** disturbance of additional areas	4	5	2	3	33	-	M	Keep as much original land cover as possible	4	5	2	3	33	-	M	1. Implement soils action plan for all phases	All Phases	Engineer, in consultation with Environmental Officer
TERRESTRIAL BIODIVERSITY (FAUNA AND FLORA)																				
Loss of fauna and flora of conservation importance	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Vegetation removal	4	5	1	3	30	-	M	Ensure all species of importance are identified and relocated prior to clearing	2	5	1	3	24	-	L	1. Implement action plans for construction phase	Prior to vegetation clearing	Engineer, in consultation with Environmental Officer

Further fragmentation of vegetation communites and habitats	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining**	6	4	2	3	36	-	M	Very difficult to mitigate. Contain activities to the construction footprint only. Implement a biodiversity offset area.	4	4	2	2	20	-	L	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
Harm to animals and plants and introduction of invasive plant species	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Development of new infrastructure'	4	5	1	3	30	-	M	Prevent the proliferation of invasive plant species and harm to animals over the entire mine	2	5	1	3	24	-	L	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
SURFACE WATER																				
Surface water quantity and quality	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Development of new infrastructure'	4	4	2	3	30	-	M	Adhere to approved Water Use Licence and conditions	4	2	2	2	16	-	L	Implement action plans for all phases	During construction	Engineer, in consultation with Environmental Officer
	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Inefficient storm water management	6	4	2	3	36	-	M	Maintain separation of sclean and dirty water	4	4	2	2	20	-	L	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
RIPARIAN ZONES on and off site, AND WETLANDS DOWNSTREAM OF THE SITE																				
Increased sedimentation	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Inefficient storm water management	6	4	2	3	36	-	M	Maintain separation of sclean and dirty water	4	4	2	2	20	-	L	1. Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
GROUNDWATER																				
Groundwater Quantity and Quality	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	6	4	2	3	36	-	M	Implement action plans and monitoring at all phases to minimise impacts.	4	4	2	2	20	-	L	1. Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
AIR QUALITY																				
Dust Creation	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	6	2	2	4	40	-	M	Minimise dust generation and maintain dust supression over the entire site	4	2	2	2	16	-	L	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
NOISE																				
Additional Noise	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	2	4	2	3	24	-	L	Limit construction activities to the day time; ensure that all equipment is regularly serviced	2	4	2	2	16	-	L	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer

VISUAL																				
Addition to visual change to landscape	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	4	5	2	4	44	-	M	Design infrastructure to take cognisance of the environment where possible.	4	5	2	4	44	-	M	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
ARCHAEOLOGY AND HERITAGE																				
Loss of Heritage resources	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	4	5	2	2	22	-	L	Based on specialist studies, heritage resources are not at risk as part of the TRP expansion. Should any resources be uncovered at any stage, an Archaeologist is to be consulted.	4	5	2	2	22	-	L	1. Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
SOCIO-ECONOMICS																				
Aesthetic quality of the living environment	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	6	4	2	4	48	-	M	Implement the visual impact and dust/air quality action plans to minimise cumulative impacts.	4	4	2	4	40	-	M	1. Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
Loss of natural and cultural heritage	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	4	5	1	1	10	-	L	Based on specialist studies, heritage resources are not at risk as part of the TRP expansion. Should any resources be uncovered at any stage, an Archaeologist is to be consulted.	4	2	1	1	7	-	L	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer
Cumulative Impacts - waged labour and social dynamics of the area	All Unauthorised Infrastructure as listed above	**TRP as part of regional mining -** Expansion of operations	6	3	3	3	36	+	M	Employ local labour, but avoid the construction of labour camps	6	3	3	3	36	+	M	1.Implement action plans for all phases	All Phases	Engineer, in consultation with Environmental Officer

8 UNDERTAKING BY CLIENT

UNDERTAKING

I, _____ , the undersigned and duly authorised thereto by Two Rivers Platinum (Pty) Ltd, have studied and understand the contents of this Environmental Impact Assessment/Environmental Management Programme (EIA/EMP) and duly undertake to adhere to the conditions as set out therein, unless specifically or otherwise agreed to.

Signed at _____, on this _____, day of

_____ 2013.

_____

Signature of Applicant

I, _____, the undersigned and duly authorised thereto by the LIMPOPO DEPARTMEN OF ECONOMIC DEVELOPMENT, ENVIRONMENT AND TOURISM, have studied and approved the contents of this Environmental Impact Assessment/Environmental Management Programme (EIA/EMP).

Signed at _____, on this _____, day of

_____ 2013.

_____

Signature of Director

9 CONCLUSION

This chapter fulfils the report requirements set out in Regulation 31 of the NEMA Regulation.

