ANGLOGOLD ASHANTI
AUSTRALIA

REGIS RESOURCES LTD

TROPICANA JOINT VENTURE
AngloGold Ashanti Australia Limited \ A.B.N. 42 008 737 424
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19 December 2022

Stuart Cowie
Executive Director – Compliance and Enforcement
Department of Water and Environmental Regulation
Locked Bag 10
Joondalup DC, WA 6919

Dear Stuart,

Tropicana Gold Project Ministerial Statement No. 839 – 2021/2022 Annual Compliance Assessment Report.

In accordance with Condition 4-6 of Ministerial Statement No. 839, please find enclosed the 2022 Annual Compliance Assessment Report for the Tropicana Gold Mine. The report has been prepared in accordance with the Tropicana Gold Mine Compliance Assessment Plan and covers the period 24 September 2021 – 23 September 2022.

If you have any enquiries, please contact Rosemarie Lane, Manager Environment Operations, at tgmapprovals@anglogoldashanti.com or on 9265 2215.

Yours sincerely,

Rosemarie Lane
Manager Environment Operations
AngloGold Ashanti Australia Limited

Enclosed: CAR20201222 "Tropicana Gold Mine Ministerial Statement No 839 Annual Compliance Assessment Report"

Tropicana Joint Venture

Tropicana Gold Mine (TGM)
Ministerial Statement No 839
Annual Compliance Assessment Report
24 September 2021 to 23 September 2022

19th December 2022

Document Reference: CAR20221219

Tropicana Gold Project, Annual Compliance Assessment Report

Ministerial Statement No. 839

This report has been developed by AngloGold Ashanti Australia on behalf of the Tropicana Joint Venture.

Revision	Author	Reviewer	Date
Draft - for internal review	Lauren McLean	Leonie Pradella	5/12/2022
Final – for review and release	Leonie Pradella	Rosemarie Lane	19/12/2022

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1 Introduction

The Tropicana Gold Mine (TGM) (the Project) is an open cut and underground gold mine located approximately 330 kilometres (km) east northeast of Kalgoorlie on the western edge of the Great Victoria Desert (GVD) (Figure 1). The Project is a joint venture (Tropicana JV) formed in 2002 between AngloGold Ashanti Australia Ltd (70% and manager) and Independence Group NL – IGO (30%). As of 31 May 2021, AFB Resources Pty Ltd (a wholly owned subsidiary of Regis Resources Limited) acquired the IGO 30% stake.

The Project was approved under the *Environmental Protection Act 1986* (EP Act) in September 2010 and issued with Ministerial Statement No. 839 (MS839). Condition M4-6 of MS839 requires the preparation and submission of an annual Compliance Assessment Report (CAR) for the preceding 12 months. This CAR has been prepared to meet Condition M4-6 and covers the period 24 September 2021 to 23 September 2022 (the reporting period). The TGM Ministerial Statement of Compliance and audit compliance table for the reporting period is provided in Appendix A.

This is the twelfth CAR prepared by AngloGold Ashanti Australia (AGAA) on behalf of the Tropicana JV for the Project and has been prepared in accordance with the approved Compliance Assessment Plan (CAP) dated 13 December 2010 prepared and submitted to the Office of the EPA in 2010.

The TGM is comprised of:

- *Operational area*

Open pits, underground operation, waste landforms, stockpiles, tailings storage facility, processing plant, mine village, aerodrome and other supporting infrastructure.

- *Infrastructure corridor*

Including an access road and communications corridor linking the operational area to existing communications and road networks of the Goldfields regions. This corridor is referred to as the Pinjin Corridor.

- *Process water supply area*

Containing the Process Water Supply Borefield (PWSB) and Kamikaze Borefield.

1.1 Approvals History

Subsequent to the issuance of MS839 in September 2010, the Tropicana JV has sought and gained approvals under section 45C of the EP Act to implement non-substantial changes to the original approved Project (Table 1).

Table 1: Non-substantial changes to MS839 Key Characteristics

Application	Date Approved	Element	Original Proposal	Approved Change to Proposal
Tailings Storage Facility Design – Two Cell vs. Single Cell. August 2012	19 November 2012	Tailings Storage Facility	Up to 7 mtpa; two-cell paddock tailings storage facility with possible in-pit TSF deposition. Maximum height of 372 mRL. Approximately 1330 m wide by 1850 m.	Up to 7 mtpa; single-cell paddock tailings storage facility with possible in-pit deposition. Maximum height of 372 mRL. Maximum 292 ha footprint.
Water Supply Area Increased Footprint and Abstraction	17 December 2014	Mining Rate	Up to 75 mtpa (ore and waste)	Removed as not a significant key characteristic relevant to the environment.
		Stripping ratio	8:1	Removed as not a significant key characteristic relevant to the environment.

Application	Date Approved	Element	Original Proposal	Approved Change to Proposal
Volume. September 2014		Water Supply	Up to 7GL/year	Up to 9 GL/year
		Mine Access Road	Pinjin Option – 370 km (~210 km of road construction)	Pinjin Route – 370 km (~210 km of road construction.
		Communications	Fibre Optic or Microwave via either Pinjin or Tropicana Transline Corridor	Removed as not a significant key characteristic relevant to the environment.
		Main Power Supply	Onsite power station with an installed capacity of up to 40 Mw	Removed as regulated under Part V of the *Environmental Protection Act 1986*.
		Disturbance Area	Not more than 3,440 ha comprising: • Operational area – 2,570 ha • Water supply area – 200 ha • Infrastructure area – 670 ha	Not more than 3,540 ha comprising: • Operational area – 2,570 ha within 27,241 ha Operational Development Envelope. • Water supply area – 300 ha within 19,663 ha Water Supply Area Development Envelope. • Infrastructure areas – 670 ha within 4,269 ha Infrastructure Development Envelope.
		Figures	Figure 1 – Regional location of mine site Figure 2 – Proposal footprint and conceptual layout of key components	Figure 1 and 2 of Schedule 1 replaced by: Figure 1: Development Envelopes Table 2: Development Envelopes – Map Grid of Australia (MGA) Zone 51 Coordinates.
Operational Area Waste Landform. October	8 December 2016	Overburden and waste	Not more than 800 mt	Not more than 800 mt placed in waste landforms.
		Waste landform	Not more than 1,200 hectares. Maximum height 375 mRL. Slope with maximum angle of 15 degrees	Not more than 1,200 hectares. Maximum height 417 mRL including rehabilitation cover. Slope with maximum angle of 15 degrees.
		Tailings Storage Facility (TSF)	Up to 7 mtpa; single-cell paddock tailings storage facility with possible in-pit deposition. Maximum height of 372 mRL. Maximum 292 ha footprint.	Single-cell tailings storage facility with possible in-pit deposition.
Operational Area Underground Mining	18 April 2019	Short Description	The construction and operation of an open-cut gold mine and associated infrastructure, located approximately 330 km east northeast of Kalgoorlie and 200 km east of Laverton.	The construction and operation of a gold mine utilising open-cut and underground mining methods, and associated infrastructure located approximately 330 km east northeast of Kalgoorlie and 200 km east of Laverton.

Application	Date Approved	Element	Original Proposal	Approved Change to Proposal
		Disturbance Footprint	Not more than 3540 ha comprising: • Operational area – 2570 ha within a 27,241 ha Operational Development Envelope. • Water supply area – 300 ha within a 19,663 ha Water Supply Area Development Envelope. • Infrastructure areas – 670 ha within a 4269 ha Infrastructure Development Envelope.	Not more than 3540 ha comprising: • Operational area – 2570 ha within a 27,241 ha Operational Development Envelope. • Water supply area – 300 ha within a 19,663 ha Water Supply Area Development Envelope. • Infrastructure areas – 670 ha within a 18,494 ha Infrastructure Development Envelope.
		Figures		Figure – all previous Figures in Attachment 3 are replaced by the following: Figure 1 Tropicana Gold Project Development Envelope
		Table 4		Table 4: Development Envelope Coordinates Coordinates defining the Tropicana Gold Project development envelope are held by the Department of Water and Environmental Regulation, document reference number 2019-1554437706567.
Water Supply Kamikaze Borefield	13 October 2020	Water Supply	Up to 9 GL/year	Up to 9 GL/year with no more than 4 GL/year from the Kamikaze Borefield.
Operational Area Open Cut Mining	3 June 2022	Open pit void	Not more than 400 ha	Not more than 420 ha in total
		Number of pits	Up to 4	Removed maximum number, length and width of the open pits as physical elements unnecessarily constrained open pit development within the limits of the Operational Area Disturbance Envelope where this development does not affect the key environmental values of the TGM.
		Maximum length of pits	6 km (if pits combine)	
		Maximum width of pits	1.5 km	

2 Current Status

The Project status remained in operation during the reporting period. Key activities undertaken during the reporting period included:

- Continuation of mining in the Tropicana, Boston Shaker and Havana Open Pits.
- Continuation of mining in the Boston Shaker Underground.
- Continued Processing plant operation and gold production.
- Groundwater abstraction from the Process Water Supply Borefield.
- Groundwater abstraction from the Kamikaze Borefield.

Table 2 provides an overview of the Project's key characteristics and current status while the updated disturbance footprint is shown in Figure 1, Figure 2 and Figure 3.

Table 2: Tropicana Gold Project Key Characteristics Table Status Report

Element	Description	Status / Comment
Physical Elements		
Disturbance footprint	Not more than 3,540 ha comprising: • Operational area – 2,570 ha within 27,241 ha Operational Development Envelope. • Water supply area – 300 ha within 19,663 ha Water Supply Area Development Envelope. • Infrastructure areas – 670 ha within 18,494 ha Infrastructure Development Envelope.	Reporting period total disturbance: Total Area: 3231.41 ha Operational Area: 2404.31 ha Water Supply Area: 203.97 ha Infrastructure Area: 623.13 ha
Open pit voids	Not more than 420 hectares in total	Current open pit area: 382.95 ha
Waste landform	Not more than 1200 hectares. Maximum height 417 mRL including rehabilitation cover. Slope with maximum angle of 15 degrees.	Current Waste landform area: 787.75 ha Current max height: 408.24 mRL (AHD71).
Mine access road	Pinjin Route –370 km (~210 km of road construction)	Pinjin Mine Access Road construction was completed during the 2012 reporting period.
Aerodrome	All weather strip 2.4 km	Aerodrome completed and commissioned. 2.1 km all weather strip.
Water Pipeline	Approximately 50 km in length from the borefield (located north northwest of Operational Area) to process plant	Pipeline completed and commissioned. Pipeline length is approximately 42 km.
Tailings Storage Facility (TSF)	Single-cell tailings storage facility with possible in-pit deposition.	Single-cell TSF constructed and operated.

Element	Description	Status / Comment
Operational Elements		
Overburden and waste	Not more than 800 mt placed in waste landforms.	Total of 459.77 Mt of waste material placed within the following waste landforms: LEA – 273.63 Mt LTA – 49.47 Mt LWE – 136.67 Mt
Water Supply	Up to 9 GL/year with no more than 4 GL/year from the Kamikaze Borefield.	Total of 5.7 GL abstracted from the borefields: PWSB – 2.6 GL Kamikaze – 3.1 GL
Dewatering Rate	1,000 to 5,000 kL/day	662,823 kL total volume dewatered during reporting period. Average dewatering rate of 1816 kL/day.
Other elements which affect extent of effects on the environment		
Proposal time	Approximately 15 years of mining; total project duration up to 25 years (including post closure monitoring)	Mining and Processing activities continued at a steady rate during the reporting period

Note – Data recorded as of September 2022

3 Compliance

This CAR represents the twelfth reporting period for TGM and the ninth full operating period for TGM, with the processing plant commencing operation during September 2013.

During the 2022 reporting period the Tropicana JV was compliant with all ministerial conditions associated with the Conditions of MS839. The Statement of Compliance and completed audit table providing further detail on compliance with conditions is included in Appendix A.

In accordance with the CAP, the CAR for the 2022 reporting period will be made publicly available once the Tropicana JV has received acknowledgement from the Department of Water and Environmental Regulation (DWER) that the report has been accepted. A copy of the CAR 2022 will then be publicly available on the Tropicana JV website.

No changes have been made to the previously approved CAP during this reporting period (Condition 4.1 of MS839).

4 Environmental Monitoring and Management

During the 2022 reporting period groundwater, storm water, vegetation condition and fauna monitoring programs were undertaken, and the results were analysed. Details of monitoring activities conducted throughout 2022 and further analysis on monitoring results is provided to the Department of Mines, Industry Regulation and Safety (DMIRS) and DWER in separate annual reports.

4.1 Groundwater Monitoring

Groundwater monitoring from the eight monitoring bores installed around the TSF and waste landform footprints (Figure 4) continued throughout the reporting period. A summary of results from the sampling events are provided in Appendix C. Results obtained from these monitoring bores were compared against trigger values which were established in 2014. Analysis of results indicates that changes in groundwater quality (baseline groundwater quality +/- 10%) has occurred at some monitoring bores.

ENVMB001, located to the north of the TSF, has displayed results for multiple parameters that are above baseline water quality triggers values, including Calcium (Ca), Chloride (Cl), Cobalt (Co), Magnesium (Mg), Sodium (Na), WAD Cyanide (Cn), Electrical Conductivity (EC) as well as Total Dissolved Solids (TDS). Groundwater quality changes at ENVMB001 are influenced by the operation of the nearby TSF.

Conversely, monitoring for ENVMB004 has recorded results below the minimum trigger values for multiple parameters, including Bicarbonate Alkalinity ($CaCO_3$), Boron (Bo), Chloride (Cl) and Sulphate (SO_4). Results recorded lower than the minimum trigger value are considered to be associated with natural fluctuations in groundwater quality and not associated with operational activities.

Localised changes in groundwater quality are not considered to have any detrimental impact to environmental values. The existing groundwater environment is typically saline to hypersaline and has no known beneficial users. No stygofauna were identified within the Operational Area during baseline surveys. Monitoring of vegetation condition in proximity to operational areas has not identified any impacts to vegetation health associated with changes in groundwater quality.

ENVMB007 was decommissioned early July 2022 due to the expansion of the waste rock landform East (LEA) footprint. Since monitoring commenced in late 2013 groundwater levels at ENVMB007 remained stable, with a small rise of 0.87 m over time to 42.62 m BGL in June 2022 indicating minimal impacts from operational activities. During the current reporting period Nickel was reported above upper trigger values on one occasion (February 2022) (Appendix C).

4.2 TSF Seepage Mitigation Project

In 2016, AGAA implemented a Seepage Mitigation Project to mitigate localised rises in groundwater levels in proximity to the Tailings Storage Facility (TSF) to reduce the potential for future impacts of shallow saline groundwater on vegetation. The Seepage Mitigation Project was continued throughout the reporting period.

Table 3: Current Equiped TSF Recovery Bores

TSF Recovery Bore	Date of Pump Installation	Location	Cumulative Abstraction (m3/hr)
TSF Trench Pond	April 2021	North of TSF	~ 180 – 190 m3 /hr
TSFRB005	August 2019	North of TSF	
TSFRB006A	December 2019	North of TSF	
TSFRB007	January 2020	North of TSF	
TSFRB009	July 2020	North of TSF	
TSFRB010	March 2021	North of TSF	
TSFRB017	June 2019	North of TSF	
TSFRB019	July 2019	South of TSF	
TSFRB022	June 2020	South of TSF	
TSFRB025	April 2019	TSF East Wall Causeway	
TSFRB026	December 2019	TSF East Wall	
TSFRB038	June 2020	South of TSF	
TSFRB041	August 2020	North of TSF	
TSFRB049	December 2019	South of TSF	
TSFRB050	July 2019	South of TSF	
TSFRB057	January 2021	North of TSF	
TSFRB058 *	October 2019	West of TSF	
TSFRB059 *	November 2019	West of TSF	
TSFRB060 *	December 2019	West of TSF	
TSFRB061	June 2019	South of TSF	
TSFRB062	June 2020	North of TSF	
TSFRB063 *	December 2019	West of TSF	
TSFRB078	July 2021	South-east of TSF	
TSFRB079	June 2021	South-east of TSF	
TSFRB080	July 2021	South-east of TSF	
TSFRB083	July 2022	West of TSF	
TSFRB084	July 2022	West of TSF	
TSFRB089	March 2022	TSF North Wall Causeway	
TSFRB090	March 2022	TSF North Wall Causeway	

* *Decommissioned bores November 2020*

AGAA will continue to monitor groundwater across the TGM and will implement additional mitigation actions as and when required to minimise the environmental impacts of the operation.

4.3 Stormwater Monitoring

Stormwater (previously referred to as surface water) monitoring sites have been established around the TSF and waste landforms (Figure 5) as required by Condition 8.2. Due to the absence of continuous standing surface water, samples from these locations have only been obtained following rainfall events where there is stormwater runoff (>20 mm rainfall in 24 hours). Results from stormwater sampling locations are provided in Appendix D.

4.4 Vegetation Monitoring

Monitoring of vegetation condition and abundance is required on an annual basis across TGM in accordance with Condition 5-2 of MS839. A Vegetation Monitoring Strategy (VMS) was developed in 2011 to achieve the requirements of Condition 5-2. The VMS was designed using an integrated remote sensing (entire site) and targeted field assessment (local scale) approach to detect and quantify decline in vegetation condition that may result from any of the identified impacting processes. In 2022 health and cover indices were recorded using a combination of remote sensing and field assessment techniques.

The VMS establishes the vegetation monitoring triggers for the Project. Triggers relate to native vegetation cover and productivity, indicator species, clearing boundaries, weeds, and rehabilitation. The 2022 program involved an assessment of the survey findings against four of the Project triggers – Trigger 1 (25% deviation in cover or productivity within monitoring (impact) sites relative to reference sites), Trigger 2 (25% deviation of indicator species within monitoring (impact) sites relative to reference sites), Trigger 5 (Identification of a weed species in a site where it had not previously been recorded) and Trigger 6 (25% increase of weed species in abundance or cover relevant to reference site) as outlined in the VMS.

The 2022 monitoring program was undertaken by Eco Logical Australia Pty Ltd in September 2022 (Appendix H). The monitoring program involved the assessment of high resolution digital multi-spectral imagery and field survey verification at 110 quadrats (20m by 20m in size). The locations of the vegetation monitoring sites are shown in Figure 6.

Exceedances of Trigger 1 were identified at fifteen impact sites throughout the Operational Area, Infrastructure Corridor and Borefield (Water Supply Area), in comparison with eleven impact sites in the 2021 monitoring program. Two of the Operations Area impact sites were cleared and buried beneath the waste landform expansion in 2022, however two new impact sites were established during the 2022 survey to replace these. All other changes that were detected and exceeded the threshold values for Trigger 1 for the survey were assessed to be due to natural process and not due to operational activities.

Overall, no impact sites in any of the three development envelopes (Operational Area, Infrastructure Area and Water Supply Area) require any management under Triggers 1, 2, 5 or 6 as identified changes exceeding the 25% deviation threshold between the impact and reference site were judged to be not due to mining related activities.

4.5 Fauna Monitoring

Fauna monitoring conducted during the reporting period has included:

- Daily wildlife inspections at the Tailings Storage Facility (TSF).
- Fauna observations at the TSF by Donato Environmental Services (DES) to support the TGM Cyanide Code certification. Fauna monitoring by DES is normally conducted on a quarterly basis, but due to COVID-19 DES personnel were unable to travel to Western Australia between December 2021 and February 2022 and between March 2022 to May 2022 due to delays in DES's contractual arrangements.
- Photographic monitoring of artificial water sources (Plate 1 to Plate 3).

Several artificial water sources have been established around the TSF to provide an alternate water source for wildlife which are monitored via motion sensing cameras and periodically reviewed. Photographic monitoring has captured a number of fauna species utilising the artificial ponds including a variety of birds, marsupials, mammals and reptiles.

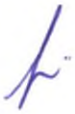
5 Endorsement

This Report has been endorsed by:

Mr Stephen Perkins
General Manager
Tropicana Gold Mine
AngloGold Ashanti Australia

I have reviewed this document and accept that the information provided is an accurate account of the activities undertaken during the current reporting period (24 September 2021 to 23 September 2022).

Date: 19 December 2022



Stephen Perkins
General Manager
Tropicana Gold Mine
AngloGold Ashanti Australia

FIGURES

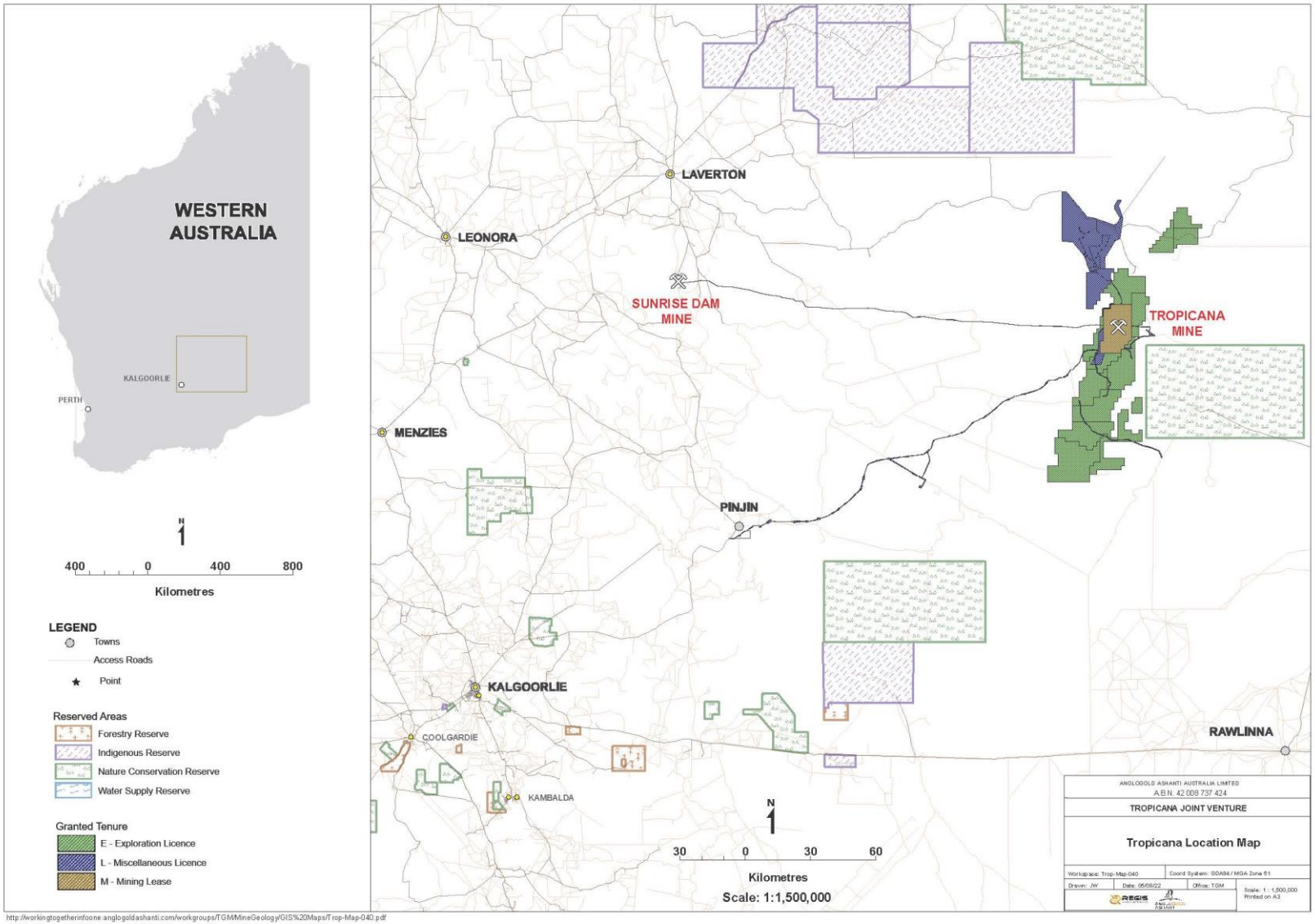


Figure 1: General Location of the Tropicana Gold Mine

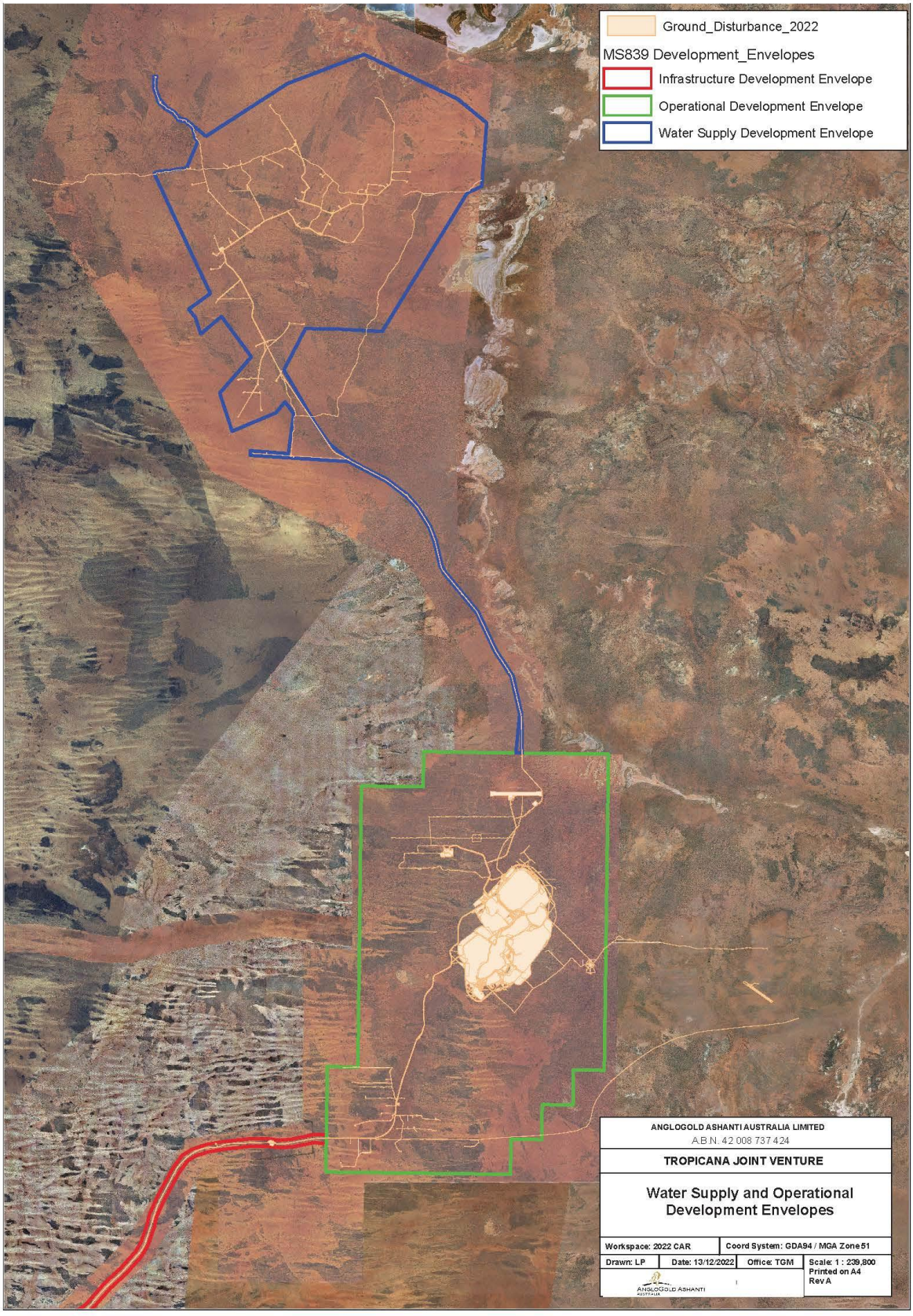


Figure 2: Water Supply and Operational Development Envelopes

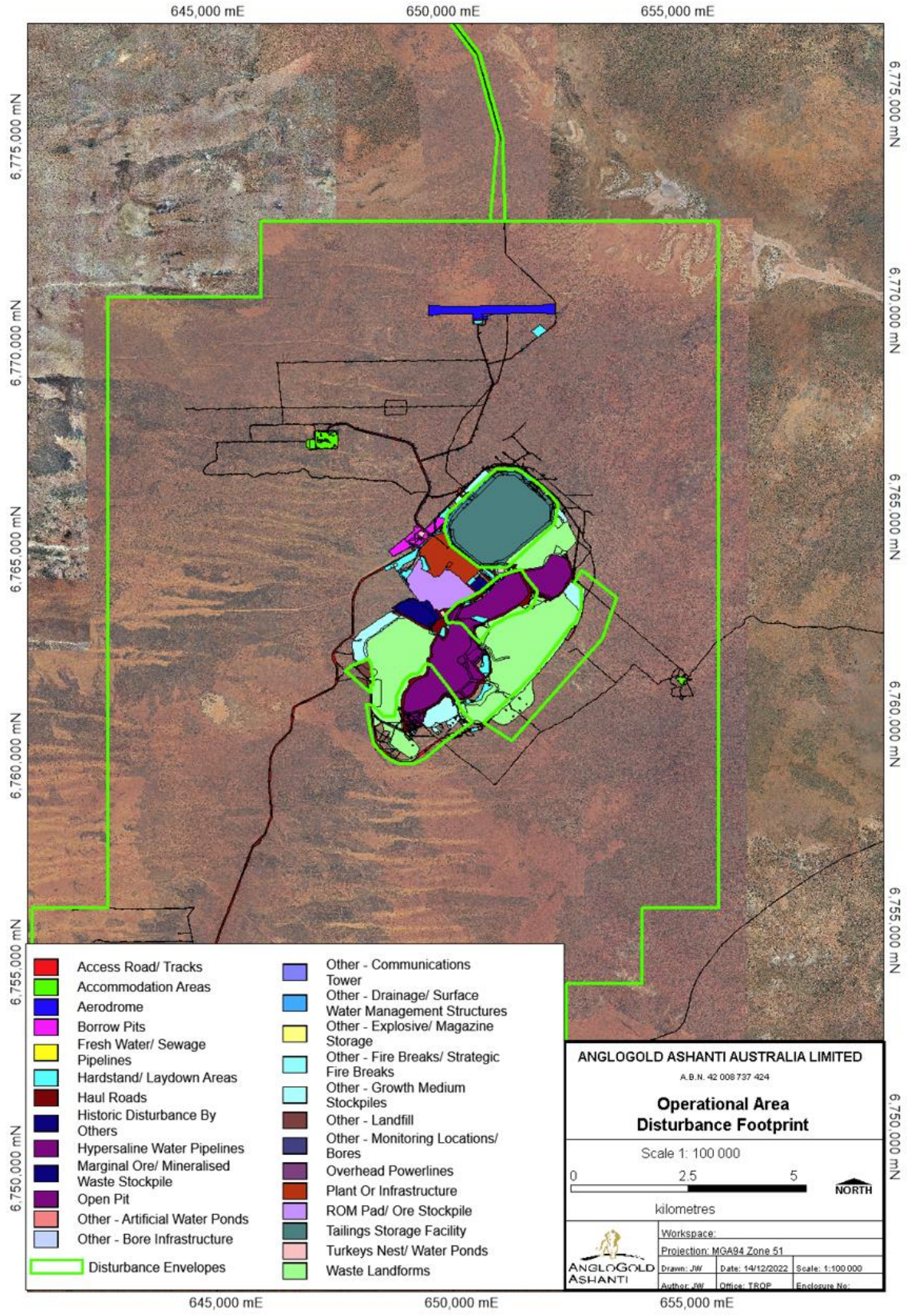


Figure 3: Operational Area Disturbance Footprint

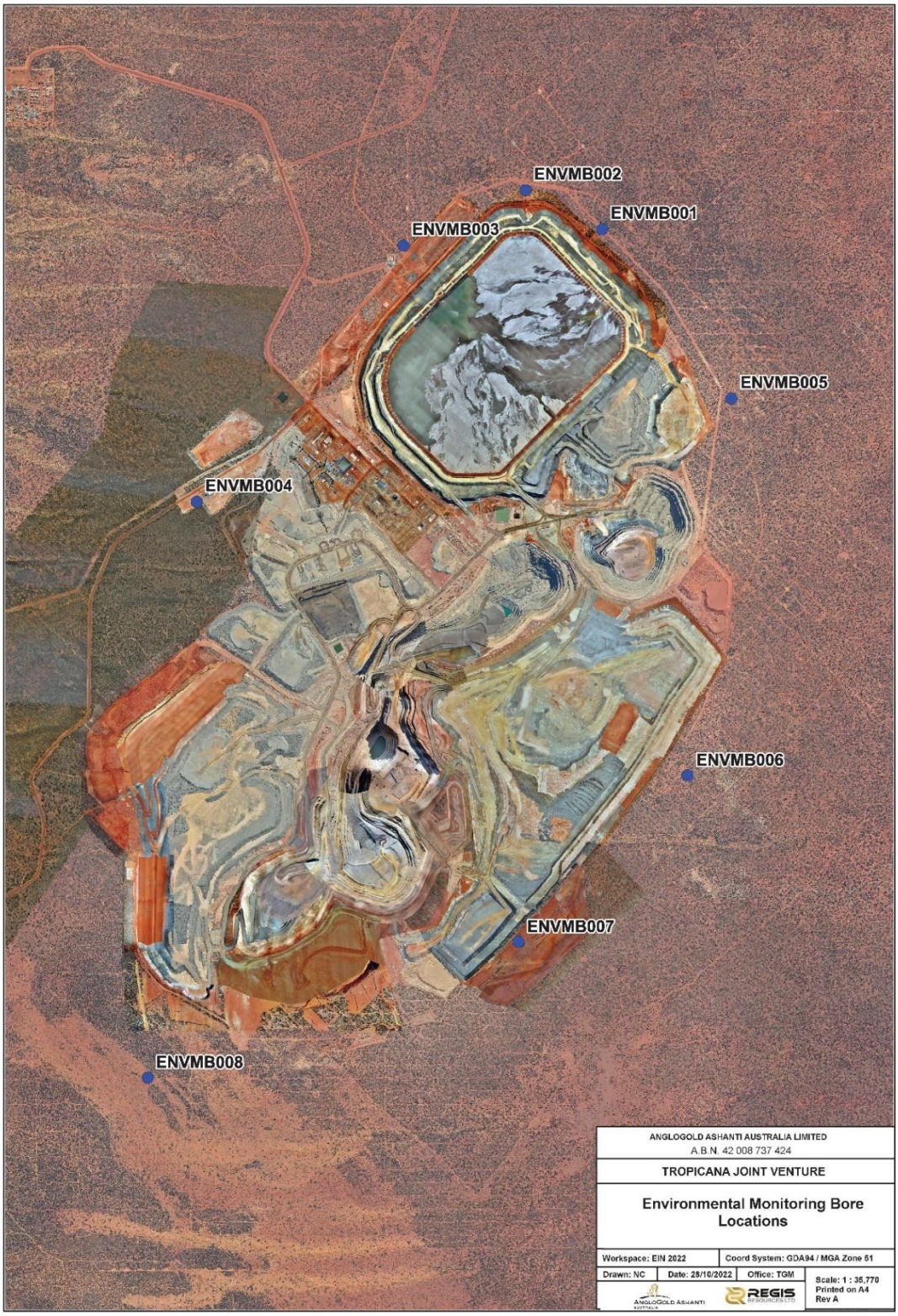


Figure 4: MS839 Groundwater Monitoring Bore Locations

Figure 5: Storm Water Monitoring Locations

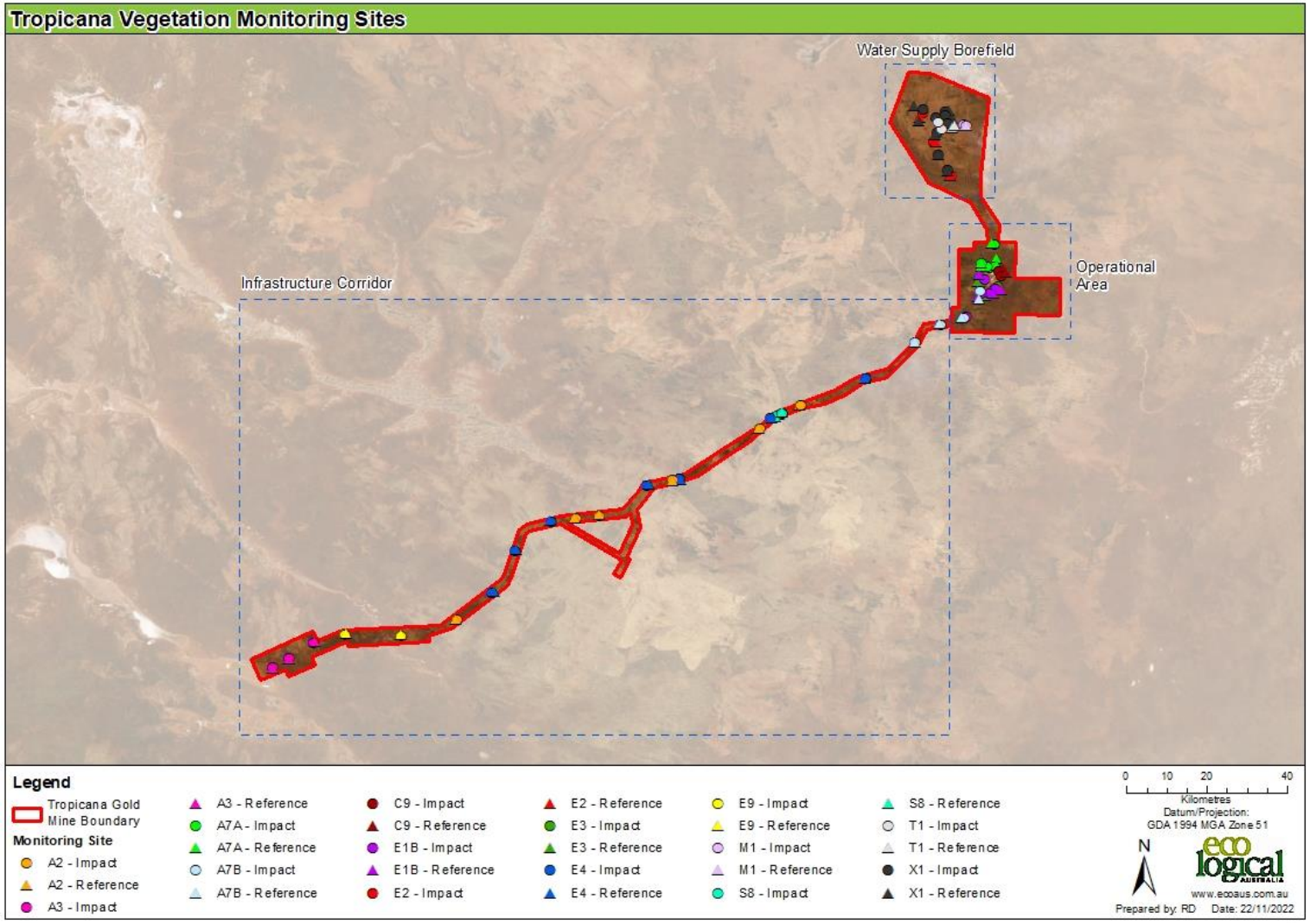


Figure 6: Vegetation condition monitoring quadrat locations (2022)

SITE PHOTOGRAPHS

Plate 1: Photo monitoring of TSF artificial water sources [TSF ART 2] – Wedge tailed Eagles (February 2022)

Plate 2: Photo monitoring of TSF artificial water sources [TSF ART 7] – Peregrine Falcon (February 2022)

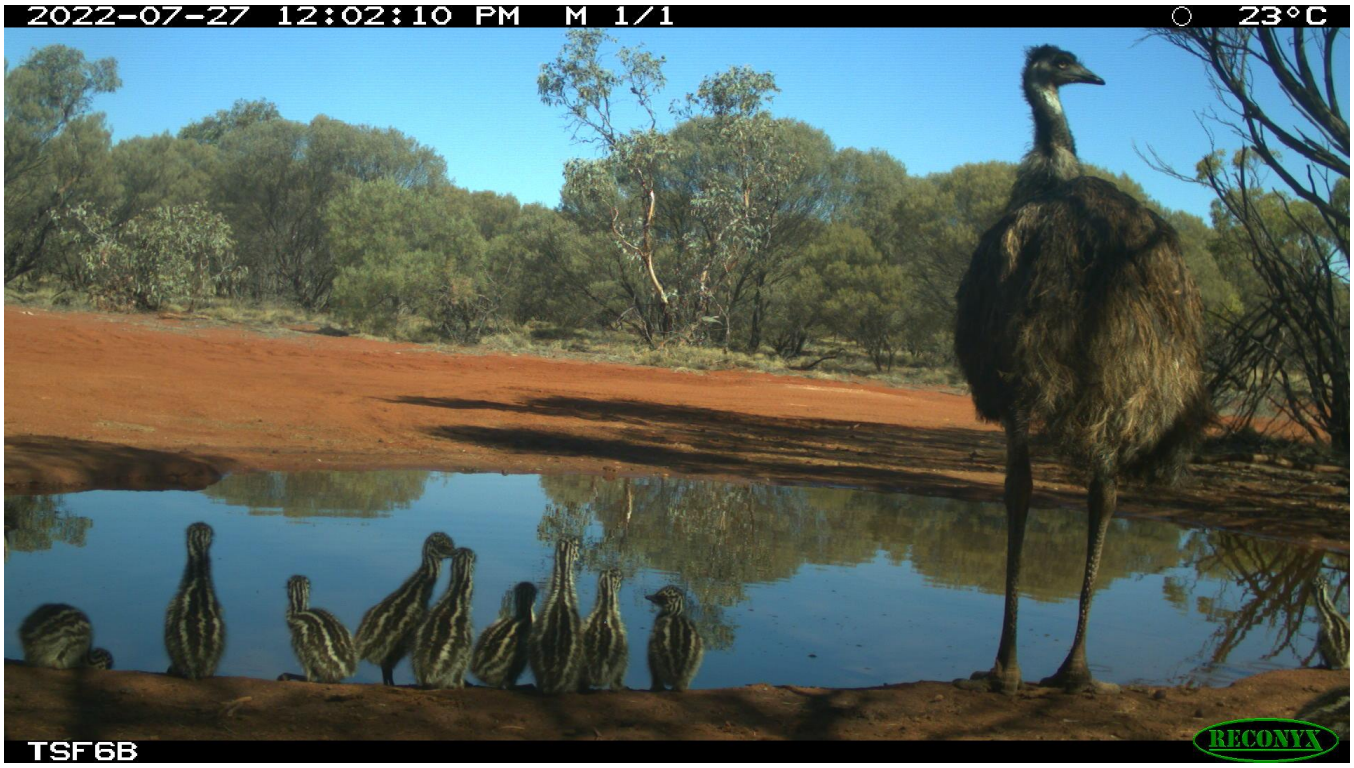


Plate 3: Photo monitoring of TSF artificial water sources [TSF ART 6] – Emus (July 2022)

APPENDICES

Appendix A – Statement of Compliance and Audit Table

Statement of Compliance

1. Proposal and Proponent Details

Proposal Title	*TROPICANA GOLD PROJECT, SHIRE OF MENZIES, SHIRE OF LAVERTON AND THE CITY OF KALGOORLIE – BOULDER*
Statement Number	*839*
Proponent Name	*Tropicana Joint Venture (AngloGold Ashanti Australia Limited and Independence Group NL)*
Proponent's Australian Company Number *(where relevant)*	

2. Statement of Compliance Details

Reporting Period	*24/09/21* to *23/09/22*

Implementation phase(s) during reporting period (please tick ✓ relevant phase(s))							
Pre-construction		Construction		Operation	✓	Decommissioning	

Audit Table for Statement addressed in this Statement of Compliance is provided at Attachment:	2
An audit table for the Statement addressed in this Statement of Compliance must be provided as Attachment 2 to this Statement of Compliance. The audit table must be prepared and maintained in accordance with the Department of Water and Environmental Regulation (DWER) *Post Assessment Guideline for Preparing an Audit Table*, as amended from time to time. The 'Status Column' of the audit table must accurately describe the compliance status of each implementation condition and/or procedure for the reporting period of this Statement of Compliance. The terms that may be used by the proponent in the 'Status Column' of the audit table are limited to the Compliance Status Terms listed and defined in Table 1 of Attachment 1.	

Were all implementation conditions and/or procedures of the Statement complied with within the reporting period? (please tick ✓ the appropriate box)			
No (please proceed to Section 3)		Yes (please proceed to Section 4)	✓

Each page (including Attachment 2) must be initialed by the person who signs Section 4 of this Statement of Compliance.
INITIALS: JP

3. Details of Non-compliance(s) and/or Potential Non-compliance(s)

The information required Section 3 must be provided for each non-compliance or potential non-compliance identified during the reporting period covered by this Statement of Compliance.

Non-compliance/potential non-compliance 3-1

Which implementation condition or procedure was non-compliant or potentially non-compliant?
Was the implementation condition or procedure non-compliant or potentially non-compliant?
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☐ Yes ☐ Reported to DWER verbally Date _____ ☐ Reported to DWER in writing Date _____	☐ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
What was the cause(s) of the non-compliance or potential non-compliance?
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

For additional non-compliance or potential non-compliance, please duplicate this page as required.

Each page (including Attachment 2) must be initialed by the person who signs Section 4 of this Statement of Compliance.
INITIALS: ___

4. Proponent Declaration

I, STEPHEN PERKINS - GENERAL MANAGER, *(full name and position title)*

declare that I am authorised on behalf of ANGLOGOLD ASHANTI AUSTRALIA

(being the person responsible for the proposal) to submit this form and that the information contained in this form is true and not misleading.

Signature:..... Date: 19/12/2022

Please note that:

- it is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give or cause to be given information that to his knowledge is false or misleading in a material particular; and
- the Chief Executive Officer of the DWER has powers under section 47(2) of the *Environmental Protection Act 1986* to require reports and information about implementation of the proposal to which the statement relates and compliance with the implementation conditions.

5. Submission of Statement of Compliance

One hard copy and one electronic copy (preferably PDF on CD or thumb drive) of the Statement of Compliance are required to be submitted to the Chief Executive Officer, DWER, marked to the attention of Manager, Compliance (Ministerial Statements).

Please note, the DWER has adopted a procedure of providing written acknowledgment of receipt of all Statements of Compliance submitted by the proponent, however, the DWER does not approve Statements of Compliance.

6. Contact Information

Queries regarding Statements of Compliance, or other issues of compliance relevant to a Statement may be directed to Compliance (Ministerial Statements), DWER:

Manager, Compliance (Ministerial Statements)

Department of Water and Environmental Regulation

Postal Address:	Locked Bag 10 Joondalup DC WA 6919
Phone:	(08) 6364 7000
Email:	compliance@dwer.wa.gov.au

7. Post Assessment Guidelines and Forms

Post assessment documents can be found at www.epa.wa.gov.au

Each page (including Attachment 2) must be initialed by the person who signs Section 4 of this Statement of Compliance.
INITIALS: SP

ATTACHMENT 1

Table 1 Compliance Status Terms

Compliance Status Terms	Abbrev	Definition	Notes
Compliant	C	Implementation of the proposal has been carried out in accordance with the requirements of the audit element.	This term applies to audit elements with: • ongoing requirements that have been met during the reporting period; and • requirements with a finite period of application that have been met during the reporting period, but whose status has not yet been classified as 'completed'.
Completed	CLD	A requirement with a finite period of application has been satisfactorily completed.	This term may only be used where: • audit elements have a finite period of application (e.g. construction activities, development of a document); • the action has been satisfactorily completed; and • the DWER has provided written acceptance of 'completed' status for the audit element.
Not required at this stage	NR	The requirements of the audit element were not triggered during the reporting period.	This should be consistent with the 'Phase' column of the audit table.
Potentially Non-compliant	PNC	Possible or likely failure to meet the requirements of the audit element.	This term may apply where during the reporting period the proponent has identified a potential non-compliance and has not yet finalized its investigations to determine whether non-compliance has occurred.
Non-compliant	NC	Implementation of the proposal has not been carried out in accordance with the requirements of the audit element.	This term applies where the requirements of the audit element are not "complete" have not been met during the reporting period.
In Process	IP	Where an audit element requires a management or monitoring plan be submitted to the DWER or another government agency for approval, that submission has been made and no further information or changes have been requested by the DWER or the other government agency and assessment by the DWER or other government agency for approval is still pending.	**The term 'In Process' may not be used for any purpose other than that stated in the Definition Column.** The term 'In Process' may not be used to describe the compliance status of an implementation condition and/or procedure that requires implementation throughout the life of the project (e.g. implementation of a management plan).