Regulation 31(2)	*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 contemplated in regulation 35, and must include-*
	(n) A reasoned opinion as to whether the activity should or should not be authorised, and if it should be authorised by any conditions that authorisation;
	(o) An Environmental impact statement which contains: (i) A summary of the key finding of the Environmental Impact assessment; and (ii) A comparative assessment of the positive and negative implications of the proposed activity and identified alternatives.

Two Rivers Platinum Ltd (TRP) is an existing mining operation conducting mining activities on portion 6 and 7 of the farm Dwarsriver 372 KT, situated 27 km south of the town steelpoort, within the greater Tubatse Municipality, Limpopo Province. Construction commenced in June 2005 and the current mining rate is 90 000tpm. The reef stockpile reached 800 000 tonnes by March 2006 and the projected 1 300 000 tonnes required for processing was reached by August 2006. A concentrator was commissioned in July 2006 and commercial operations commenced by June 2007.

The initiation of numerous activities on site occurred without approval under the National Environmental Management Act, 1998(Act No. 107 of 1998) (NEMA). As a result, the identified activities require an environmental authorisation in terms of the NEMA regulations promulgated in 2006. A rectification process will thus be required for the listed activities which have already taken place.

GCS consulted with officials from Limpopo Department Economic Development, Environment and Tourism (LDEDET), who is the competent Authority for the TRP application (in terms of the NEMA). A site visit was also conducted with LDEDET who then advised that TRP conduct a legal Assessment to identify activities that commenced without approval and then apply for rectification in terms of NEMA.

Cameron Cross Attorneys conducted the legal Assessment for TRP, and during the site visit they noted, or were advised of, certain activities being undertaken on site. Where specific dates as to construction of, for example, dams on site could not be provided, and where

capacity requirements are relevant, they have not been able to make a conclusive determination in respect of the applicability of listed activities in terms of both the Environment Conservation Act 73 of 1989 (ECA) and the NEMA thereto. Consequently, same is subject to confirmation by TRP.

Environmental Process

TRP is currently in the process of expanding its mining operations. The expansion of the mining activities has resulted in the need for various environmental authorisations:

1. First authorisation process involves the authorisation of the new TSF and associated infrastructure (new TSF);
2. **Second authorisation process involves the Section 24G application for the expansion of the existing TSF (to be introduced at the Environmental Impact Assessment (EIA) phase);**
3. Third authorisation process involves the application for new sewage treatment plants; and
4. Fourth authorisation process involves the application for the UG2 and Merensky Expansion.

The EIA authorisation processes are being run in parallel as far as practically possible to streamline the process and reduce stakeholder fatigue in terms of the required stakeholder consultation associated with each authorisation process.

Public Participation Process

A comprehensive Public Participation Process (PPP) was initiated during the EIA Phase as the Scoping Phase was not required by LDEDET. Issues raised by the authorities and I&Aps during the public review have been incorporated in this Final EIA Report which will then be submitted to the LDEDET.

Specialist investigations

Activities applied for in this report are currently being undertaken within the approved mine premises, as part of existing infrastructure. Specialist studies were conducted prior to commencement of the TRP mining activities, this data was therefore used as a baseline reference.

Impact Assessment and Statement

All of the new activities form part of the existing mine, and are therefore being undertaken in areas that have already been disturbed. Environmental impacts were assessed as being medium to low with mitigation, the same as for the existing mine infrastructure.

It is recommended that the activities be authorised.

10 REFERENCES

Frazer Alexander Tailings, 2010. Two Rivers Tailings Dam, Proposed Design Modifications.

Two Rivers Platinum Mine (Pty) Ltd: 2006. Environmental Scoping Report for the Northern Decline Submitted in Terms of Section 39 of the MPRDA, 2002 (Act 28 of 2002).

Two Rivers Platinum Mine (Pty) Ltd: 2004. EIA/EMP Submitted in Terms of Section 39 of the MPRDA, 2002 (Act 28 of 2002).

APPENDIX A – WASTE LICENCE APP AND CORRESPONDENCE WITH DEA

APPENDIX B – LDEDET INSTRUCTIONS REGARDING THE SEC24G EIA/EMP

APPENDIX C – SITE NOTICE

APPENDIX D – NEWSPAPER ADVERT

APPENDIX E – BACKGROUND INFORMATION DOCUMENT

APPENDIX F – INITIAL STAKEHOLDER DATABASE

APPENDIX G – STAKEHOLDER MEETING MINUTES

APPENDIX H – BOKOMOSO LETTERS

APPENDIX I – FRAZER ALEXANDER DESIGN REPORT EXISTING TSF