GOVERNMENT OF WESTERN AUSTRALIA

Office of the **Environmental Protection Authority**

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Proposal Implementation Monitoring Section

PROJECT: Tropicana Gold Project, Shire of Menzies, Shire of Laverton and the City of Kalgoorlie-Boulder

Note:

- Phases that apply in this table = Pre-Construction, Construction, Operation, Decommissioning, Overall (several phases)
- This audit table is a summary and timetable of conditions and commitments applying to this project. Refer to the Minister's Statement for full detail/precise wording of individual elements.
- Code prefixes: M = Minister's condition; P = Proponent's commitment; A = Audit specification; N = Procedure.
- Any elements with status = "Audited by proponent only" are legally binding but are not required to be addressed specifically in compliance reports, if complied with.
- Acronyms list: Minister for the Environment - Minister for Environment; Chief Executive Officer – CEO of the OEPA; Department of Environment – DoE (now DEC – Dept of Environment and Conservation); Department of Water and Environmental Regulation – DWER; Evaluation Division - Part IV; Pollution Prevention Division - Part V; Waste Management Division - WMD; Department of Conservation and Land Management - CALM; Department of Minerals and Energy - DME; Environmental Protection Authority - EPA; Health Department of WA - HDWA; Water and Rivers Commission - WRC; Bush Fires Board - BFB.

Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M1.1	**Proposal Implementation**	The proponent shall implement the proposal as assessed by the Environmental Protection Authority and described in Schedule 1 of this statement subject to the condition and procedures of this statement.	As per Schedule 1, Statement 839	Compliance Report	Minister for Environment		Overall	Ongoing	Compliant	Activities undertaken during the reporting period were compliant with Schedule 1 of the Ministerial Statement.
839:M2.1	**Proponent Nomination and Contact Details**	The proponent for the time being nominated by the Minister for Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.	Notify in writing a letter that provides details of the name and address of the new proponent	Letter applying for a transfer of proponent and a copy of the Statement endorsed by the proposed replacement proponent	Minister for Environment		Overall	Ongoing	Compliant	The nominated proponents for the Project did not change during the reporting period.
839:M2.2	**Proponent Nomination and Contact Details**	The proponent shall notify the Chief Executive Officer of the Office of the Environmental Protection Authority of any change of the name and address of the proponent for the serving of notices or other correspondence within 30 days of such change	Notify in writing a letter that provides details of the name and address of the new proponent		CEO		Overall	Within 30 days of such change	Compliant	There was no change to the name and or address of the nominated Proponent during the reporting period.
839:M3.1	**Time Limit of Authorisation**	The authorisation to implement the proposal provided for in this statement shall lapse and be void five years after the date of this statement if the proposal to which this statement relates is not substantially commenced	Notify in Writing	Letter of notification	CEO		Overall	Before the 23 September 2015	Completed	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078).
839:M3.2	**Time Limit of Authorisation**	The proponent shall provide the Chief Executive Officer of the Office of the Environmental Protection Authority with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement	Notify in Writing	Letter of notification.	CEO		Overall	Before the 23 September 2015	Completed	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078).

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M4.1	**Compliance Reporting**	The proponent shall prepare and maintain a Compliance Assessment Plan (CAP) to the satisfaction of the Chief Executive Officer of the Office of the Environmental Protection Authority	Correspondence with the OEPA Preparation of a CAP and an audit table in compliance with the requirements of the OEPA.	Approved CAP A completed and approved Audit Table (this document). Compliance Report	CEO		Overall	Ongoing	Compliant	CAP was prepared and submitted on 13 Dec 2010. No updates have been made during the reporting period. Correspondence from General Manager OEPA on 14 February 2011 indicates OEPA is satisfied that the CAP addresses Condition M4.1.
839:M4.2	**Compliance Reporting**	The proponent shall submit to the Chief Executive Officer of the Office of the Environmental Protection Authority, the CAP required by condition 4-1 at least 6 months prior to the first compliance report required by condition 4-6, or prior to ground disturbing activity, whichever is sooner. The CAP shall indicate: 1. the frequency of compliance reporting; 2. the approach and timing of compliance assessments; 3. the retention of compliance assessments; 4. the method of reporting of potential non-compliances and corrective actions taken; 5. the table of contents of compliance reports; and 6. public availability of compliance reports.	The CAP shall indicate: 1. the frequency of compliance reporting; 2. the approach and timing of compliance assessments; 3. the retention of compliance assessments; 4. reporting of potential non-compliances and corrective actions taken; 5. the table of contents of compliance reports; and 6. public availability of compliance reports.	Approved CAP Correspondence with OEPA	CEO		Pre-construction	By 24 June 2011 or prior to ground disturbing activities, whichever is sooner	Completed	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078). OEPA confirmed the CAP submitted on 13 December 2010 meets the requirements of M4.2 in a letter dated 14 February 2011 (A366869).
839:M4.3	**Compliance Reporting**	The proponent shall assess compliance with conditions in accordance with the CAP required by condition 4-1.	As specified in CAP	Overview provided in Compliance Report	Minister for Environment		Overall	Compliance Report – Annually by 24 December	Compliant	CAR prepared as per CAP and submitted prior to 24 December 2022 as required.
839:M4.4	**Compliance Reporting**	The proponent shall retain reports of all compliance assessments described in the CAP required by condition 4-1 and shall make those reports available when requested by the Chief Executive Officer of the Office of the Environmental Protection Authority.	Records and reports will be maintained in accordance with the Proponent's document management system requirements so that they can be retrieved if requested.	Availability at the request of the CEO	CEO		Overall	When requested by the CEO	Compliant	The CAP was submitted to the OEPA on 13 December 2010 and was approved by the OEPA on 14 February 2011. A CAR has been prepared annually since 2011. The 2022 CAR has been submitted prior to 24 December as required. All records and reports are maintained in the AGAA document management system.
839:M4.5	**Compliance Reporting**	The proponent shall advise the Chief Executive Officer of the Office of the Environmental Protection Authority of any potential non-compliance within seven days of that non-compliance being known.	Notify in writing	Correspondence to CEO of OEPA	CEO		Overall	Within 7 days of non-compliance being known	Compliant	No non-compliances, which were required to be reported to the DWER in accordance with Condition 4.5, were observed during the reporting period.
839:M4.6	**Compliance Reporting**	The proponent shall submit to the Chief Executive Officer of the Office of the Environmental Protection Authority the first CAR fifteen months from the date of issue of this Statement addressing the twelve month period from the date of issue of this Statement and then annually from the date of submission of the first CAR. The CAR shall: 1. be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf; 2. include a statement as to whether the proponent has complied with the conditions; 3. identify all potential non-compliances and describe corrective and preventative actions taken; 4. be made publicly available in accordance with the approved compliance assessment plan; and 5. indicate any proposed changes to the CAP required by condition 4-1.	In accordance with CAP	1. Endorsement in Compliance Report. 2. Compliance Report. 3. Uploaded on to proponent's website and copies sent to DEC Library and PIMB (OEPA).	CEO		Overall	The First CAR submitted due by 24 December 2011. Then annually by 24 December	Compliant	The 2022 CAR will be the twelfth annual CAR prepared in accordance with the CAP and has been submitted prior to 24 December as required. Following acceptance of the 2022 CAR by the DWER, the report will be made publicly available on the Tropicana JV website (www.tropicanajv.com.au).

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M5.1	**Flora and Vegetation**	The proponent shall ensure that there is no loss of plants of Declared Rare Flora species due to construction or operational activities unless otherwise approved.	Implementation and internal audit of DRF management strategies in Section 13 of the Threatened Species and Community Management Strategy (TS&CMS). Implementation and internal audit of Environmental Monitoring Strategy Application for Licence to Take DRF (Regulation 17) where applicable	Species location records, design/location records and any incident reports/logs in monitoring report and summary in Compliance Report Approvals for license to take DRF	Minister for Environment		Overall	Ongoing	Compliant	There is currently no known Declared Rare Flora (DRF) species located within the TGM Project area. *Conospermum toddii* (Victoria Desert Smokebush) which had been recorded in the baseline studies at Tropicana and on associated infrastructure areas as a threatened species has since been deleted from the Endangered species list under the EPBC Act 1999 on May 16th, 2011. This species was delisted as a result of regional targeted studies undertaken by Mattiske Consulting in a wider area to the south of Tropicana operational areas and as such the species was reclassified as a Priority 4 species under the Biodiversity Conservation Act (2016) at the State level in Western Australia.
839:M5.2	**Flora and Vegetation**	The proponent shall undertake monitoring of the condition and abundance of vegetation and flora at reference and potential impact sites in accordance with the "Tropicana Gold Project Environmental Monitoring Strategy, Version: 1.0, Author: B Bastow, Issue Date: 18 February 2010" or subsequent revisions approved by the Chief Executive Officer of the Office of the Environmental Protection Authority. This monitoring is to be carried out to the requirements of the Chief Executive Officer of the Office of the Environmental Protection Authority on advice of the Department of Environment and Conservation.	Implementation and internal audit of Environmental Monitoring Strategy Correspondence with OEPA (revisions) and DEC	Monitoring report included in Project Annual Environmental Report (AER) and summary in Compliance Report. Monitoring Records Maps and Photos Correspondence with OEPA (revisions) and DEC	CEO	DEC	Overall	Ongoing	Compliant	The annual vegetation monitoring program was conducted during September 2022. A brief overview of the report findings is provided in the 2022 CAR. A copy of the 2022 Vegetation Monitoring Report is provided as Appendix H.
839:M5.3	**Flora and Vegetation**	Should the potential impact sites show a 25 per cent (or greater) decline in cover or productivity as compared to the reference sites, the proponent shall provide a report to the Chief Executive Officer of the Office of the Environmental Protection Authority within 21 days of the decline being identified which: 1. describes the decline; 2. provides information which allows determination of the likely root cause of the decline; and 3. if likely to be caused by activities undertaken in implementing the proposal, states the actions and associated timelines proposed to remediate the decline.	Internal audit of monitoring records and analysis of monitoring data Notify in writing	Monitoring Records Report outlining decline, potential causes and corrective actions taken Report to CEO of OEPA	CEO		Overall	Within 21 days of the decline being identified	Compliant	The annual vegetation monitoring was conducted in September 2022, and a final report was received on 14 December 2022 (Appendix H). A brief overview of the report findings is provided in Section 4 of the 2022 CAR. The 2022 monitoring program identified fifteen (15) paired monitoring locations where the impact site showed a 25% decline in cover as compared to the reference site. Two of the Operations Area impact sites were cleared and buried beneath the waste landform expansion in 2022, however two new impact sites were established during the 2022 survey to replace these. All other changes that exceeded the 25% decline in cover threshold were assessed to be due to natural processes and not due to operational activities. A report was provided to DWER on 19 December 2022 in accordance with the requirements of Condition 5-3.

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M5.4	**Flora and Vegetation**	The proponent shall, on approval of the Chief Executive Officer of the Office of the Environmental Protection Authority, implement the actions identified in 5-3 (3) and continue to implement such actions until the Chief Executive Officer of the Office of the Environmental Protection Authority determines that the remedial actions may cease.	Implement the actions identified in 5-3 (3)	Correspondence with the OEPA	CEO		Overall	On approval of the CEO	Not required at this stage	Declines in vegetation cover were not related to mining activities, no actions are required to be implemented.
839:M5.5	**Flora and Vegetation**	The proponent shall make the Environmental Monitoring Strategy referred to in 5-2 publicly available in a manner approved by the Chief Executive Officer of the Office of the Environmental Protection Authority.	1. In accordance with Proposal Implementation Monitoring Section – Fact Sheet 1 – Draft - Making Documents Publicly Available, unless otherwise instructed by the CEO; 2. Adherence to a condition in a Statement requiring public availability of documents must occur within 14 days of submission of the documents to the CEO; and 3. 14 days from the date of making documents publicly available, proponents shall provide evidence to the CEO to confirm that advertising or lodgement on website has been completed.	Document available on website (and letter to CEO to confirm) Copy of Document to DEC Library and PIMB (OEPA)	CEO		Overall	Ongoing and within 14 days of submission and approval of any revisions	Compliant	The Environmental Monitoring strategy is available on the Tropicana JV website (www.tropicanajv.com.au/sustainability/document library).

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M6.1	**Threatened Species**	The proponent shall implement the "Tropicana Gold Project Threatened Species and Communities Management Strategy (TS, Version 2.0, Author: B Bastow, Issue Date: July 2009", or subsequent revisions approved by the Chief Executive Officer of the Office of the Environmental Protection Authority. The objective of this strategy is to minimise adverse impacts to conservation significant species and communities.	Implementation and internal audit of DRF management strategies in Section 13 of the Threatened Species and Community Management Strategy (TS&CMS). Internal Audit Correspondence with OEPA (revisions)	Monitoring report included in Project Annual Environmental Report (AER) and summary in Compliance Report. Electronic Species location records Design/location records Site inductions Maps and Photos	CEO		Overall	Ongoing	Compliant	The Threatened Species and Communities Management Strategy (TSCMS) was approved 30 December 2014 by the then DPaW. In accordance with Condition 6.2, the Threatened Species and Communities Management Strategy was reviewed in 2017. The updated version was submitted to the Department of Biodiversity Conservation and Attractions (DBCA) in December 2017. Feedback was received from DBCA in 2018. Engagement with DWER in December 2019 led to recommendations that the TSCMS be aligned to the structure of a contemporary Management Plan as per EPA Guidance April 2018. The 2021 version of the TGM Threatened Species and Communities Management Plan (formerly named the Threatened Species and Communities Management Strategy) was submitted to the Department of Biodiversity Conservation and Attractions (DBCA) and Department of Water & Environment Regulation (DWER) on 22 December 2021. An internal compliance audit against the 2021 TGM Threatened Species and Communities Management Plan has been conducted (Appendix F). Internal ground disturbance permits (GDP) are issued prior to any clearing activities. Examples of GDPs approved during the reporting period are provided in Appendix G.
839:M6.2	**Threatened Species**	The proponent shall review and revise the Tropicana Gold Project Threatened Species and Communities Management Strategy referred to in 6-1, in consultation with the Department of Environment and Conservation, every three years to ensure that the mitigation and management techniques remain valid and incorporate any relevant new research.	Formal review by specialist advisers and DEC	Correspondence with DEC Revised Strategy Research records	Minister for Environment	DEC	Overall	Review and revise every 3 years with the first review due 24 September 2013.	Compliant	The Threatened Species and Communities Management Strategy was reviewed in 2017. An updated version was submitted to the Department of Biodiversity Conservation and Attractions (DBCA) in December 2017. Feedback was received from DBCA in 2018. Engagement with DWER in December 2019 recommended that the TSCMS be aligned to the structure of a contemporary Management Plan as per EPA Guidance April 2018. A final TGM Threatened Species and Communities Management Plan (formerly named the Threatened Species and Communities Management Strategy) was submitted to DWER and DBCA on 22 December 2021. The final version has been uploaded to the Tropicana JV website.

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M6.3	**Threatened Species**	The proponent shall make the Tropicana Gold Project Threatened Species and Communities Management Strategy referred to in 6-1 publicly available in a manner approved by the Chief Executive Officer of the Office of the Environmental Protection Authority.	1. In accordance with Proposal Implementation Monitoring Section – Fact Sheet 1 – Draft - Making Documents Publicly Available, unless otherwise instructed by the CEO; 2. Adherence to a condition in a Statement requiring public availability of documents must occur within 14 days of submission of the documents to the CEO; and 3. 14 days from the date of making documents publicly available, proponents shall provide evidence to the CEO to confirm that advertising or lodgement on website has been completed.	Document available on website (and letter to CEO to confirm) Copy of Document to DEC Library and PIMB (OEPA)	CEO		Overall	Ongoing and within 14 days of submission and approval of revision	Compliant	The most up to date version of the TGM Threatened Species and Communities Management Plan (formerly named the Threatened Species and Communities Management Strategy) is available on the Tropicana JV website (www.tropicanajv.com.au).

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M7.1	**Trapped Fauna**	The proponent shall ensure that open trenches associated with construction of the water pipeline and the communications link are cleared of trapped fauna by fauna-rescue personnel at least twice daily. Details of all fauna recovered shall be recorded. The first daily clearing shall take place no later than three hours after sunrise and shall be repeated between the hours of 3:00 pm and 6:00 pm. The open trenches shall also be cleared, and fauna details recorded, by fauna-rescue personnel no more than one hour prior to backfilling of trenches. Note: "fauna-rescue personnel" means an employee of the proponent whose responsibility it is to walk the open trench to recover and record fauna found within the trench.	Internal audit of trench inspection records and procedures	Trench Inspection Fauna Report Trench inspection records Backfilling records Fauna removal and relocation records Fauna injury/mortality records Correspondence with the DEC	Minister for Environment		Construction	Duration of pipeline construction Trench inspection fauna report will be submitted no later than 21 day from the cessation of construction	Complete	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078).
839:M7.2	**Trapped Fauna**	The fauna-rescue personnel shall be trained in the following, through a program that meets the requirements of the Chief Executive Officer of the Office of the Environmental Protection Authority: 1. Fauna identification, capture and handling (including venomous snakes); 2. Identification of tracks, scats, burrows and nests of conservation-significant species; 3. Fauna vouchering (of deceased animals); 4. Assessing injured fauna for suitability for release, rehabilitation or euthanasia; 5. Familiarity with the ecology of the species which may be encountered in order to be able to appropriately translocate fauna encountered; and 6. Performing euthanasia.	Training program approved by CEO of OEPA Internal audit of training records	Training Program records Correspondence with the OEPA	CEO		Construction	Program approved prior to the commencement of pipeline construction	Complete	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078).
839:M7.3	**Trapped Fauna**	Open trench lengths shall not exceed a length capable of being inspected and cleared by the fauna-clearing personnel within the required times as set out in condition 7-1.	Internal audit of inspection records Appropriate planning of pipeline construction	Trench Inspection Fauna Report Trench inspection records	Minister for Environment		Construction	During pipeline construction	Complete	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078).
839:M7.4	**Trapped Fauna**	Ramps providing egress points and/or fauna refuges providing suitable shelter from the sun and predators for trapped fauna are to be placed in the trench at intervals not exceeding 50 meters.	Internal audit of inspection records and design drawings	Trench Inspection Fauna Report Trench inspection records Backfilling records Photographs	Minister for Environment		Construction	During pipeline construction	Complete	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078).
839:M7.5	**Trapped Fauna**	The proponent shall produce a report on fauna management within the water pipeline lateral easement and communication corridor at the completion of pipeline and communication link construction. The report shall include the following:	1. As per PIMB fact sheet 1 Making documents publicly available. Preparation of report as per criteria following finalisation of pipeline	Trench Inspection Fauna Report Document available on website (and letter to CEO to confirm)	CEO		Overall	Trench inspection fauna report will be submitted no later than 21 days after the completion of	Complete	Assessed as 'Completed' by DWER Desktop Audit Report September 2017 (CA03-2013-0078).

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
		1. details of all fauna inspections; 2. the number of fauna cleared from trenches; 3. fauna mortalities; and 4. all actions taken. The report shall be provided to the Chief Executive Officer of the Office of the Environmental Protection Authority no later than 21 days after the completion of pipeline installation, and shall be made publicly available in a manner approved by the Chief Executive Officer of the Office of the Environmental Protection Authority	installation and submit to OEPA within 21 days. Report published in a manner approved by CEO of OEPA	Copy of Document to DEC Library and PIMB (OEPA)				pipeline installation		

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M8.1	**Groundwater and Surface Water Quality**	The proponent shall ensure that run-off and/or seepage from the tailings storage facility and waste material landforms does not impact the quality of surface water or groundwater within or adjacent to the proposal area to exceed the trigger values for a slightly to moderately disturbed ecosystem provided for in Table 3.4.2 of Chapter 3 of the Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, *Australian Water Quality Guidelines for Fresh and Marine Waters* and its updates, taking into consideration natural background water quality	Internal audit of water monitoring results against table 3.4.2 of Chapter 3 of *Australian Water Quality Guidelines for Fresh and Marine Waters (2000)* as updated	Monitoring Report included in Project AER and summary included as part of the Compliance Report	Minister for Environment		Overall	Ongoing	Compliant	Groundwater monitoring bores around the TSF and waste landforms have been sampled throughout the reporting period. Review and analysis of the groundwater monitoring results identifies minor and localised variations to the baseline values however, there is no observed detrimental impact to the receiving environment. As noted in the EPA Report 1361, there is limited beneficial users of groundwater in the vicinity of the Project. The detailed review is provided in Appendix C. The objective of Condition 8-1, as per EPA Report 1361, “to ensure that any discharge of water from the TSF and waste material landforms is monitored, managed and treated if necessary, to ensure that surface and groundwater quality are maintained” is being achieved: • Monitored – AGAA undertakes a comprehensive groundwater monitoring programme to enable identification of potential impacts to groundwater quality (Appendix C). • Managed – AGAA have implemented a TSF seepage recovery borefield to mitigate any impacts to the groundwater regime. • Treated – seepage abstraction by the recovery borefield facilitates the removal of potential contaminates from the groundwater environment. Abstracted groundwater is returned to the Raw Water Pond for use in the Processing Plant. Variation of groundwater monitoring results against baseline values remains consistent with results for 2016, 2017, 2018, 2019, 2020 and 2021. This variation in groundwater quality was considered by the OEPA following correspondence between AGAA and the OEPA in January and March 2017. The OEPA concluded that AGAA remained in compliance with Condition 8-1 (OEPA Ref: 2015-1482376198617). For an update on the TSF Seepage Mitigation Project, please refer to Section 4.2 of the 2022 CAR. Opportunistic stormwater (surface water) monitoring has been conducted following rainfall events greater than 20 mm in 24 hours (Appendix D). Sampling of stormwater runoff is undertaken at set monitoring locations within the disturbed footprint of the operational area.

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Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M8.2	**Groundwater and Surface Water Quality**	The proponent shall monitor the quality of surface water and groundwater upstream and downstream of the tailings storage facility and waste material landforms to ensure that the requirements of condition 8-1 are met. This monitoring is to be carried out using methods consistent with Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, *Australian Guidelines for Water Quality Monitoring and Reporting* (and its updates) and to the satisfaction of the Chief Executive Officer of the Office of the Environmental Protection Authority.	Implementation of Environmental Monitoring Strategy Internal audit of water monitoring methodology against *Australian Guidelines for Water Quality Monitoring and Reporting* (2000) and its updates	Monitoring report included in Project AER and Summary included in Compliance Report	CEO		Overall	Ongoing	Compliant	Groundwater monitoring bores around the TSF and waste landforms have been sampled throughout the reporting period (Appendix C). Opportunistic Stormwater (surface water) monitoring has been conducted following rainfall events greater than 20 mm in 24 hours (Appendix D). An internal audit of the monitoring methodology against the Australian Guidelines for Water Quality Monitoring and Reporting (2000) was undertaken (Appendix E).
839:M8.3	**Groundwater and Surface Water Quality**	The proponent shall commence the water quality monitoring required by 8-2 before ground disturbing activities in order to collect baseline data	Implementation of Environmental Monitoring Strategy Internal audit of groundwater and surface water monitoring program	Monitoring report included in Project AER and Summary included in Compliance Report	CEO		Pre-construction	Before ground disturbing activities.	Compliant / Completed	Following review of the 2013 TGM CAR the OEPA advised in a letter dated 5 June 2014 (OEPA Ref CA01-2013-0078/2014-0000827594) that AGAA was compliant with MS839 Condition 8.3. As the collection of baseline data was a pre-construction phase activity and AGAA was assessed by the OEPA to be compliant with MS839 Condition 8.3 in 2014, AGAA considers the status of Condition 8.3 to be 'Completed'.
839:M8.4	**Groundwater and Surface Water Quality**	The proponent shall submit annually the results of monitoring required by condition 8-2 to the Chief Executive Officer of the Office of the Environmental Protection Authority	Written submission of results within the annual compliance reports	Correspondence with OEPA Monitoring report included in Project AER and Summary included in Compliance Report	CEO		Overall	Compliance Report – Annually by 24 December	Compliant	A summary of water monitoring results is provided in the 2022 CAR (Appendix C and Appendix D).
839:M8.5	**Groundwater and Surface Water Quality**	In the event that monitoring required by condition 8-2 indicates that the requirements of condition 8-1 are not being met, the proponent shall: 1. report such findings to the Chief Executive Officer of the Office of the Environmental Protection Authority within 21 days of the decline in water quality being identified; 2. provide evidence which allows determination of the root cause of the decline in water quality; and 3. if determined to be a result of activities undertaken in implementing the proposal, state the actions and associated timelines proposed to be taken to remediate the water quality.	Preparation of report as per criteria and submit to OEPA within 21 days. Internal review of monitoring results against criteria outlined in condition 8.1	Report outlining the water quality change, potential causes and corrective actions taken	CEO		Overall	No later than 21 days of the decline in water quality being identified.	Not Required	The requirements of Condition 8.1 have been met – refer to Condition 8.1.

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839:M8.6	**Groundwater and Surface Water Quality**	The proponent shall, on approval of the Chief Executive Officer of the Office of the Environmental Protection Authority, implement the actions identified in 8-5 (3) and continue to implement such actions until the Chief Executive Officer of the Office of the Environmental Protection Authority determines that the remedial actions may cease.	Implement the actions identified in 8-5 (3)	Correspondence with OEPA	CEO		Overall	On approval of the CEO	Not Required	A summary of water monitoring results is provided in the 2022 CAR (Appendix C and Appendix D).
839:M8.7	**Groundwater and Surface Water Quality**	The proponent shall make the monitoring reports required by condition 8-2 publicly available in a manner approved by the Chief Executive Officer of the Office of the Environmental Protection Authority	1. In accordance with Proposal Implementation Monitoring Section – Fact Sheet 1 – Draft - Making Documents Publicly Available, unless otherwise instructed by the CEO; 2. Adherence to a condition in a Statement requiring public availability of documents must occur within 14 days of submission of the documents to the CEO; and 3. 14 days from the date of making documents publicly available, proponents shall provide evidence to the CEO to confirm that advertising or lodgement on website has been completed. In accordance with CAP	Document available on website (and letter to CEO to confirm) Copy of Document to DEC Library and PIMB (OEPA)	CEO		Overall	Within 14 days of submission	Compliant	Following acceptance of the 2022 CAR by the OEPA, the report, including monitoring results contained in Appendix C and D, will be made publicly available on the Tropicana JV website (www.tropicanajv.com.au)

ATTACHMENT 2: AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: Tropicana Gold Project, Shire of Menzies, Shire of Laverton and the City of Kalgoorlie-Boulder

Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M9.1	**Rehabilitation**	The proponent shall undertake progressive rehabilitation over the life of the proposal to achieve the following outcomes: 1. The waste material landforms and tailings storage facility shall be non-polluting and shall be constructed so that their stability, surface drainage, resistance to erosion and ability to support local native vegetation are similar to undisturbed natural analogue landforms as demonstrated by Ecosystem Function Analysis or other methodology acceptable to the Chief Executive Officer of the Office of the Environmental Protection Authority. 2. Waste material landforms, tailings storage facility and other areas disturbed through implementation of the proposal (excluding mine pits), shall be progressively rehabilitated with vegetation composed of native plant species of local provenance (defined as seed or plant material collected within the Great Victoria Desert Bioregions 1 and 2). 3. The percentage cover and species diversity of living self-sustaining native vegetation in all rehabilitation areas shall be comparable to that of undisturbed natural analogue sites as demonstrated by Ecosystem Function Analysis or other methodology acceptable to the Chief Executive Officer of the Office of the Environmental Protection Authority. 4. No new species of weeds (including both declared weeds and environmental weeds) shall establish in the area as a result of the implementation of the proposal. 5. The coverage of weeds (including both declared weeds and environmental weeds) within rehabilitated areas shall be no greater than the average of three reference sites on nearby land, with the reference sites to be chosen in consultation with the Department of Environment and Conservation. Note: The methodology for Ecosystem Function Analysis is set out in Tongway DJ and Hindley 2004 *LandsCAPe Function Analysis – Procedures for Monitoring and Assessing LandsCAPes*, Commonwealth Scientific and Industrial Research Organisation Sustainable Ecosystems, Canberra.	Implementation of Operational Management Strategy, Tailings Environmental Management Strategy and Conceptual Closure and Rehabilitation Management Strategy (and approved future revisions) Internal audit of rehabilitation and closure activities and records Correspondence with OEPA and DEC on Monitoring Strategy Analysis of monitoring data	Rehabilitation Records Annual Mine Plan Map and photos of rehabilitation Rehabilitation Monitoring Records	CEO	DEC	Overall	Ongoing	Compliant	A total of 122.84 ha of progressive rehabilitation has been completed to date. During the reporting period, rehabilitation earthworks were completed on a section of the LWE waste landform. Earthworks were undertaken over an approximately 13 ha area to construct waste landform batter slopes at 15˚, apply growth media to a depth of 500mm, contour rip and hand seed as per the TGM waste landform rehabilitation design. An update on rehabilitation activities undertaken during the reporting period is provided in Appendix B. As progressive rehabilitation of waste landforms has only recently commenced at TGM and rehabilitation of the TSF has not yet been undertaken, there is no requirement to monitor the rehabilitation success on these landforms at this time. The TGM Mine Closure Plan was revised and updated in 2022 in accordance with the 'Mine Closure Plan Guidance – How to prepare in accordance with Part 1 of the Statutory Guidelines for Mine Closure Plans' (March 2020) and submitted to DMIRS in September 2022. The 2022 TGM Mine Closure Plan (REG ID 114171) has since been accepted by DMIRS and is currently awaiting review. AGAA has not yet commenced formal rehabilitation monitoring due to the minimal progressive rehabilitation completed during the life of mine to date and the need to conduct further research to determine the most appropriate methodology to monitor rehabilitation success at TGM. Preliminary reference sites have been established at TGM to assist in planning species for rehabilitation programs, defining potential realistic targets for completion criteria and future assessments of rehabilitation areas.
839:M9.2	**Rehabilitation**	Rehabilitation activities shall continue until such time as the requirements of condition 9-1 are met, and are demonstrated by inspections and reports to be met, for a minimum of five years following mine completion to the satisfaction of the Chief Executive Officer of the Office of the Environmental Protection Authority, on advice of the Department of Mines and Petroleum	Activities will continue until the M9.1 requirements are met for a minimum of 5 years Seek advice from DMP following mine completion.	Rehabilitation records Rehabilitation Monitoring Records Correspondence with OEPA and DMP	CEO	DMP	Overall	Ongoing until the requirements of M9-1 are met for a minimum of 5 years	Compliant	Rehabilitation activities will be conducted progressively as and when areas become available. As progressive rehabilitation of waste landforms has only recently commenced at TGM and rehabilitation of the TSF has not yet been undertaken, there was no requirement to monitor the rehabilitation success on these landforms during the reporting period.

ATTACHMENT 2: AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: Tropicana Gold Project, Shire of Menzies, Shire of Laverton and the City of Kalgoorlie-Boulder

Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M10.1	**Final Closure and Decommissioning Plan**	At least five years prior to mine completion, the proponent shall prepare and submit a Final Closure and Decommissioning Plan to the requirements of the Chief Executive Officer of the Office of the Environmental Protection Authority, on advice of the Department of Mines and Petroleum	Preparation of a Final Closure and Decommissioning Plan in accordance with criteria.	Correspondence with OEPA approving the Plan	CEO	DMP	Overall	At least five years prior to mine completion	Not required at this stage	The TGM Mine Closure Plan was revised and updated in 2022 in accordance with the 'Mine Closure Plan Guidance – How to prepare in accordance with Part 1 of the Statutory Guidelines for Mine Closure Plans' (March 2020) and submitted to DMIRS in September 2022. The 2022 TGM Mine Closure Plan (REG ID 114171) has since been accepted by DMIRS and is currently awaiting review. The current Life of Mine (LOM) is 2029 and as such, TGM has more than five years to completion.
839:M10.2	**Final Closure and Decommissioning Plan**	The Final Closure and Decommissioning Plan shall be prepared consistent with: 1. ANZMEC/MCA 2000, *Strategic Framework for Mine Closure Planning*; and 2. Department of Industry Tourism and Resources 2006 *Mine Closure and Completion* (Leading Practice Sustainable Development Program for the Mining Industry), Commonwealth Government, Canberra;	Preparation of a Final Closure and Decommissioning Plan in accordance with criteria.	Submit plan to CEO of OEPA and DMP Approval of Plan by OEPA.	CEO	DMP	Overall	At least five years prior to mine completion	Not required at this stage	The TGM Mine Closure Plan was revised and updated in 2022 in accordance with the 'Mine Closure Plan Guidance – How to prepare in accordance with Part 1 of the Statutory Guidelines for Mine Closure Plans' (March 2020) and submitted to DMIRS in September 2022. The 2022 TGM Mine Closure Plan (REG ID 114171) has since been accepted by DMIRS and is currently awaiting review. The current Life of Mine (LOM) is 2029 and as such, TGM has more than five years to completion.
839:M10.3	**Final Closure and Decommissioning Plan**	The Final Closure and Decommissioning Plan shall provide detailed technical information on the following: 1. final closure of all areas disturbed through implementation of the proposal so that they are safe, stable and non-polluting; 2. decommissioning of all plant and equipment; 3. disposal of waste materials; 4. final rehabilitation of waste dumps; tailings storage facilities and other areas (outside the mine pit(s)); 5. Management and monitoring following mine completion; and 6.inventory of all contaminated sites and proposed management.	Preparation of a Final Closure and Decommissioning Plan in accordance with criteria.	Submit plan to CEO of OEPA and DMP. Approval of the plan by OEPA.	CEO	DMP	Overall	At least five years prior to mine completion	Not required at this stage	The TGM Mine Closure Plan was revised and updated in 2022 in accordance with the 'Mine Closure Plan Guidance – How to prepare in accordance with Part 1 of the Statutory Guidelines for Mine Closure Plans' (March 2020) and submitted to DMIRS in September 2022. The 2022 TGM Mine Closure Plan (REG ID 114171) has since been accepted by DMIRS and is currently awaiting review. The current Life of Mine (LOM) is 2029 and as such, TGM has more than five years to completion.
839:M10.4	**Final Closure and Decommissioning Plan**	The proponent shall close, decommission and rehabilitate the proposal in accordance with the approved Final Closure and Decommissioning Plan	Implementation of the Final Closure and Decommissioning Plan Internal and external audits (as required) of the Final Closure and Decommissioning Plan	Closure, rehabilitation and Decommissioning activities detailed in the Project AER and summary included in Compliance Report	Minister for Environment		Overall	Ongoing	Not required at this stage	The current Life of Mine (LOM) is 2029 and as such, TGM has more than five years to completion.

ATTACHMENT 2: AUDIT TABLE

Proposal Implementation Monitoring Section
PROJECT: Tropicana Gold Project, Shire of Menzies, Shire of Laverton and the City of Kalgoorlie-Boulder

Audit Code	Subject	Action	How	Evidence	Satisfy	Advice	Phase	When	Status 2022	Comment
839:M10.5	**Final Closure and Decommissioning Plan**	The proponent shall make the Final Closure and Decommissioning Plan required by conditions 10-1 and 10-2 publicly available in a manner approved by the Chief Executive Officer of the Office of the Environmental Protection Authority	1. In accordance with Proposal Implementation Monitoring Section – Fact Sheet 1 – Draft - Making Documents Publicly Available, unless otherwise instructed by the CEO; 2. Adherence to a condition in a Statement requiring public availability of documents must occur within 14 days of submission of the documents to the CEO; and 3. 14 days from the date of making documents publicly available, proponents shall provide evidence to the CEO to confirm that advertising or lodgement on website has been completed.	Document available on website (and letter to CEO to confirm) Copy of Document to DEC Library and PIMB (OEPA)	CEO		Overall	Within 14 days of submission	Not required at this stage.	The current Life of Mine (LOM) is 2029 and as such, TGM has more than five years to completion.

Appendix B – Rehabilitation Summary

MEMORANDUM

Date: 10 November 2022

To: TGM Environment Operations

From: Matthew Stingemore

Subject: 2021 / 2022 Rehabilitation Summary: MS839 CAR

1 Rehabilitation Activities

A total of 122.84 ha of rehabilitation has been completed for TGM.

Table 1: Summary of rehabilitation completed for TGM

Disturbance Category	Rehabilitation (ha)
Access Roads / Tracks	1.54
Borrow Pit	82.15
Camp Site	14.08
Hardstand / Laydown	1.32
Other – Bore Infrastructure	1.35
Overhead Powerline	0.02
Turkeys Nest	9.72
Waste Landform	12.67
TOTAL	**122.84**

1.1 Reporting Period

During the reporting period the following key rehabilitation activities were commenced and/or progressed at TGM:

- Completion of rehabilitation earthworks on a section of the LWE Waste Landform.
- Review and update of the TGM 2022 Mine Closure Plan.
- Open Pit groundwater modelling at closure to simulate post-mining aquifer recovery and potential pit lake formation within open pit voids.
- Collection of local provenance seed species for use in progressive rehabilitation activities.

1.2 Previous Rehabilitation

During 2012-2013, borrow pits, turkeys nests and related infrastructure along the Pinjin Access Road corridor which were not required for future road maintenance activities were rehabilitated. Rehabilitation along the Access Road constitutes the majority of progressive rehabilitation completed for TGM to date.

Following completion of production bore development in the Process Water Supply Borefield (PWSB), areas not required for operational activities have been progressively rehabilitated. Areas rehabilitated include Turkeys Nests, Hardstand / Laydown and Bore Infrastructure.

2 Waste Landform Rehabilitation

During the reporting period, rehabilitation earthworks were completed on a section of the LWE waste landform. Earthworks were undertaken over an approximately 13 ha area to construct waste landform batter slopes at 15˚ as per the TGM waste landform rehabilitation design. Growth medium was spread to a depth of 500 mm, contour ripped and hand-seeded with local provenance species.

Figure 1: Waste landform batter slope progressive rehabilitation.

3 Mine Closure Plan

During the reporting period a significant update to the TGM Mine Closure Plan (MCP) was undertaken. This update included:

- A review and update to the proposed post-mining Landuse.
- Stakeholder consultation on TGM closure planning, including engagement on the proposed TGM post-mining Landuse.
    - Key stakeholder consulted included DMIRS, EPA Services, Shire of Menzies and the Tjuntjuntjara Aboriginal community.
- Revised Closure Risk Assessment.
- Extensive update to the Closure Task Register, based on identified closure domains and closure features.

The 2022 TGM MCP (REG ID 114171) was submitted to DMIRS in September 2022 and is currently awaiting assessment. The previous 2017 TGM Mine Closure Plan (MCP) was approved by DMIRS in October 2018 (REG ID 64407).

4 Open Pit Closure Groundwater Modelling

Groundwater modelling completed by Groundwater Consulting (GWC) in 2022 explored various scenarios including both backfilling and leaving voids open post closure. This study complied previous groundwater modelling studies for the TGM and added an additional 14 months of monitoring data to update the calibration of the data between 2013 and 2021 (GWC 2022).

The mine plan for TGM has allowed for several of the pits to be backfilled with mine waste above natural groundwater levels. This reduces the risk of groundwater impacts and safety risks associated with remnant open pits. The expected status of current pits at closure is outlined in Table 2

Table 2: Open Pit Status at Closure

Open Pit	Pit Closure Status	Pit Lake Formation
Boston Shaker	Pit void with underground portal	Yes
Tropicana	Backfilled	No
Havana	Pit Void	Yes
Havana South	Backfilled	No
Havana South Stage 2	Pit Void	Yes

The results of the groundwater modelling indicate that upon cessation of dewatering at the open pits and the underground mine, the groundwater levels in these areas will recover until a balance is reached between groundwater inflows and groundwater outflows. The model predicts that pit lakes will form at the TGM in voids that are not backfilled (Boston Shaker, Havana and Havana South Stage 2). The pit lakes will act as terminal sinks in the long-term creating a capture zone around the mine. The formation of this capture zone surrounding the TGM is predicted to create a local zone of influence towards the voids (GWC 2022, Figure 5-14 and Figure 5-15). This can be further interpreted that any groundwater impacts will not be mobilised offsite and will remain within the zone of influence.

Appendix C – Groundwater Monitoring Summary

MEMORANDUM

Date: **4 December 2022**

To: TGM Environment Team

From: Lauren McLean

Subject: 2021 / 2022 Groundwater Monitoring Results: MS839 CAR

1 Background: Tropicana Gold Mine Groundwater Trigger Values

1.1 Applicability of ANZECC and ARMCANZ Guidelines

Ministerial Statement 839 (MS839) Condition 8-1 requires that:

"The proponent shall ensure that run-off and/or seepage from the tailings storage facility and waste material landforms does not impact the quality of surface water or groundwater within or adjacent to the proposal area to exceed the trigger values for a slightly to moderately disturbed ecosystem provided for in Table 3.4.2 of Chapter 3 of the Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, *Australian Water Quality Guidelines for Fresh and Marine Waters* and its updates, taking into consideration natural background water quality".

As described in previous CAR reporting periods; in 2014 an internal review/audit by AGAA of the *Australian and New Zealand Environment Guidelines for Fresh and Marine Water Quality* (the Guidelines), specifically Tables 3.4.1 and Table 3.4.2, against results obtained from the Tropicana Gold Mine (TGM) environmental groundwater monitoring bores was undertaken. The review included the compilation of baseline monitoring data collected since the ENV series bores (ENVMB001 to ENVMB008) were installed (October 2013 – November 2014).

A review of the baseline data against the Guidelines trigger values for a slightly to moderately disturbed ecosystem (95% protection level) found that the Tropicana groundwater environment naturally exceeds a number of the Guidelines' trigger values and/or the Guidelines trigger values are too low to be detected by the NATA accredited laboratory engaged by TGM for water analysis. For example, Aluminium has been consistently recorded across the environmental monitoring bores by the laboratory as <0.1 milligrams per litre (mg/L), while the guideline value is 0.055 mg/L. Furthermore, the Guidelines were developed specifically for fresh and marine waters. The groundwater surrounding the TGM does not align with either fresh or marine waters, with Tropicana water quality ranging from saline to hypersaline (TDS ranging from 5,000 mg/L to 54,000 mg/L).

1.2 Adoption of Site-Specific Trigger Values

The intent of the Guidelines is to specify biological, water and sediment quality guidelines for protecting a range of aquatic ecosystems from fresh water to marine. The Guidelines state that they are not sufficient in themselves to protect ecosystem integrity; and that they must be used in the context of the local environmental condition and other important environmental factors. The guidelines should be applied to maintain ecosystems and protect from degradation.

In accordance with the Guidelines, site-specific baselines values have been established for TGM based on ground water monitoring undertaken between October 2013 to November 2014, and site-specific triggers have been developed to enable water quality changes to be identified. Triggers have been developed for each parameter to allow a 10% variation in baseline ground water quality monitoring, as per the TGM Environmental

Monitoring Strategy and the Guidelines. Therefore, although the triggers presented in the Guidelines are not considered relevant for TGM, the intent of the Guidelines has been adopted and implemented on site. The adopted triggers are consistent with MS839 Condition 8-1 as they “take into consideration natural background water quality”.

Figure 1 ENVMB001-008 Locations

2 2021-2022 Groundwater Monitoring Results

During the reporting period (24 September 2021 – 23 September 2022) eight Environmental Monitoring Bores (ENVMB001 to ENVMB008) water levels were measured on a monthly basis, with water quality samples collected quarterly. Since May 2022 machinery movements around ENVMB007 for the LEA expansion hindered monitoring until the monitoring bore was decommissioned in July 2022 as a result of the LEA expansion and therefore will no longer be monitored.

Groundwater monitoring of the ENV series monitoring bores has been undertaken since prior to TSF construction and used to establish baseline groundwater conditions with subsequent annual reporting to DWER under MS839. Locations of the ENV series bores are shown in Figure 5 (Attached).

2.1 Groundwater Levels

Monthly groundwater levels for each bore during the reporting period are presented in Figure 1 and Table 1 (attached):

- To the north of the TSF, ENVMB001 and ENVMB002 reported rises in groundwater of 0.81 m and 2.36 m respectively over the reporting period. These variations have been attributed to the TSF recovery bores on the north side of the TSF being intermittently shut off for the TSF wall lift that was ongoing during the period, plus bore field optimisation and servicing.
- ENVMB003 (west of the TSF) reported a 1.66 m rise in groundwater level over the reporting period, which has been attributed to the TSF recovery bores to the west of the TSF being decommissioned for the TSF waste landform extension.
- Monitoring bores ENVMB004-008 reported water level fluctuations of less than 0.3 m over the reporting period.

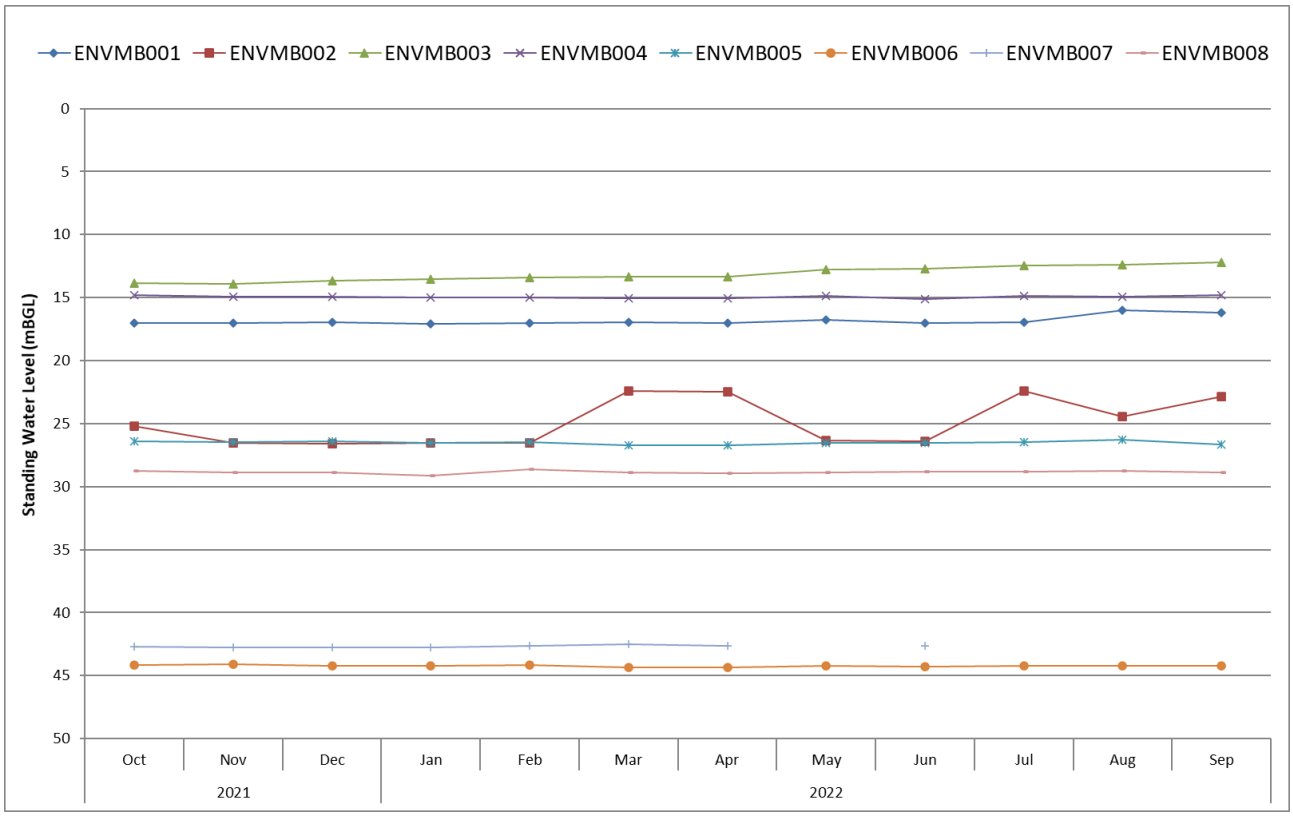


Figure 2 Groundwater Levels in Environmental Monitoring Bores October 2021 – September 2022

2.2 Groundwater Quality

Water quality indicators sampled on a quarterly basis are summarised below and are consistent with results reported in the previous CAR reporting periods. Complete monitoring results are attached as Table 1.

2.2.1 pH

Laboratory pH results (Figure 3) in all bores remained within the trigger level thresholds for the reporting period and remain consistent with previously reported results.

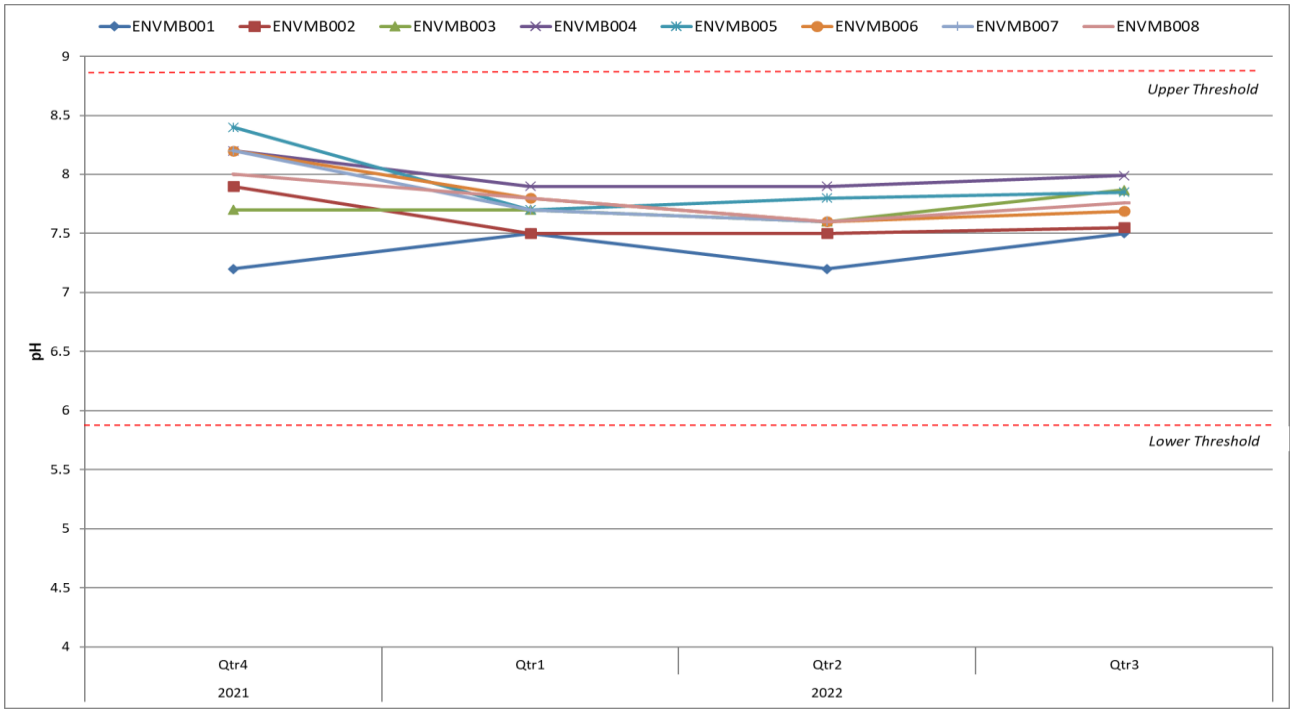


Figure 3 Laboratory pH in Environmental Monitoring Bores Q4 2021 to Q3 2022

2.2.2 Total Dissolved Solids (TDS)

Concentrations of total dissolved solids (TDS) were consistent with previous reporting periods, as summarised in Figure 4 and Table 2 (attached):

- ENVMB001 (north of the TSF) remained hypersaline and above the upper trigger value, as in previous periods;
- ENVMB002-003 and 005-008 were all within trigger value thresholds, ranging from saline to hypersaline and were consistent with previous years; and
- ENVMB004 was reported at, or slightly below, the lower trigger value and is in the brackish range. This represents the lower limit of salinity within the operational area, in the up-hydraulic gradient portion of the paleochannel system flowing broadly northward to the Salt Lake system north of the process water supply borefield.

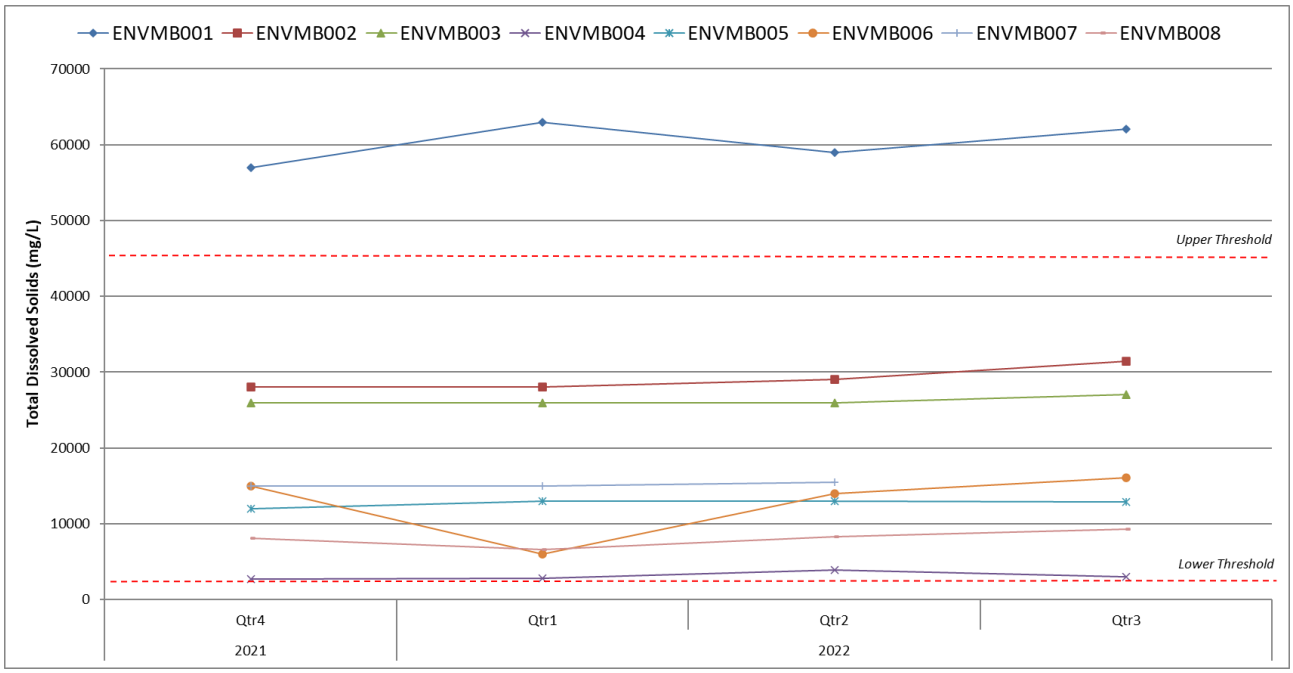


Figure 4 Total Dissolved Solids in Environmental Monitoring Bores Q4 2021 – Q3 2022

2.2.3 Weak Acid Dissociable Cyanide

Weak acid dissociable (WAD) cyanide results are presented below in Figure 5 and Table 2 (attached):

- WAD cyanide was not reported above the laboratory limit of reporting (LOR) in bores ENVMB003-008;
- WAD CN was reported at concentrations between 0.034 mg/L and LOR at ENVMB001 during the reporting period, which is a comparable to 2021 results. This monitoring bore is directly down-hydraulic gradient from the TSF and within the cone of depression of abstraction bores in this area;
- WAD CN was reported at concentrations between 0.006 mg/L and LOR at ENVMB002 during the reporting period however this remains consistent with previously reported values for this bore.

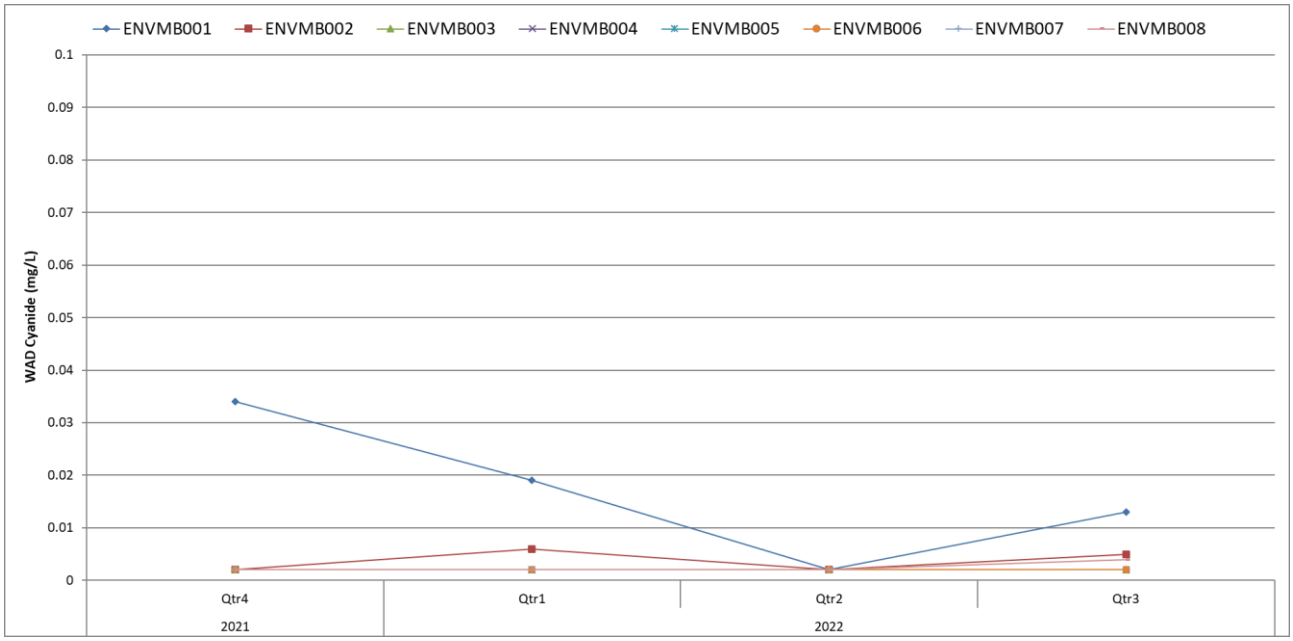


Figure 5 WAD Cyanide in Environmental Monitoring Bores Q4 2021 – Q3 2022

2.2.4 Major Cations and Anions

Quarterly monitoring results for major ionic species are presented in Table 2:

- Calcium, chloride, magnesium, potassium, and sodium were generally reported above the upper trigger value at ENVMB001. This is reflected in the higher TDS values reported in this bore in Section 2.2.2;
- Potassium, sodium, chloride, sulphate and Bicarbonate were generally depleted and reported below the lower trigger value at ENVMB004, also in agreement with the TDS values reported above.

2.2.5 Heavy Metals

Quarterly monitoring results for heavy metals are presented in Table 2:

- Cobalt was reported above the upper trigger limit at ENVMB001, ENVMB002 and ENVMB003 in most monitoring events;
- Nickel was reported above the upper trigger limit at most monitoring locations except for ENVMB004 and ENVMB008;
- ENVMB004, ENVMB007 and ENVMB008 were depleted in boron at concentrations below the lower trigger value in all monitoring events.

3 Discussion and Conclusions

The operation of the TSF has been observed to have had a localised impact on groundwater quality during the reporting period, in particularly at ENVMB001. Localised changes in groundwater quality are not considered to have had any detrimental impact to environmental values. The existing groundwater environment is typically saline to hypersaline and has no known beneficial users. Monitoring of vegetation condition in proximity to operational areas has not identified any impacts to vegetation health associated with changes in groundwater quality.

To mitigate potential impacts to environmental values, AGAA implemented a Seepage Mitigation Project in 2016 – refer to Section 4.2 of the CAR for additional information. AGAA will continue to monitor groundwater across the TGM and will implement additional mitigation actions as and when required to minimise the environmental impacts of the operation.

Table 1 Groundwater Characteristics

10% Variance from Baseline	Lower Trigger Value	5.85	5040	2943	-
	Upper Trigger Value	8.8	54670	45210	0.004
Data Point	**Date**	**pH (pH units)**	**EC (µS/cm)**	**TDS (mg/L)**	**WAD CN (mg/L)**
ENVMB001	24/11/2021	7.2	82000	57000	0.034
ENVMB001	2/02/2022	7.5	80000	63000	0.019
ENVMB001	12/05/2022	7.2	83000	59000	<0.004
ENVMB001	7/08/2022	7.5	77700	62100	0.013
ENVMB002	25/11/2021	7.9	39000	28000	<0.004
ENVMB002	2/02/2022	7.5	40000	28000	0.006
ENVMB002	12/05/2022	7.4	39000	29000	<0.004
ENVMB002	7/08/2022	7.55	42200	31400	0.005
ENVMB003	24/11/2021	7.7	36000	26000	<0.004
ENVMB003	2/02/2022	7.7	36000	26000	<0.004
ENVMB003	12/05/2022	7.6	35000	26000	<0.004
ENVMB003	6/08/2022	7.83	37400	27100	<0.004
ENVMB004	24/11/2021	8.2	4900	2700	<0.004
ENVMB004	5/02/2022	7.9	4600	2800	<0.004
ENVMB004	12/05/2022	7.9	6500	3900	<0.004
ENVMB004	6/08/2022	7.99	4810	2990	<0.004
ENVMB005	24/11/2021	8.4	20000	12000	<0.004
ENVMB005	5/02/2022	7.7	20000	13000	<0.004
ENVMB005	12/05/2022	7.8	19000	13000	<0.004
ENVMB005	8/08/2022	7.85	20400	12900	<0.004
ENVMB006	24/11/2021	8.2	21000	15000	<0.004
ENVMB006	6/02/2022	7.8	9200	6000	<0.004
ENVMB006	12/05/2022	7.6	21000	14000	<0.004
ENVMB006	8/08/2022	7.69	22100	16100	<0.004
ENVMB007	25/11/2021	8.2	21000	15000	<0.004
ENVMB007	6/02/2022	7.7	21000	15000	<0.004
ENVMB007	25/06/2022	7.6	21700	15500	<0.004
ENVMB007	*Decommissioned*				
ENVMB008	25/11/2021	8	13000	8100	<0.004
ENVMB008	6/02/2022	7.8	10000	6600	<0.004
ENVMB008	12/05/2022	7.6	12000	8300	<0.004
ENVMB008	8/08/2022	7.76	12900	9280	0.004

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

µS/cm = microsiemens per centimetre

mg/L = milligrams per litre

Table 2 Groundwater Water Quality Analytical Results

10% Variance from Baseline		Lower Trigger Value							135				3.51	
		Upper Trigger Value				0.55			682				12.1	0.0055
Sample Point	Date	Data Source	Ammonia as N by DA (mg/L)	Ammonia Nitrogen. NH3 as N (mg/L)	Antimony (Sb) - Dissolved (mg/L)	Arsenic (As) - Dissolved (mg/L)	Barium (Ba) - Dissolved (mg/L)	Beryllium (Be) - Dissolved (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as HCO3 (mg/L)	Biochemical Oxgyen Demand (CBOD5) (mg/L)	Biochemical Oxgyen Demand (mg/L)	Boron (B) - Dissolved (mg/L)	Cadmium (Cd) - Dissolved (mg/L)
ENVMB001	24/11/2021	SGS Perth Environmental Laboratory		0.05	<0.02	<0.02	0.06	<0.02	130		<5		9	<0.002
ENVMB001	2/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.02	<0.02	0.05	<0.02	190		<5		8.8	<0.002
ENVMB001	12/05/2022	SGS Perth Environmental Laboratory		0.11	<0.02	<0.02	0.066	<0.02	180	220	<5		8.5	<0.002
ENVMB001	7/08/2022	ALS Global Perth	0.09		<0.010	<0.010	0.054	<0.010	168			<2	10	0.0015
ENVMB002	25/11/2021	SGS Perth Environmental Laboratory		<0.05	<0.01	<0.01	0.028	<0.01	200		<5		8.7	0.0014
ENVMB002	2/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.01	<0.01	0.021	<0.01	190		<5		8.3	<0.001
ENVMB002	12/05/2022	SGS Perth Environmental Laboratory		<0.05	<0.01	<0.01	0.028	<0.01	180	220	<5		8.2	0.001
ENVMB002	7/08/2022	ALS Global Perth	0.02		<0.005	<0.005	0.026	<0.005	163			<2	8.85	0.0011
ENVMB003	24/11/2021	SGS Perth Environmental Laboratory		0.05	<0.01	<0.01	0.056	<0.01	210		<5		10	0.0017
ENVMB003	2/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.01	<0.01	0.047	<0.01	200		<5		9.3	0.0013
ENVMB003	12/05/2022	SGS Perth Environmental Laboratory		<0.05	<0.01	<0.01	0.057	<0.01	180	220	<5		9	0.0016
ENVMB003	6/08/2022	ALS Global Perth	0.03		<0.005	<0.005	0.058	<0.005	173			<2	9.22	0.0016
ENVMB004	24/11/2021	SGS Perth Environmental Laboratory		<0.05	<0.001	<0.001	0.23	<0.001	110		<5		1.1	<0.0001
ENVMB004	5/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.001	<0.001	0.24	<0.001	130	160	<5		0.91	<0.0001
ENVMB004	12/05/2022	SGS Perth Environmental Laboratory		<0.05	<0.002	<0.002	0.16	<0.002	130	160	<5		1.8	<0.0002
ENVMB004	6/08/2022	ALS Global Perth	0.03		<0.001	<0.001	0.239	<0.001	88			<2	0.97	<0.0001
ENVMB005	24/11/2021	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.036	<0.005	540		<5		8.1	<0.0005
ENVMB005	5/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.029	<0.005	570	690	<5		7.3	<0.0005
ENVMB005	12/05/2022	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.035	<0.005	520	630	<5		7.5	<0.0005
ENVMB005	8/08/2022	ALS Global Perth	<0.01		<0.002	<0.002	0.032	<0.002	379			<2	8.74	<0.0002
ENVMB006	24/11/2021	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.031	<0.005	400		<5		5.4	<0.0005
ENVMB006	6/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.18	<0.005	200	250	<5		1.9	<0.0005
ENVMB006	12/05/2022	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.028	<0.005	390	470	<5		5.1	<0.0005
ENVMB006	8/08/2022	ALS Global Perth	<0.01		<0.002	<0.002	0.027	<0.002	304			<2	5.9	0.0004
ENVMB007	25/11/2021	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.057	<0.005	450		<5		5.1	<0.0005
ENVMB007	6/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.045	<0.005	430	520	<5		4.7	<0.0005
ENVMB007	25/06/2022	ALS Global Perth	<0.02		<0.002	<0.002	0.062	<0.002	420			2	4.48	0.0003
ENVMB007		*Decommissioned*												
ENVMB008	25/11/2021	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.055	<0.005	230		<5		2.8	<0.0005
ENVMB008	6/02/2022	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.075	<0.005	180	230	<5		2	<0.0005
ENVMB008	12/05/2022	SGS Perth Environmental Laboratory		<0.05	<0.005	<0.005	0.05	<0.005	190	230	<5		3.6	<0.0005
ENVMB008	8/08/2022	ALS Global Perth	<0.01		<0.001	<0.001	0.045	<0.001	132			<2	2.52	<0.0001

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

mg/L = milligrams per litre

10% Variance from Baseline		Lower Trigger Value	56.7				2250							
		Upper Trigger Value	704				18700				0.0132	0.11		
Sample Point	Date	Data Source	Calcium (Ca) - Dissolved (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CO3 (mg/L)	Chemical Oxygen Demand (mg/L)	Chloride (Cl-) in water (mg/L)	Chromium (Cr) - Dissolved (mg/L)	Hexavalent Chromium (Dissolved) (mg/L)	Trivalent Chromium (Dissolved) (mg/L)	Cobalt (Co) - Dissolved (mg/L)	Copper (Cu) - Dissolved (mg/L)	Cyanide (CN) - Free (mg/L)	Cyanide (CN) - Total (mg/L)
ENVMB001	24/11/2021	SGS Perth Environmental Laboratory	1800	<5		<200	31000		<0.001	<0.05	0.89	0.059	0.022	0.3
ENVMB001	2/02/2022	SGS Perth Environmental Laboratory	1900	<5		<200	35000		<0.001	<0.05	0.66	<0.02	0.022	0.26
ENVMB001	12/05/2022	SGS Perth Environmental Laboratory	1900		<1	280	33000		<0.001	<0.05	0.93	<0.02	<0.004	0.32
ENVMB001	7/08/2022	ALS Global Perth	2040	<1		<200	29200	<0.010	<0.01	<0.01	0.956	0.014	0.011	0.336
ENVMB002	25/11/2021	SGS Perth Environmental Laboratory	520	<5		<100	13000		0.01	<0.05	0.25	0.012	<0.004	0.07
ENVMB002	2/02/2022	SGS Perth Environmental Laboratory	520	<5		<100	14000		0.01	<0.05	0.27	0.01	0.008	0.055
ENVMB002	12/05/2022	SGS Perth Environmental Laboratory	510		<1	67	14000		0.011	<0.05	0.24	<0.01	<0.004	0.06
ENVMB002	7/08/2022	ALS Global Perth	698	<1		<200	14700	<0.005	<0.01	<0.01	0.279	0.007	0.005	0.065
ENVMB003	24/11/2021	SGS Perth Environmental Laboratory	340	<5		<100	12000		0.01	<0.05	0.055	0.035	<0.004	0.031
ENVMB003	2/02/2022	SGS Perth Environmental Laboratory	330	<5		<100	12000		0.011	<0.05	0.066	0.012	0.004	0.029
ENVMB003	12/05/2022	SGS Perth Environmental Laboratory	330		<1	110	12000		0.011	<0.05	0.069	<0.01	<0.004	0.03
ENVMB003	6/08/2022	ALS Global Perth	400	<1		<200	12500	<0.005	<0.01	<0.01	0.054	0.006	<0.004	0.017
ENVMB004	24/11/2021	SGS Perth Environmental Laboratory	250	<5		<10	1400		<0.001	<0.05	<0.001	0.002	<0.004	0.005
ENVMB004	5/02/2022	SGS Perth Environmental Laboratory	230		<1	160	1400		<0.001	<0.05	<0.001	0.001	<0.004	<0.004
ENVMB004	12/05/2022	SGS Perth Environmental Laboratory	310		<1	16	1900		<0.001	<0.05	<0.002	0.003	<0.004	<0.004
ENVMB004	6/08/2022	ALS Global Perth	275	<1		136	1350	<0.001	<0.01	<0.01	<0.001	0.002	<0.004	<0.004
ENVMB005	24/11/2021	SGS Perth Environmental Laboratory	120	37		110	5600		0.008	<0.05	0.01	0.008	<0.004	0.011
ENVMB005	5/02/2022	SGS Perth Environmental Laboratory	110		<1	<50	5800		<0.001	<0.05	0.007	0.008	<0.004	0.005
ENVMB005	12/05/2022	SGS Perth Environmental Laboratory	110		<1	50	5600		0.009	<0.05	<0.005	<0.005	<0.004	<0.004
ENVMB005	8/08/2022	ALS Global Perth	125	<1		<50	7500	<0.002	<0.01	<0.01	0.003	0.006	<0.004	<0.004
ENVMB006	24/11/2021	SGS Perth Environmental Laboratory	410	<5		160	6400		0.005	<0.05	<0.005	<0.005	<0.004	<0.004
ENVMB006	6/02/2022	SGS Perth Environmental Laboratory	260		<1	55	2700		<0.001	<0.05	<0.005	0.006	<0.004	<0.004
ENVMB006	12/05/2022	SGS Perth Environmental Laboratory	410		<1	50	7000		0.005	<0.05	<0.005	0.006	<0.004	<0.004
ENVMB006	8/08/2022	ALS Global Perth	478	<1		<50	7350	<0.002	<0.01	<0.01	<0.002	0.007	<0.004	<0.004
ENVMB007	25/11/2021	SGS Perth Environmental Laboratory	420	<5		250	6300		<0.001	<0.05	<0.005	<0.005	<0.004	<0.004
ENVMB007	6/02/2022	SGS Perth Environmental Laboratory	380		<1	62	6600		<0.001	<0.05	<0.005	0.012	<0.004	<0.004
ENVMB007	25/06/2022	ALS Global Perth	550	<1		28	6810	<0.002	<0.01	<0.01	0.005	<0.002	<0.004	<0.004
ENVMB007		*Decommissioned*												
ENVMB008	25/11/2021	SGS Perth Environmental Laboratory	370	<5		<50	3600		0.005	<0.05	<0.005	<0.005	<0.004	<0.004
ENVMB008	6/02/2022	SGS Perth Environmental Laboratory	280		<1	23	2700		0.003	<0.05	<0.005	<0.005	<0.004	<0.004
ENVMB008	12/05/2022	SGS Perth Environmental Laboratory	380		<1	37	3700		0.002	<0.05	<0.005	<0.005	<0.004	0.09
ENVMB008	8/08/2022	ALS Global Perth	382	<1		<50	4190	0.002	<0.01	<0.01	<0.001	0.003	0.006	0.005

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

mg/L = milligrams per litre

10% Variance from Baseline		Lower Trigger Value												
		Upper Trigger Value	0.004							<5			1.98	0.33
Sample Point	Date	Data Source	Cyanide (CN) - WAD (mg/L)	Dissolved Oxygen (mg/L)	Filterable Reactive Phosphorus (mg/L)	Fluoride (F) in water by ISE (mg/L)	Fluoride (F) in water (mg/L)	Hardness as CaCO3 - Total (mg/L)	Hardness as CaCO3 (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Hydroxide Alkalinity as OH (mg/L)	Ionic Balance (%)	Iron (Fe) - Dissolved (mg/L)	Lead (Pb) - Dissolved (mg/L)
ENVMB001	24/11/2021	SGS Perth Environmental Laboratory	0.034	7.7	0.085	<2		14000		<5			0.13	<0.02
ENVMB001	2/02/2022	SGS Perth Environmental Laboratory	0.019	7.1		<2		15000		<5			<0.1	<0.02
ENVMB001	12/05/2022	SGS Perth Environmental Laboratory	<0.004	7.8	0.006	4.1		15000		<5	<5		0.12	<0.02
ENVMB001	7/08/2022	ALS Global Perth	0.013	8.4			0.7		16500	<1		6.76	<0.50	<0.010
ENVMB002	25/11/2021	SGS Perth Environmental Laboratory	<0.004	8	0.016	0.8		7400		<5			2.5	0.01
ENVMB002	2/02/2022	SGS Perth Environmental Laboratory	0.006	7.1		0.7		7400		<5			<0.05	<0.01
ENVMB002	12/05/2022	SGS Perth Environmental Laboratory	<0.004	7.5	0.015	1.2		7500		<5	<5		<0.05	<0.01
ENVMB002	7/08/2022	ALS Global Perth	0.005	9.2			0.5		9110	<1		6.58	<0.25	<0.005
ENVMB003	24/11/2021	SGS Perth Environmental Laboratory	<0.004	7.6	0.066	1.1		5700		<5			0.076	<0.01
ENVMB003	2/02/2022	SGS Perth Environmental Laboratory	<0.004	8.3		1.2		5600		<5			<0.05	<0.01
ENVMB003	12/05/2022	SGS Perth Environmental Laboratory	<0.004	9.1	0.041	1.3		5700		<5	<5		<0.05	<0.01
ENVMB003	6/08/2022	ALS Global Perth	<0.004	10			0.8		6020	<1		1.29	<0.25	<0.005
ENVMB004	24/11/2021	SGS Perth Environmental Laboratory	<0.004	7.7	<0.005	0.3		1200		<5			<0.005	<0.001
ENVMB004	5/02/2022	SGS Perth Environmental Laboratory	<0.004	8	<0.005	0.3		1100		<5	<5		<0.005	<0.001
ENVMB004	12/05/2022	SGS Perth Environmental Laboratory	<0.004	9	0.011	0.3		2100		<5	<5		<0.01	<0.002
ENVMB004	6/08/2022	ALS Global Perth	<0.004	10.2			0.4		1320	<1		4.83	<0.05	<0.001
ENVMB005	24/11/2021	SGS Perth Environmental Laboratory	<0.004	7.7	0.073	0.7		1700		<5			<0.025	<0.005
ENVMB005	5/02/2022	SGS Perth Environmental Laboratory	<0.004	7.9	0.078	0.7		1600		<5	<5		<0.025	<0.005
ENVMB005	12/05/2022	SGS Perth Environmental Laboratory	<0.004	7.3	0.073	0.8		1600		<5	<5		<0.025	<0.005
ENVMB005	8/08/2022	ALS Global Perth	<0.004	8.3			0.6		1770	<1		8.05	<0.10	<0.002
ENVMB006	24/11/2021	SGS Perth Environmental Laboratory	<0.004	8.6	0.033	<0.5		4200		<5			<0.025	<0.005
ENVMB006	6/02/2022	SGS Perth Environmental Laboratory	<0.004	6.5	0.54	0.3		1800		<5	<5		<0.025	<0.005
ENVMB006	12/05/2022	SGS Perth Environmental Laboratory	<0.004	5.4	0.039	0.6		4300		<5	<5		<0.025	<0.005
ENVMB006	8/08/2022	ALS Global Perth	<0.004	9.8			0.4		4600	<1		0.06	<0.10	<0.002
ENVMB007	25/11/2021	SGS Perth Environmental Laboratory	<0.004	8.5	0.027	<0.5		3900		<5			<0.025	<0.005
ENVMB007	6/02/2022	SGS Perth Environmental Laboratory	<0.004	7.7	0.47	<0.5		3800		<5	<5		<0.025	<0.005
ENVMB007	25/06/2022	ALS Global Perth	<0.004	8.8			0.3		4740	<1		2.63	<0.10	<0.002
ENVMB007		*Decommissioned*												
ENVMB008	25/11/2021	SGS Perth Environmental Laboratory	<0.004	8.9	0.04	<0.3		2900		<5			<0.025	<0.005
ENVMB008	6/02/2022	SGS Perth Environmental Laboratory	<0.004	8.8	0.086	<0.3		2100		<5	<5		<0.025	<0.005
ENVMB008	12/05/2022	SGS Perth Environmental Laboratory	<0.004	8	0.039	<0.5		3400		<5	<5		<0.025	<0.005
ENVMB008	8/08/2022	ALS Global Perth	0.004	10			0.2		2890	<1		2.79	<0.05	<0.001

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

mg/L = milligrams per litre

10% Variance from Baseline		Lower Trigger Value	117				<10	<10						51.3
		Upper Trigger Value	2090	4.07		0.022	176	176						924
Sample Point	Date	Data Source	Magnesium (Mg) - Dissolved (mg/L)	Manganese (Mn) - Dissolved (mg/L)	Mercury (Hg) - Dissolved (mg/L)	Nickel (Ni) - Dissolved (mg/L)	Nitrate as N by DA (mg/L)	Nitrate Nitrogen. NO3 as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Nitrite as N (mg/L)	Nitrite Nitrogen. NO2 as N (mg/L)	Phosphate as P by DA (mg/L)	Phosphorus (P) as PO4 (mg/L)	Potassium (K) - Dissolved (mg/L)
ENVMB001	24/11/2021	SGS Perth Environmental Laboratory	2400	1.4	0.00064	0.02		12			<0.05			970
ENVMB001	2/02/2022	SGS Perth Environmental Laboratory	2400	2	0.00049	<0.02		12			<0.05		0.02	1000
ENVMB001	12/05/2022	SGS Perth Environmental Laboratory	2500	3	0.00038	0.022		13			<0.05			930
ENVMB001	7/08/2022	ALS Global Perth	2770	2.01	0.0008	0.052	15.1		15.1	0.03				1110
ENVMB002	25/11/2021	SGS Perth Environmental Laboratory	1500	0.16	0.0014	0.027		26			<0.05			440
ENVMB002	2/02/2022	SGS Perth Environmental Laboratory	1500	0.15	0.0013	0.017		26			<0.05		0.07	470
ENVMB002	12/05/2022	SGS Perth Environmental Laboratory	1500	0.13	0.0011	0.032		26			<0.05			440
ENVMB002	7/08/2022	ALS Global Perth	1790	0.143	0.0006	0.038	25.6		25.6	<0.01				569
ENVMB003	24/11/2021	SGS Perth Environmental Laboratory	1200	0.1	<0.00005	0.054		24			<0.05			420
ENVMB003	2/02/2022	SGS Perth Environmental Laboratory	1200	0.031	<0.00005	0.06		27			<0.05		0.21	430
ENVMB003	12/05/2022	SGS Perth Environmental Laboratory	1200	0.057	<0.00005	0.1		28			<0.05			410
ENVMB003	6/08/2022	ALS Global Perth	1220	0.04	<0.0001	0.071	25.2		25.2	<0.01				468
ENVMB004	24/11/2021	SGS Perth Environmental Laboratory	150	<0.001	<0.00005	0.003		19			<0.05			50
ENVMB004	5/02/2022	SGS Perth Environmental Laboratory	130	<0.001	<0.00005	0.003		18			<0.05			46
ENVMB004	12/05/2022	SGS Perth Environmental Laboratory	310	<0.002	<0.00005	0.007		18			<0.05			64
ENVMB004	6/08/2022	ALS Global Perth	155	0.002	<0.0001	0.003	20.9		20.9	<0.01				54
ENVMB005	24/11/2021	SGS Perth Environmental Laboratory	340	0.022	<0.00005	0.011		30			<0.05			210
ENVMB005	5/02/2022	SGS Perth Environmental Laboratory	320	0.02	<0.00005	0.036		29			<0.05			200
ENVMB005	12/05/2022	SGS Perth Environmental Laboratory	330	0.01	<0.00005	0.007		32			<0.05			200
ENVMB005	8/08/2022	ALS Global Perth	355	0.002	<0.0001	0.01	31.2		31.2	<0.01			0.32	204
ENVMB006	24/11/2021	SGS Perth Environmental Laboratory	780	0.021	<0.00005	0.014		3.4			<0.05			170
ENVMB006	6/02/2022	SGS Perth Environmental Laboratory	280	<0.005	<0.00005	0.011		15			<0.05			72
ENVMB006	12/05/2022	SGS Perth Environmental Laboratory	790	<0.005	<0.00005	0.025		4.9			<0.05			170
ENVMB006	8/08/2022	ALS Global Perth	826	<0.002	<0.0001	0.015	2.91		2.91	<0.01			0.1	169
ENVMB007	25/11/2021	SGS Perth Environmental Laboratory	690	0.31	<0.00005	0.014		0.23			<0.05			150
ENVMB007	6/02/2022	SGS Perth Environmental Laboratory	690	0.28	<0.00005	0.028		1.7			<0.05			150
ENVMB007	25/06/2022	ALS Global Perth	818	1.39	<0.0001	0.008	0.04		0.04	<0.01		0.41	0.13	162
ENVMB007		*Decommissioned*												
ENVMB008	25/11/2021	SGS Perth Environmental Laboratory	480	0.024	<0.00005	0.006		9.8			<0.05			77
ENVMB008	6/02/2022	SGS Perth Environmental Laboratory	330	<0.005	<0.00005	<0.005		11			<0.05			57
ENVMB008	12/05/2022	SGS Perth Environmental Laboratory	600	<0.005	<0.00005	0.016		8.9			<0.05			100
ENVMB008	8/08/2022	ALS Global Perth	470	<0.001	<0.0001	0.009	10.1		10.1	<0.01			0.12	80

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

mg/L = milligrams per litre

10% Variance from Baseline		Lower Trigger Value		494.1		108					
		Upper Trigger Value		10670		5070					0.154
Sample Point	Date	Data Source	Selenium (Se) - Dissolved (mg/L)	Sodium (Na) - Dissolved (mg/L)	Sulfate / Chloride Ratio	Sulphate (SO4) in water (mg/L)	Temperature (°C)	Total Alkalinity as CaCO3 (mg/L)	Total Phosphorus as P (mg/L)	Total Suspended Solids (TSS) (mg/L)	Zinc (Zn) - Dissolved (mg/L)
ENVMB001	24/11/2021	SGS Perth Environmental Laboratory	<0.02	13000	0.1	3500	19.7	130		<5	0.21
ENVMB001	2/02/2022	SGS Perth Environmental Laboratory	<0.02	14000	<0.1	3300	23.6	190		9	<0.1
ENVMB001	12/05/2022	SGS Perth Environmental Laboratory	<0.02	13000	0.1	3400	19.2	180		16	0.25
ENVMB001	7/08/2022	ALS Global Perth	<0.10	15300	0.11	3220		168	0.16	12	0.231
ENVMB002	25/11/2021	SGS Perth Environmental Laboratory	0.014	6500	0.3	3600	19.4	200		22	0.092
ENVMB002	2/02/2022	SGS Perth Environmental Laboratory	0.022	6800	0.2	3300	23.6	190		8	0.067
ENVMB002	12/05/2022	SGS Perth Environmental Laboratory	<0.01	6400	0.2	3400	19.9	180		8	0.19
ENVMB002	7/08/2022	ALS Global Perth	<0.05	8110	0.208	3060		163	0.04	<5	0.122
ENVMB003	24/11/2021	SGS Perth Environmental Laboratory	0.014	6400	0.3	3700	19.6	210		17	0.15
ENVMB003	2/02/2022	SGS Perth Environmental Laboratory	0.026	6800	0.3	3400	23.4	200		13	0.12
ENVMB003	12/05/2022	SGS Perth Environmental Laboratory	0.017	6000	0.3	3500	19.5	180		<5	0.27
ENVMB003	6/08/2022	ALS Global Perth	<0.05	6900	0.25	3140		173	0.18	<5	0.21
ENVMB004	24/11/2021	SGS Perth Environmental Laboratory	<0.001	420	<0.1	95	19.7	110		8	0.009
ENVMB004	5/02/2022	SGS Perth Environmental Laboratory	<0.001	360	<0.1	84	20.5	130		<5	0.011
ENVMB004	12/05/2022	SGS Perth Environmental Laboratory	0.005	1000	0.2	340	19.8	130		5	0.065
ENVMB004	6/08/2022	ALS Global Perth	<0.01	411	0.06	81		88	0.01	<5	0.052
ENVMB005	24/11/2021	SGS Perth Environmental Laboratory	0.008	3700	0.4	2000	19.7	580		15	<0.025
ENVMB005	5/02/2022	SGS Perth Environmental Laboratory	0.016	3600	0.3	1700	20.7	570		8	0.072
ENVMB005	12/05/2022	SGS Perth Environmental Laboratory	0.011	3700	0.3	1800	20.8	520		<5	0.086
ENVMB005	8/08/2022	ALS Global Perth	<0.02	4110	0.248	1860		379	0.1	<5	0.074
ENVMB006	24/11/2021	SGS Perth Environmental Laboratory	0.006	3200	0.4	2300	20.2	400		18	0.035
ENVMB006	6/02/2022	SGS Perth Environmental Laboratory	<0.005	1000	0.2	610	20.6	200		12	0.068
ENVMB006	12/05/2022	SGS Perth Environmental Laboratory	0.008	3400	0.3	2200	20.8	390		<5	0.15
ENVMB006	8/08/2022	ALS Global Perth	<0.02	3670	0.275	2020		304	0.03	<5	0.131
ENVMB007	25/11/2021	SGS Perth Environmental Laboratory	<0.005	3200	0.4	2300	20	450		6	0.029
ENVMB007	6/02/2022	SGS Perth Environmental Laboratory	<0.005	3000	0.3	2200	20.6	430		26	0.12
ENVMB007	25/06/2022	ALS Global Perth	<0.02	3800	0.354	2410		420		68	0.017
ENVMB007		*Decommissioned*									
ENVMB008	25/11/2021	SGS Perth Environmental Laboratory	0.012	1700	0.4	1300	19.6	230		<5	<0.025
ENVMB008	6/02/2022	SGS Perth Environmental Laboratory	0.012	1300	0.4	1100	20.6	180		<5	0.029
ENVMB008	12/05/2022	SGS Perth Environmental Laboratory	0.008	2200	0.4	1400	20.2	190		<5	0.12
ENVMB008	8/08/2022	ALS Global Perth	0.01	1800	0.289	1210		132	0.04	<5	0.038

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

mg/L = milligrams per litre

Appendix D – Stormwater Monitoring Summary

MEMORANDUM

Date: **02 October 2022**

To: TGM Environment Team

From: Nick Courts

Subject: 2021 / 2022 Stormwater Monitoring Results: MS839 CAR

Stormwater (previously referred to as Surface Water) quality monitoring is undertaken in accordance with the Tropicana Gold Mine Environmental Monitoring Strategy, with samples collected following significant rainfall events of over 20 millimetres (mm) in 24 hours, or when stormwater is observed in collection locations.

Stormwater monitoring locations have been established in and around the TGM operational area. As the natural topography immediately surrounding TGM does not contain any surface water features, monitoring of run-off from stormwater events is restricted to potential water collection areas within the mine disturbance footprint.

Event sampling was undertaken on one occasion during the reporting period following a significant rainfall event:

- 9th November 2021 (24.2 mm)

The following locations were sampled (Figure 1) if they contained water during the event.

Monitoring Point	Description
TGMSW01	Diversion Drain - Northern side of TSF
TGMSW02	Diversion Drain - Western side of TSF
TGMSW03	Diversion Drain - Southern side of TSF
TGMSW04	Diversion Drain - Western side of Geology Laydown
TGMSW05	Diversion Drain - Village Access Road
TGMSW06	Diversion Drain - Fine Ore Stockpile
TGMSW07	Diversion Drain - Fine Ore Stockpile
TGMSW08	Diversion Drain - Eastern side of Twin Turkey Nest
TGMSW09	Low Point within Active Mining Area
TGMSW10	Low Point within Active Mining Area

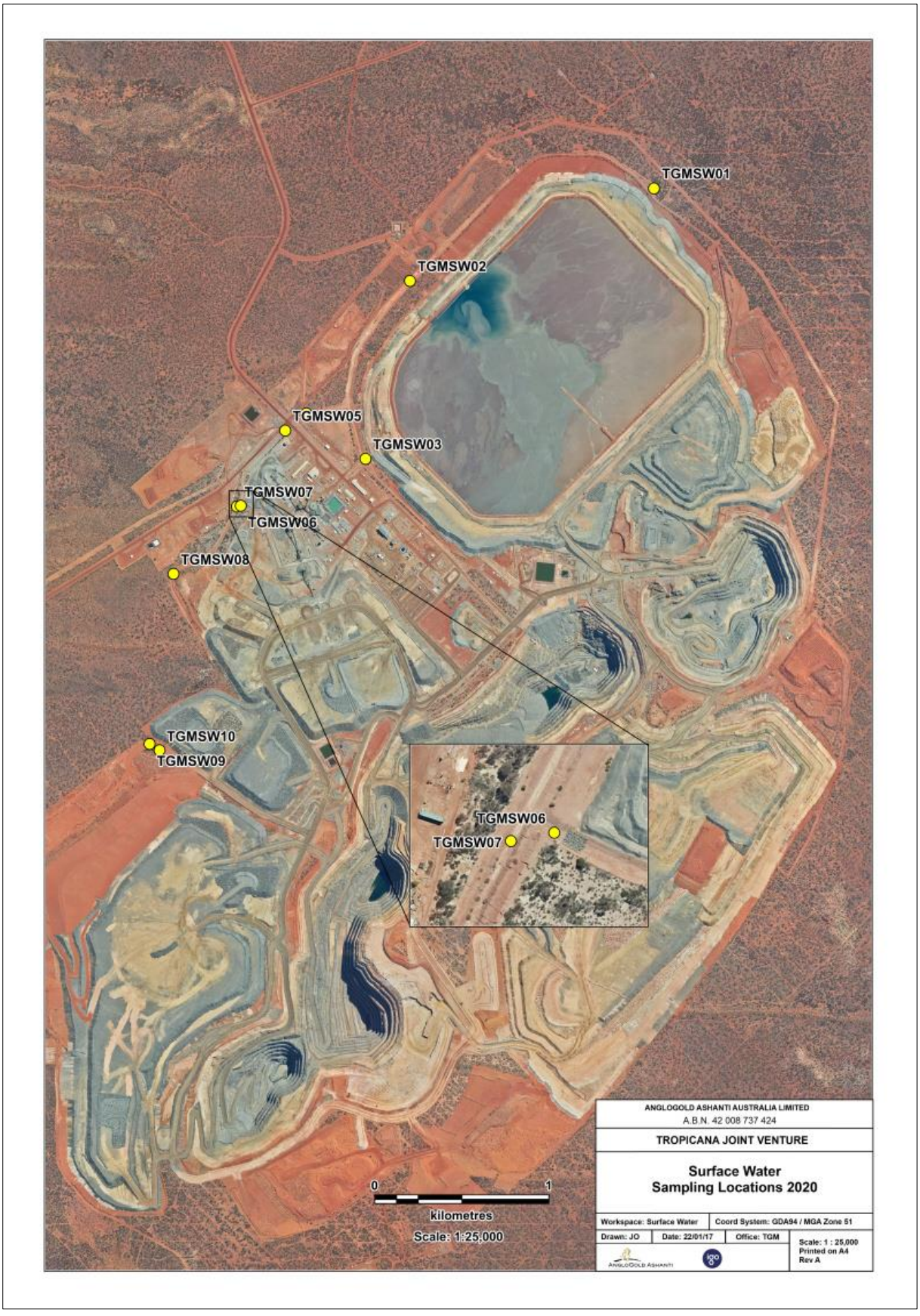


Figure 1 Stormwater Sampling Locations

1 2021 / 2022 Stormwater Monitoring Results

Results obtained from stormwater sampling conducted during the reporting period are discussed briefly below and provided in Table 1 (attached).

Note: During the November 2021 sampling TGMSW01 was found to have to little volume to collect a sample for analysis.

1.1 Physical Parameters

- pH was neutral at all locations sampled in the monitoring event.
- Total Dissolved Solids (TDS) were in the fresh to saline range. This is to be expected as hypersaline water is used in dust suppression in cleared areas, therefore salts would be mobilised during rain events;
- Total Suspended Solids (TSS) were generally low across all locations showing that stormwater during the event was not moving much material.

1.2 Hydrocarbons

- The volatile fractions of Total Recoverable Hydrocarbons (TRH) C6 – C10 mg/L recorded across the sampling locations returned results less than the limit of reporting (LOR).
- The semi-volatile fractions of Total Recoverable Hydrocarbons (TRH) >C10 – C40 mg/L recorded across the sampling locations returned results less than the limit of reporting (LOR).

Table 1 Stormwater Laboratory Results

			Physical Parameters				Major Anions and Cations									
Rain Event	Sample Point	Date	pH (pH units)	Electrical Conductivity (EC) (µS/cm)	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)	Carbonate Alkalinity as CO3 (mg/L)	Bicarbonate Alkalinity as HCO3 (mg/L)	Hardness as CaCO3 - Total (mg/L)	Chloride (Cl-) in water (mg/L)	Sulphate (SO4) in water (mg/L)	Nitrate as NO3 (mg/L)	Calcium (Ca) - Total (mg/L)	Magnesium (Mg) - Total (mg/L)	Potassium (K) - Total (mg/L)	Sodium (Na) - Total (mg/L)
24.2 mm	TGMSW02	20/11/2021	7.5	8500	5000	9	<1	39	1100	2400	750	*	130	190	84	1300
	TGMSW03	20/11/2021	7.4	15000	9500	64	<1	40	2000	4600	810	*	380	260	87	2300
	TGMSW04	20/11/2021	7.4	2700	1500	20	<1	30	310	730	180	*	85	24	15	380
	TGMSW05	20/11/2021	7.4	5200	3100	5	<1	29	620	1500	330	*	160	55	27	790
	TGMSW06	20/11/2021	7.4	5000	2900	13	<1	22	570	1400	320	*	140	50	25	750
	TGMSW07	20/11/2021	7.4	5100	3000	15	<1	23	570	1500	320	*	150	51	26	770
	TGMSW08	20/11/2021	7.8	85	290	180	<1	59	51	6	5	*	13	4.7	4.6	4
	TGMSW09	20/11/2021	7.5	2800	1700	11	<1	30	320	760	240	*	81	29	14	410
	TGMSW10	20/11/2021	7.6	2800	1700	8	<1	28	330	740	240	*	82	30	15	410

			Heavy Metals										Cyanides		
Rain Event	Sample Point	Date	Aluminium (Al) - Total (mg/L)	Arsenic (As) - Total (mg/L)	Cadmium (Cd) - Total (mg/L)	Chromium (Cr) - Total (mg/L)	Copper (Cu) - Total (mg/L)	Iron (Fe) - Total (mg/L)	Lead (Pb) - Total (mg/L)	Manganese (Mn) - Total (mg/L)	Mercury (Hg) - Total (mg/L)	Nickel (Ni) - Total (mg/L)	Cyanide (CN) - Free (mg/L)	Cyanide (CN) - Total (mg/L)	Cyanide (CN) - WAD (mg/L)
24.2 mm	TGMSW02	20/11/2021	0.62	<0.005	<0.0005	<0.005	<0.005	0.43	<0.005	0.067	<0.00005	<0.005	<0.004	0.006	0.005
	TGMSW03	20/11/2021	1.3	<0.005	0.0014	0.008	0.006	3.1	<0.005	0.094	<0.00005	0.007	<0.004	<0.004	<0.004
	TGMSW04	20/11/2021	2.2	<0.001	0.0001	0.004	0.003	1.8	0.002	0.068	<0.00005	0.002	<0.004	<0.004	<0.004
	TGMSW05	20/11/2021	0.38	<0.001	0.0003	0.001	0.002	0.32	<0.001	0.065	<0.00005	0.002	<0.004	0.006	<0.004
	TGMSW06	20/11/2021	0.87	<0.001	0.0004	0.002	0.002	0.64	0.001	0.075	<0.00005	0.002	<0.004	0.006	<0.004
	TGMSW07	20/11/2021	0.66	<0.001	0.0004	0.002	0.003	0.51	0.001	0.073	<0.00005	0.002	<0.004	0.006	<0.004
	TGMSW08	20/11/2021	16	0.003	<0.0001	0.04	0.014	21	0.016	0.12	<0.00005	0.016	<0.004	<0.004	<0.004
	TGMSW09	20/11/2021	0.96	<0.001	0.0001	0.002	0.001	0.59	<0.001	0.032	<0.00005	0.001	<0.004	<0.004	<0.004
	TGMSW10	20/11/2021	0.87	<0.001	0.0001	0.002	0.001	0.49	<0.001	0.03	<0.00005	0.001	<0.004	<0.004	<0.004

			Total Recoverable Hydrocarbons									
Rain Event	Sample Point	Date	Benzene (mg/L)	TRH C6-C10 less BTEX (F1) (mg/L)	TRH >C16-C34 (F3) (mg/L)	TRH >C34-C40 (F4) (mg/L)	TRH C6-C9 (mg/L)	TRH C6-C10 (mg/L)	TRH C10-C14 (mg/L)	TRH C15-C28 (mg/L)	TRH C29-C36 (mg/L)	TRH C6-C36 Total (mg/L)
24.2 mm	TGMSW02	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW03	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW04	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW05	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW06	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW07	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW08	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW09	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*
	TGMSW10	20/11/2021	<0.0005	<0.05	<0.50	<0.50	<0.04	<0.05	<0.05	<0.20	<0.20	*

*	Not received from SGS

Appendix E – Water Quality Monitoring Method Audit

Tropicana Gold Mine

TGM Water Monitoring Methodology Internal Audit - Environmental Compliance

Audited by:	Nick Courts	**Date of Audit:**	02/10/2022
Supervisor:	Leonie Pradella		

1	Monitoring Preparation	Compliance (place x in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
1.1	Is there a record of the sampling site locations	X			Maps and shapefiles of the environmental monitoring bores and the Stormwater (previously referred to as Surface Water) collection points (sampling locations) are available. A workspace has also been created in MapInfo which indicates where all monitoring locations are and can also be utilised in the field. All monitoring bores are labelled with their unique ID.
1.2	Sampling device is calibrated prior to each monitoring event	X			Monitoring equipment is calibrated on site each quarter prior to the groundwater monitoring occurring. The water quality meter is sent for off-site calibration and servicing every six months. The calibration solution is checked each calibration against the expiry date and re-ordered if required. A quarterly calendar reminder has been set for the Environmental Officers to conduct this check.
1.3	Water quality parameter meter is calibrated prior to each monitoring event	X			
1.4	Field staff have had sufficient training and experience to undertake the sampling	X			A Verification of Competency (VOC) is conducted on all employees prior to being allowed to conduct field monitoring alone.
1.5	All equipment and field instruments are kept clean and in good working order	X			All equipment is stored within an air-conditioned sea container, in storage containers when not in use to avoid exposure to sunlight and dust. A monthly inspection on all equipment is conducted where probes checked and cleaned. All equipment is cleaned following all monitoring events.
1.6	Sampling protocols and procedures in place for field sampling, transport and storage	X			Detailed work instructions exist for the sampling, labelling, preservation, transport and storage of samples. Quality assurance and quality control procedures are built into the work instructions as well. Staff conducting monitoring are signed off as competent against all relevant work instructions prior to conducting the tasks unsupervised.
1.7	Procedures provide detailed descriptions for collecting, labelling, transporting and storing samples and the necessary ancillary field data.	X			
1.8	Specific procedures and protocols have been developed and specify the sample collection device, type of storage container, preservation procedures, type and numbers of quality control samples to be taken.	X			
1.9	Exact locations of sampling sites and any sub sites are recorded in the sampling protocol.	X			Sampling locations including maps, map info files and .gpx files of monitoring locations and the tracks to the monitoring locations.

1	Monitoring Preparation	Compliance (place x in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
1.10	Procedures are in place for handling, tracking and correcting data.	X			There is a detailed work instruction in place to ensure that correct handling, tracking and storage of data. Staff are signed off as competent.
		10	0	0	**100 %**
		10	**/**	**10**	

2	Contamination Prevention	Compliance (place x in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
2.1	Field measurements are made on separate sub-samples of water (not in the laboratory samples).	X			Field measurements are taken using separate sub-samples of water.
2.2	Only sample containers supplied by the analytical laboratory are utilised.	X			All sample containers, including appropriate preservatives are supplied by ALS laboratory. To reduce the amount of wastage of containers, due to the switch in labs from SGS to ALS in May 2022, SGS containers have been utilised where the preservatives material is the same.
2.3	The insides of containers do not come into contact with hands or objects	X			There is no direct contact with the insides of containers.
2.4	Sample containers are kept in a clean environment away from dust and dirt.	X			Samples are stored in containers within a sea container. During sampling and sample dispatch, containers are stored within sealed eskies to prevent contamination. ALS packages their containers in sets (ziplocked bag) which are tracked to make sure any preserved containers over 6 months old are disposed of.
2.5	Sampling staff use nitrile disposable gloves when handling sample containers at every stage during sampling.	X			Disposable nitrile gloves are currently utilised during sampling activities, with fresh gloves used for each sample location
2.6	Sampling equipment including containers, water quality parameter probes, pumps and bailers are rinsed with deionised water in between samples to prevent cross contamination.	X			Equipment is decontaminated between each monitoring event using DI water and Quantum Clean solution (where appropriate). Where samples are collected using a low flow pump, sample water is run through the pump for a minimum of 15 – 20 minutes to ensure the previous sample has been fully purged from the line. Where low flow sampling is not possible, a bailer is utilised and is decontaminated between each monitoring location.
		6	0	0	**100 %**
		6	**/**	**6**	

3	Sample Collection	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
3.1	Samples are collected in the appropriate bottles for the analyte being tested.	X			Bottles required for each sampling event are detailed within the field record sheet.
3.2	The depth below ground level at which the sample is taken is always recorded	X			A water level meter is utilised to record this information during each sampling event. Data is recorded on the field sheet unless the depth is stated on the field sheet.
3.3	Water levels are measured before prior to pumping	X			Water levels are always recorded prior to pumping. The water level is also recorded during pumping to measure drawdown.
3.4	Sampling device ensures representative sample of the aquifer is obtained (sample is derived from the aquifer itself and not from stagnant water in the bore).	X			The sampling devices continually purges the sample at the slotted zone until the field measurements stabilise (pH, TDS and EC), a sample is taken. Samples are taken from the same depth within the slotted section during each sampling event, with the required depth specified on the field record sheet.
3.5	Sampling containers are clearly marked in a durable manner, enabling clear identification of all samples in the laboratory	X			Dry sample containers are clearly labelled with a permanent marker.
3.6	Onsite analysis and field records are included in a report with the sample to the laboratory			X	ALS Laboratory (NATA Certified) does not require field results.
3.7	Are field notes recorded on the field data sheet including weather conditions (wind speed, cloud cover and temperature) and water sample (odour, colour, floating material etc.)		X		Most field sheets have been updated to capture any observations or information at the time of sampling and is noted down whilst in the field. This will be resolved to all field sheets for the 2022-2023 reporting period.
3.8	All field records are documented before leaving a sampling location	X			All field records are documented before leaving a sampling location.
3.9	Observations or information on the conditions at the time of sampling that may assist in interpretation of the data are noted on the field record sheet or field notebook.	X			All field sheets have been updated to capture any observations or information at the time of sampling and is noted down whilst in the field.
3.10	Field Sampling: Field record sheet includes field register of sample number, site, time, date, type/technique, technician, field data sheet	X			Field data sheet details this information.
3.11	Field data sheet describes the samples taken, the labels and details.	X			Field data sheet details this information.

3	Sample Collection	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
3.12	The volume of sample collected is sufficient for the required analyses, including any repeat analyses.	X			Only containers provided by the laboratory are utilised.
3.13	A sampling report is prepared with the following information: - location (and name) of sampling site, with coordinates and any other relevant locational information - details of sampling point - date of sampling - method of sampling - time of sampling - name of sampler - general environmental and climatic conditions - nature of pre-treatment - preservation procedure - data gathered in the field - any information which may affect the results of the analysis.	X			This information is included in the field record sheet/procedure.
		11	1	1	**92 %**
		11	**/**	**12**	

4	Quality Control and Quality Assurance	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
4.1	QAQC process has been implemented	X			QA/QC process has been implemented and is included in the relevant procedure/s.
4.2	Sample blanks are prepared to test for contamination from the field, containers, equipment and transport.		X		Sample blanks were taken for most monitoring programmes. There was no blank collected for the stormwater event in November 2021.
4.3	Duplicate and replicate samples are taken as part of the sampling QA/QC	X			Duplicate samples are taken for monitoring events that have 10 or more sampling points and are captured on the Field Sheets.
4.4	Protocols specify how sampling staff are to be trained to use sampling equipment	X			Yes, the procedure describes how to collect a blank and duplicate sample where required. The requirement to take a duplicate and blank sample for each monitoring campaign is included in the field sheet.
		3	1	0	**75 %**
		3	**/**	**4**	

5	Sample storage and transport	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
5.1	Samples are delivered to the laboratory to meet the laboratory set holding times	X			Sampling is undertaken with the aim to provide to the lab within the required holding times.
5.2	Samples are stored in an esky in the field and then refrigerated to cool to 8 degrees Celsius	X			Samples are always stored in an esky with ice bricks in the field and then refrigerated. Samples are dispatched with ice bricks also.
5.3	Sample storage and transport register of transport container number and sample numbers, date and time	X			Detailed within the Chain of Custody.
		3	0	0	**100 %**
		3	**/**	**3**	

6	Record Management	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
6.1	Calibrations and preventative maintenance are recorded carefully	X			Quarterly calibration records are stored in hard copy (field sheet folder) and soft copy format (InfoOne).
6.2	All repairs to equipment and instruments are recorded as well as any incidents that could affect the reliability of the equipment.	X			Service records for repairs conducted both on and off site are available.
6.3	Laboratory results and data is backed up in case of system or file failure.	X			SharePoint system backs up laboratory data. ALS also stores data in Webtrieve.
6.4	Chain of custody documentation in place	X			Chain of custody forms in place for each sampling event.
6.5	Chain of custody records maintained	X			Chain of custody records are maintained in electronic copy (InfoOne).
		5	0	0	**100 %**
		5	**/**	**5**	

7	Laboratory Analysis	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
7.1	Analytical lab is NATA accredited	X			ALS laboratory is NATA accredited. Certificates of analysis provide confirmation of accreditation against requested analyses. Non-accredited analyses are noted by exception on the Sample Receipt Notification.
7.2	Laboratory Receipt of Samples: Laboratory register or transport container number and sample numbers, date and time.	X			All samples are sent under chain of custody documentation, with each batch given unique number and identification for each individual sample. Time and date of sample receipt is recorded on documentation by the laboratory.
7.3	Laboratory storage of samples: Laboratory register of storage location, type, temperature, time and date	X			Laboratory provides records of sample temperature upon receipt.
7.4	Sample Preparation: Analysis register of sample (laboratory number), pre-treatment, date, technician	X			Sample treatment is documented in appended information in laboratory documentation.

7	Laboratory Analysis	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
7.5	Sample Analysis: Analysis register of instrument, calibration, technician, standard method, date, result	X			Sample treatment is documented in appended information in laboratory documentation
7.6	Analytes are clearly stated	X			Analytes are clearly stated on COC and subsequent receipt notifications and analysis certificates.
7.7	Appropriate analytical methods identified	X			Samples are analysed at a NATA accredited laboratory; all lab documentation received has standard assessments of accuracy and precision QA/QC. As the laboratory holds NATA accreditation, TGM has not audited their procedures within the scope of this audit, however, provided documentation of analysis indicates that these items have been sufficiently addressed. The limit of reporting for all analyses is quoted at the required levels. However, the LOR can be raised by ALS if the samples provided cause interference with the instruments.
7.8	Analytical methods cover the range of concentrations expected	X			
7.9	Analytical methods detect the minimum concentration of interest	X			
7.10	Analytical methods have sufficient accuracy and precision	X			
7.11	Samples are processed within the sample's storage life	X			
7.12	Laboratory has appropriate equipment to undertake the analytical method chosen	X			
7.13	Laboratory facilities are suitable for planned analyses	X			
7.14	Laboratory staff have the expertise, training and competence to undertake the planned analyses	X			
7.15	Laboratory has a data management system including: - track samples and data (chain of custody) - have written data entry protocols to ensure correct entry of data - enable associated data to be retrieved (e.g. nutrient concentration and flows to calculate nutrient loads) - have validation procedures to check accuracy of data - have appropriate storage and retrieval facilities to prevent loss of data and enable retrieval (for at least three years) based on current and expected information needs). - Procedures are in place to ensure information reaches the user	X			

7	Laboratory Analysis	Compliance			Observations / Findings / Comments
		Yes	No	N/A	
7.16	From documentation, the following information is available: - how the results were obtained? - samples unique identification - who the analyst was? - what test equipment was used? - the original observations and calculations? - how data transfers occur? - how standards were prepared? - the certified calibration solutions used, their stability and storage?			X	Not Applicable – this level of detail is associated with an offsite laboratory, which is outside the scope of the audit undertaken. If a result is queried by AGAA, ALS will be able to provide this information as a part of their investigation.
		15	0	1	**100 %**
		15	**/**	**15**	

Audit Score	**53**	**/**	**55**	**96 %**

Appendix F – Threatened Species and Communities Management Plan (TSCMP) Audit

TGM Threatened Species and Communities Management Plan Audit

Audit undertaken by:	Leonie Pradella	**Date of Audit:**	05/11/2022
Supervisor:	Rosemarie Lane	**Communicated:**	13/12/2022

1	Minimise direct loss of conservation significant species and communities or their habitat from disturbance activities	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
1.1	Known locations of Threatened flora within 50 m of disturbance areas will be visibly demarcated.	X			When planning disturbance activities, a combination of green and pink flagging tape is used to demarcate priority species identified in the field. Whilst based on the current conservation status there are currently no Threatened flora present at TGM, the process is in place to protect Threatened flora should they be identified, or the existing priority status is upgraded.
1.2	Infrastructure areas will be designed and located to avoid known locations of Threatened flora.	X			By default, with no Threatened flora at TGM, this has been achieved. Any clearing of native vegetation at TGM must be first approved through internal procedures in order to minimise disturbance as much as practicable which include: • TGM Ground Disturbance Permit (GDP) • TGM Environment and Heritage Inspection (EIN) During the GDP assessment process, a desktop assessment is undertaken to determine if there will be any impacts to Threatened Flora or Fauna and whether the proposed disturbance can be relocated to avoid these values. An EIN (pre-clearing inspection) is undertaken to check the proposed clearing envelope for other environmental or heritage values which have not been detected previously. This has been achieved in the past when there was Threatened Flora (e.g. former DRF[1] *Conospermum toddii* now priority 4).

1	Minimise direct loss of conservation significant species and communities or their habitat from disturbance activities	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
1.3	Infrastructure areas will be designed and located to avoid known locations of conservation significant species and ecological communities, mapped habitat for Threatened fauna and large Marble Gum trees with hollows, where practicable. When disturbance is unavoidable, design infrastructure to minimise impacts.	X			By default, with no conservation significant species identified at TGM, this has been achieved. Any clearing of native vegetation at TGM must be approved through internal procedures in order to minimise disturbance as much as practicable which include: • TGM Ground Disturbance Permit (GDP) • TGM Environment and Heritage Inspection (EIN) During the GDP assessment process, a desktop assessment is undertaken to determine if there will be any impacts to Threatened Flora or Fauna and whether the proposed disturbance can be relocated to avoid these values. An EIN (pre-clearing inspection) is undertaken to check the proposed clearing envelope for other environmental or heritage values which have not been detected previously.
1.4	Areas of habitat for conservation significant species identified with the TGM GIS database and used for planning and design.	X			All known habitat for conservation significant species is recorded via internal mapping software to assist with GDP and EIN processes. An initial desktop assessment is conducted for both processes which requires the employee to review layers relating to environmental values (flora, fauna and heritage) prior to progressing to the EIN field assessment. Should critical Threatened Flora or Fauna habitat be located at either stage an appropriately sized buffer is placed around the area to ensure its protection.
1.5	Recently defined boundary of the “Sandplain Vegetation of the Great Victoria Desert with Diverse Vertebrate Fauna PEC” imported to the TGM GIS database for use when planning activities along the Pinjin Infrastructure Corridor and in exploration areas.	X			The Boundary of PEC #54 Yellow Sandplain Vegetation of the Great Victoria Desert was supplied by the DBCA in January 2020 and has been incorporated since then into the TGM internal mapping software to assist with GDP and EIN processes.
1.6	Collection of seed from conservation significant flora in accordance with the Biodiversity Conservation Act and DBCA requirements.	X			Seed collection, storage and preparation services are provided by the specialist seed expert, Red Dirt Seeds in accordance with best practice and accepted industry standards and guidelines relating to native seed storage. TGM requires seed to fulfil mine closure commitments. To ensure sufficient seed for closure, annual visits are undertaken by this specialist seed expert and where conditions are favourable, seed is picked and added to the seed bank which is housed by Red Dirt in a specialist facility.

1	Minimise direct loss of conservation significant species and communities or their habitat from disturbance activities	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
1.7	Where seed from conservation significant flora species has been collected for use in rehabilitation, samples will be contributed to the Threatened Flora Seed Centre (at the WA Herbarium)	X			Seed collection for rehabilitation targets 100 species from the GVD that will have the greatest chance of success on mining landforms. To date, seed form conservation significant species have not been collected.
1.8	Conduct risk assessments for subterranean fauna for major new developments. If the risk assessments identify suitable habitat and uncertainty of impact, conduct supporting subterranean fauna surveys.	X			Any new development where risk assessments identify suitable habitat affected by major development with uncertain impact to subterranean fauna must have supporting subterranean fauna surveys conducted. For example, a subterranean survey was completed by Phoenix Environmental Services in April 2020 as part of the fauna risk assessment of the impact of commissioning the Kamikaze borefield south of the TGM. Results confirmed the absence of stygofauna inhabiting the Kamikaze aquifer, and as per EPA guidance is not considered an environmental factor and no further surveys are required.
1.9	Post clearing reconciliation survey	X			As per the TGM Ground Disturbance Procedure, the TGM survey team conducts either aerial (drone) or on foot surveys of cleared areas post clearing at the request of either the Environment team or the GDP requester.
1.10	Post disturbance monitoring of Threatened flora populations (should a Threatened flora incident occur)			X	No unauthorised clearing incidents have occurred during the reporting period at TGM.
1.11	Conduct annual disturbance mapping and disturbance database update and reporting via flyover aerial photography	X			Latest aerial imagery survey was completed during September 2022 by Outline Imagery for the primary purpose of compiling ortho-rectified 4-band colour photo mosaics. TGMs areas include the mine operational area, the Borefields to the north of the mine and the Pinjin road corridor to the Southwest of the mine.
1.12	Conduct an annual vegetation monitoring program in accordance with the TGM Environmental Monitoring Strategy	X			The annual vegetation monitoring was conducted in September 2022, and a final report was received on 14 December 2022 (Appendix H). A brief overview of the report findings is provided in Section 4 of the 2022 CAR.
		11	0	1	**100 %**
		11	**/**	**11**	

2	Minimise weed infestations competing with Threatened and conservation significant flora and Threatened fauna habitat	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
2.1	Implement a vehicle hygiene inspection programme for equipment mobilising to site	X			Equipment Mobilisation Hygiene Inspection process is implemented for equipment mobilising to site. Upon arrival to site, the TGM Compliance Officer and /or Environment team will inspect all equipment to ensure it is free of soil or vegetative matter and free of hydrocarbon leaks/frayed hoses.
2.2	Record the location of weed populations	X			Weed layer in TGM's GIS system updated as new populations are encountered.
2.3	Inspect areas of known past weed infestations at high-risk times i.e., after rainfall	X			Targeted inspections of high-risk areas post-rainfall events. Monthly workplace inspections include the requirement to inspect all workspaces for the presence of weeds.
2.4	Following rehabilitation, areas will be monitored and treated for weeds, if necessary	X			Rehabilitation areas to date are relatively small and are monitored on an opportunistic basis.
2.5	Where equipment conducting road maintenance activities at Pinjin Station is likely to interact with weed species then it will be cleaned down at the Pinjin Station boundary	X			All equipment mobilised to site is inspected upon arrival and cleaned down if required. This includes any equipment conducting road maintenance activities.
		5	0	0	**100 %**
		5	**/**	**5**	

3	Minimise feral animal predation of conservation significant species	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
3.1	Site landfill will be fenced to exclude access by scavenging fauna.	X			Site landfill is fenced in order to exclude access by native or feral fauna. Weekly inspections are conducted by the contractor responsible for the landfill to ensure the integrity of the fenceline and pick up any windblown rubbish. The landfill at the Waste Management Facility contains dedicated putrescible and inert waste trenches, which are covered at regular intervals.
3.2	Installation of fencing/barriers around isolated turkeys' nests.	X			Twin Turkeys nest, Kamikaze Turkeys nest, WWTP Ponds, Ground Zero Water Storage Pond, Process Water Ponds, Process Water Supply Borefield Storage Pond, and AMA Ponds are fenced with lockable gates. The Macmahon's Washdown Pond next to the workshop is not fenced. Whilst not being fully compliant the workshop area is occupied 24 hours a day with informal inspections occurring.
3.3	No pets will be permitted in TGM areas	X			TGM is a FIFO operation, and no pets are allowed on flights/site.
3.4	In areas of known feral animal activity bins will be modified to prevent access by feral animals	X			Putrescible waste is separated into wheelie bins with lids.
		4	0	0	**100 %**
		4	**/**	**4**	

4	Minimise potential for entrapment of conservation significant species in trenches and turkeys nests	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
4.1	Trenches will be designed, constructed and inspected to minimise potential entrapment of fauna	X			Any trenches are inspected regularly for fauna and have ramps or fauna egress (branches etc) placed into the trench to assist any fauna to exit.
4.2	Installation of fencing/barriers around isolated turkeys nests	X			Twin Turkeys nest, Kamikaze Turkeys nest, WWTP Event Ponds, Raw Water Dam, Process Water Dams, Process Water Supply Borefield Storage Dam, AMA Dams and the access road turkeys' nests are all fenced with lockable gates. The Macmahon Washdown Bay Dam next to the workshop is not fenced. Whilst not being fully compliant the workshop area is occupied 24 hours a day with informal inspections occurring.
4.3	Installation of egress matting/ramps in turkeys nests	X			Scramble mats and or nets are installed in a minimum of two corners per turkeys' nests. The majority of turkey's nests or ponds also have textured HDPE liners.
4.5	Exploration drill holes to be capped immediately after completion	X			Drill hole completion audits are conducted by the Geology team at the completion of drilling programs. These are stored on their databases.
		4	0	0	**100 %**
		4	**/**	**4**	

5	Minimise interaction of conservation significant fauna with TSFs	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
5.1	Weak Acid Dissociable Cyanide levels on the TSF will be managed in accordance with the TGM International Cyanide Management Code Certification.	X			TGM was initially certified under the Cyanide Code in August 2017 with recertification completed in November 2020.
5.2	TSF freeboard design intended to contain a probable maximum precipitation (PMP) event	X			The TSF design allows for a total freeboard of at least 500 mm. During the reporting period, the total stormwater storage within the TSF remained greater than the Probable Maximum Precipitation (PMP) event, satisfying the requirement of this commitment.
5.3	No loss of conservation significant fauna when WAD CN exceeds 50 mg/L at the decant pond.	X			TSF inspections are carried out twice daily by trained and dedicated TSF Operators, with quarterly inspections and audits completed by Donato Environmental Services. The TSF decant water ranged between 2.56 and 49.71 mg/L with an average WAD CN level of 12.97 mg/L for the reporting period, with no exceedances.
5.4	Installation and maintenance of decoy fauna ponds to deter fauna use of the TSF decant pond	X			6 decoy fauna ponds are established to the west and north of the TSF. These are all monitored physically at a minimum once per week and have motion sensor cameras mounted overlooking the ponds which are checked once per month by the Environment Team.
5.5	No uncontrolled releases of tailings outside the containment areas.	X			No uncontrolled releases of tailings occurred outside of containment areas during the reporting period.
5.6	Fauna trapped in tailings are rescued where safe to do so or recorded as mortalities	X			Four bird deaths at the TSF were recorded as mortalities in the AGA Event Management System INX InControl during the reporting period. All deaths were investigated and deemed not due to cyanosis by Donato Environmental Services.
		6	0	0	**100 %**
		6	**/**	**6**	

6	Minimise dust generation where practicable	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
6.1	Implement dust suppression on active haul roads and internal roads with high traffic (e.g., Village Access Road)	X			Dust suppression is carried out by water cart operators within the Active Mining Area, around the operational areas such as the process plant and all internal roads such as the one between the village and the Minesite and out to the airport on a daily basis. Annual vegetation monitoring is conducted to observe any decline in the health of flora communities outside approved areas which may be caused by operations. Any changes observed have been assessed to be due to natural processes and not due to operational activities.
6.2	Implement dust control in the process plant	X			The process plant dust or pollution control systems are continuously monitored by the automated control system CITECT. Dust or pollution control systems installed include sprinkler systems and dust scrubbers on the conveyor systems and inside the HPGR.
6.3	Minimise new disturbance areas and vegetation clearing	X			Any clearing of native vegetation at TGM must be approved through internal procedures in order to minimise disturbance as much as practicable which include: • TGM Ground Disturbance Permit (GDP) • TGM Environment and Heritage Inspection (EIN) During the GDP assessment process, a desktop assessment is undertaken to determine if there will be any impacts to Threatened Flora or Fauna and whether the proposed disturbance can be relocated to avoid these values. An EIN (pre-clearing inspection) is undertaken to check the proposed clearing envelope for other environmental or heritage values which have not been detected previously.
		3	0	0	**100 %**
		3	**/**	**3**	

7	Minimise interaction between vehicles and conservation significant fauna	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
7.1	Planning and design of infrastructure corridors and resources supply (borrow/gravel pits) will be such to avoid mapped habitat for Threatened and other conservation significant fauna where practicable	X			Any clearing of native vegetation at TGM must be first approved through internal procedures in order to minimise disturbance as much as practicable which include: • TGM Ground Disturbance Permit (GDP) • TGM Environment and Heritage Inspection (EIN) During the GDP assessment process, a desktop assessment is undertaken to determine if there will be any impacts to Threatened Flora or Fauna and whether the proposed disturbance can be relocated to avoid these values. An EIN (pre-clearing inspection) is undertaken to check the proposed clearing envelope for other environmental or heritage values which have not been detected previously.
7.2	To minimise vehicle movements, establish a charter flight for Kalgoorlie based employees and contractors to access site.	X			Charter flights are established on a daily basis, Monday to Friday, from Perth and Kalgoorlie which can be utilised by any employee or contractor traveling to and from TGM.
7.3	Speed limits to be implemented and enforced along all roads.	X			Speed limits on site do not exceed 60 km/h. Access Road permits speed up to 80 km/ h. All employees are required to drive to the conditions. Random speed checks are conducted on site via tracking systems linked to vehicle 2-way radio's.
7.4	Any fauna killed on roads encouraged to be reported to environmental personnel for recording.	X			Incidents are recorded through use of the Event Management System INX InControl. This represents the primary reporting tool used at TGM for all events regardless of whether they become externally reportable or remain internal incidents.
7.5	Incidents involving Threatened flora and fauna species will be reported to DWER, DAWE and DBCA as soon as practicable but no later than 5 pm of the next usual working day of TGM becoming aware of the event.	X			Incidents are recorded through use of the Event Management System INX InControl. This represents the primary reporting tool used at TGM for all events regardless of whether they become externally reportable or remain internal incidents. No reportable events have occurred during the reporting period.
7.6	Incidents involving other conservation significant species (i.e., priority species) will be reported to DBCA as soon as practicable but no later than 5 pm of the next usual working day of first becoming aware of the event	X			Incidents are recorded through use of the Event Management System INX InControl. This represents the primary reporting tool used at TGM for all events regardless of whether they become externally reportable or remain internal incidents. No reportable events have occurred during the reporting period.
		6	0	0	**100 %**
		6	**/**	**6**	

8	Avoid artificial changes to fire regimes	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
8.1	Operational practice is to not intervene with naturally occurring lightning-initiated fires unless there is a risk to people or property.	X			Continued monitoring and communication of Vehicle Movement Bans, Catastrophic fire conditions, total fire bans and path/spread of lightning initiated regional fires in the general TGM area. During fire season the TGM Emergency Services Officers (ESOs) monitor a number of websites - emergency.wa.gov.au; firenorth.org.au; hotspots.dea.ga.gov.au; weatherzone.com.au which indicate where fires are in relation to the TGM Village, Mining Operations, borefields and anyone who may be working remotely.
8.2	Develop and implement a Prevention of Bushfire Procedure	X			Several immediate response procedures have been developed for implementation as part of TGM's Emergency Management Plan including process plant, explosives, tyre, oxygen, switch room and bushfire. Adhere to the most recent DFES Fire Danger Rating gauge and communicate to work groups
8.3	Establish fire breaks adjacent to high fire risk areas.	X			Fire breaks are installed and maintained in high-risk areas such as around the village. Fire precautions are undertaken for exploration in vegetated areas. Several immediate response procedures have been developed for implementation as part of TGM's Emergency Management Plan including process plant, explosives, tyre, oxygen, switch room and bushfire.
8.4	Consult with DBCA on fire / emergency planning at TGM	X			In the event of a fire, TGM will consult with DBCA plus adhere to the most recent DFES Fire Danger Rating gauge and communicate to work groups any changes required.
8.5	Communicate notice of Vehicle Movement Bans and Catastrophic fire conditions to work groups.	X			Continued monitoring and communication of Vehicle Movement Bans, Catastrophic fire conditions, total fire bans and path/spread of lightning initiated regional fires in the general TGM area. ESO's monitor emergency.wa.gov.au daily for total fire bans and communicate to the work groups who may be affected.
8.6	Conduct activities in accordance with Total Fire Ban exemption permit requirements (current to 2021)	X			ESO's provide information to work groups on the Total Fire Ban's (TFB) and apply for exemptions as per the current DFES process.
		6	0	0	**100 %**
		6	**/**	**6**	

9	Prevent impacts from hydrocarbons and chemicals on Threatened fauna habitat	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
9.1	Where practicable, chemical and hydrocarbon storage facilities are to be located away from mapped habitat for Threatened fauna species.	X			The project footprint was placed to avoid critical habitat. Hydrocarbon storage, handling and disposal facilities occur on cleared areas. The only facilities near vegetation/habitat are gen sets for bore pumps at borefields although these are also on cleared pads for pump maintenance, vehicle turnaround and fire protection.
9.2	Manage environmentally hazardous substances in accordance with the site's Dangerous Goods licences, applicable Australian Standards and TGM's IMS.	X			Facility inspections and audits are undertaken regularly to ensure hydrocarbons and chemicals are stored appropriately. New chemicals to site must go through an internal Chemical Request process which ensures that each chemical's level of risk to both people and the environment are considered before its approval for use on site. Annual external audits are conducted to ensure Dangerous Goods are stored to the relevant Australian Standard. Tropicana Gold Mine currently holds Dangerous Goods Licence DGS020989 which expires on the 16/11/2026.
		2	0	0	**100 %**
		2	**/**	**2**	

10	Minimise impacts from saline water on Threatened fauna habitat	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
10.1	Where practicable, saline water pipelines and roads located away from mapped habitat for Threatened fauna species.	X			The pipeline corridor and borefield were designed to avoid impacts on Priority Flora and Threatened Fauna.
10.2	Process Water Supply Borefield to TGM pipeline will be buried or bunded with leak detection	X			Pipelines are buried or bunded. Pipelines have leak detection and alarm through to the Tropicana Operations Centre, with the ability to remotely activate cut-off systems rather than automatic cut-off systems.
10.3	Smaller water carts used to apply dust suppression along roads adjacent to vegetation	X			Dust suppression is carried out by water cart operators within the Active Mining Area, around the operational areas such as the process plant and all internal roads such as the one between the village and the Minesite and out to the airport on a daily basis. Annual vegetation monitoring is conducted to observe any decline in the health of flora communities outside approved areas which may be caused by operations. Any changes observed have been assessed to be due to natural processes and not due to operational activities.
		3	0	0	**100 %**
		3	**/**	**3**	

11	Update the status of conservation significant flora, fauna and communities	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
11.1	Conduct an annual review and update the status of the TGP's Threatened and Priority species and communities annually against Western Australian and Commonwealth listings.	X			The Environment Team conducts regular (at a minimum annual) review of lists on the DBCA website and EPBC Act website plus remain in regular contact with consultants/experts in both Flora and Fauna of the region.
11.2	Update TGM's general induction to provide current status of Threatened species.	X			Site induction covers content on flora and fauna in the region. All employees are provided with access to a handbook that provides information on threatened species (flora and fauna) at TGM.
11.3	Update workforce education packages to provide current status of conservation significant species	X			Site induction covers content on flora and fauna in the region. All employees are provided with access to a handbook that provides information on threatened species (flora and fauna) at TGM. The Environment Team conducts regular (at a minimum annual) review of lists on the DBCA website and EPBC Act website plus remain in regular contact with consultants/experts in both Flora and Fauna of the region.
		3	0	0	**100 %**
		3	**/**	**3**	

12	Rehabilitate open areas once permanently available	Compliance (X in applicable box)			Observations / Findings / Comments
		Yes	No	N/A	
12.1	Rehabilitate available areas in accordance with the Mine Closure Plan prescriptions and subject to appropriate monitoring.	X			Project is currently in a phase where limited areas are available for rehabilitation. Borrow pits along the access road have been rehabilitated. The "Ground Zero" borrow pit has also been rehabilitated.
12.2	Following rehabilitation, areas will be monitored and treated for weed invasion, if necessary.	X			Rehabilitation areas to date are relatively small and are monitored on an opportunistic basis.
12.3	Open areas are rehabilitated within two years of becoming available	X			Project is currently in a phase where limited areas are available for rehabilitation. Borrow pits along the access road have been rehabilitated. The "Ground Zero" borrow pit has also been rehabilitated.
		3	0	0	**100 %**
		3	**/**	**3**	

FINAL AUDIT SCORE	**56**	***/***	**56**	**100 %**

Notes:

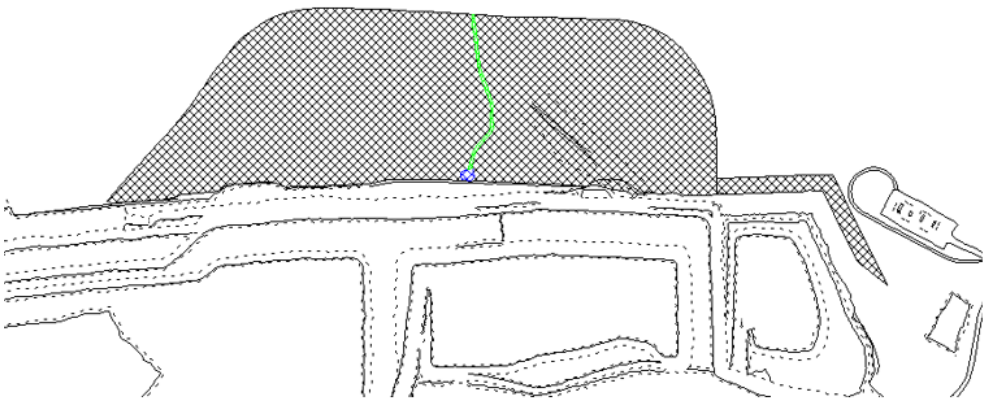
[1] **Declared Rare Flora (DRF)** has been renamed to **Threatened Flora** under The Wildlife Conservation (Specially Protected Fauna) Notice 2018 and the Wildlife Conservation (Rare Flora) Notice 2018 when transitioned under regulations 170, 171 and 172 of the Biodiversity Conservation Regulations 2018 to be the lists of Threatened, Extinct and Specially Protected species under Part 2 of the Biodiversity Conservation Act 2016.

Appendix G – Ground Disturbance Permits

ANGLOGOLD ASHANTI AUSTRALIA

Ground Disturbance Permit

Prior to completing a Ground Disturbance Permit the Requestor shall verify that proposed activities are within approved boundaries using TGM GIS database and/or discussion with the Environment team.

Part A – Application Details (Requestor to complete)			
Date of application: 23/12/2021	Date/s of proposed disturbance: 31/01//2021		
Expected clearing completion date: 23/01/2022			
Request completed by:	Name: Steven Pimblett	Department: Mine Planning	
Activity to be conducted by:	Department/Contractor: Macmahon		
Part B – Scope of Ground Disturbance (Requestor to complete)			
Ground Disturbance and land use: *(If unsure speak to the Environment Department)*	Land Use: **Waste Landorms**	Area of disturbance (ha):	36.715ha
Ground Disturbance and land use: *(If unsure speak to the Environment Department)*	Land Use: **Access Road/Tracks**	Area of disturbance (ha):	1.48ha
Tenement/s being disturbed:	**M39/1096**		
Location of disturbance activity:	UN DISTURBED ACCESS TRACK MONITORING BORE/BORE LOCATIONS 		
Spatial files attached:	*YES*		
Is a Land Use Change required? *(If the area is already disturbed by an existing activity then a Land Use Change is required. Ensure*	YES ☒	NO ☐	

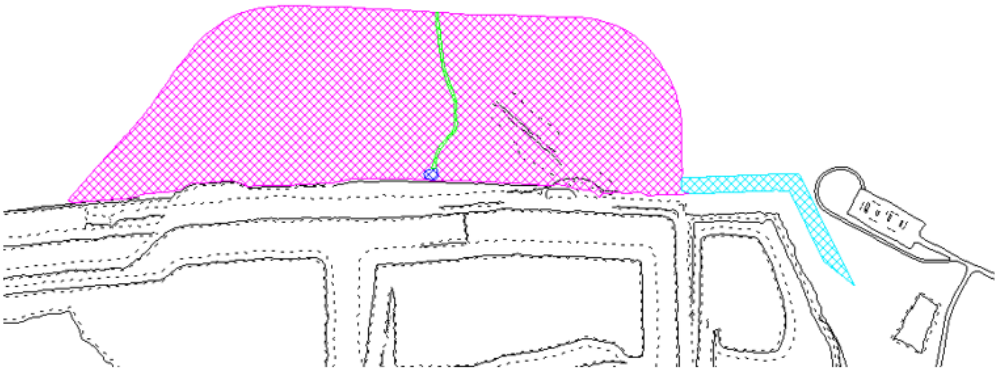
the Land Use Change is not the result of unnecessary overlapping spatial files)	Previous Land Use: **Access Road/Tracks**		
	New Land Use: **Waste Landorms**		
	Area of Land Use Change (ha): 0.183ha		
	Previous Land Use: **Other - Monitoring Locations/Bores**		
	New Land Use: **Waste Landorms**		
	Area of Land Use Change (ha): 0.056ha		

UN DISTURBED TO LANDFORM = ***36.715HA***

ACCESS TRACK TO LANDFORM = ***.183HA***

MONITORING BORE/BORE LOCATIONS TO LANFORM = ***.056HA***

UN DISTURBED TO ACCESS ROAD = ***1.48HA***



Disturbance method:	Drive Over ☐	Raised Blade ☐	Bucket Touch ☐	Full Clear >3cm ☒
Does the disturbance require any excavation greater than 150 mm or occur within the proximity of infrastructure? (*i.e. overhead powerlines)*	YES ☒ *If Yes – consult relevant department/s and complete required approvals (i.e. Excavation and Penetration Permit)*			NO ☐
Will growth medium be collected?	YES ☒ NO ☐			
	If no, provide a reason:			
	If yes, what depth: 300mm			
	Stockpile location: GM06 growth medium stockpile			
Will vegetation be collected?	YES ☒ NO ☐			
	If no, provide a reason:			
	Vegetation Type/s – Large trees/Scrub ☒ Shrubs/Mixed ☒ Other: ☐			
	Stockpile location: GM06 VSM Stockpile			

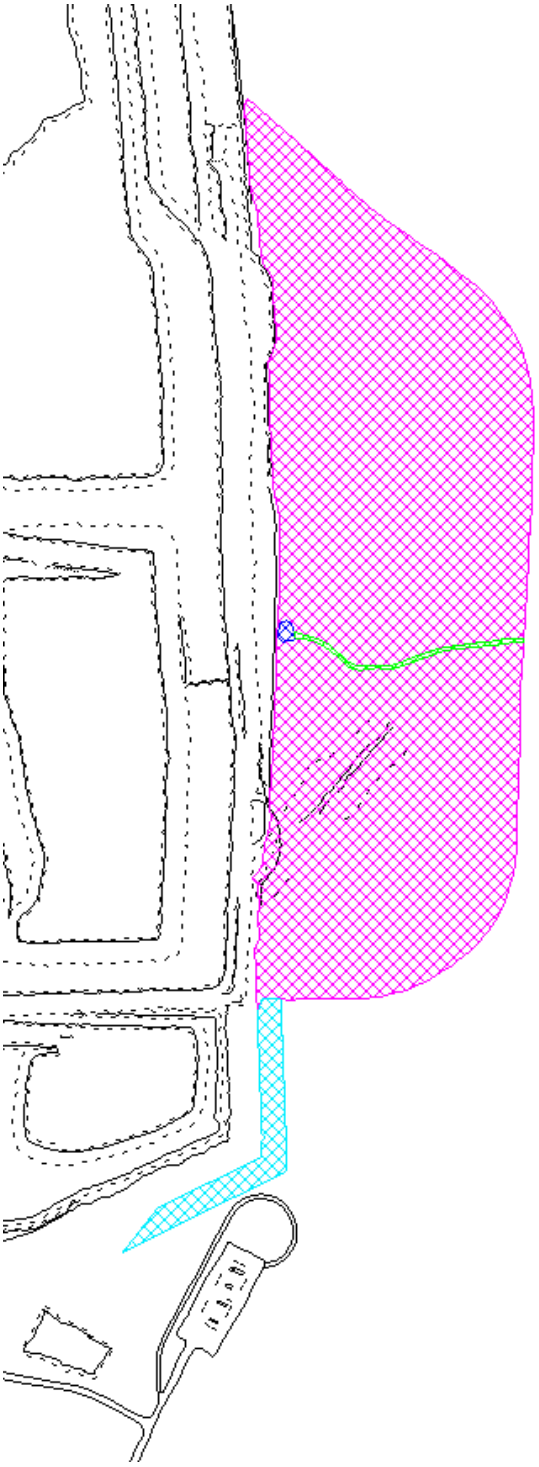
Part C – Disturbance Delineation (Requestor or Survey to complete)			
Will the disturbance boundary be delineated in the field by Survey?	YES ☐		NO ☒
	Date of delineation:	Delineated by:	
Method of delineation:	Flagging ☐ Minestar ☒ Pegging ☐ Area surrounded by existing disturbance ☐ Other ☐ - please specify:		
Part D – Environment Assessment (Environment team to complete)			
Is the proposed disturbance activity within approval limits?	YES ☒ NO ☐		
Disturbance allocated to:	Mining Proposal ☒	Other ☐	
	Approval id/s: MP20141224 / REG ID:53515 and MP20200630 / REG ID: 88552		
Area inspection required? (*EIN report must be attached if inspection is required)*	YES ☐		NO ☒
	Date inspected:		
	Inspected by:		
Is the disturbance within the proximity of any Environmental or Heritage values?	YES ☐		NO ☒
	Value/s identified:		
	Distance from (m):		
Clearing Permit Reference:	**PERMIT REFERENCE NUMBER:**		

Approval Granted:	**Approval Not Granted:**
Date: 24/12/2021	Date:
Name: Jordan Baker	Name:
Signature: J Baker	Signature:
Environment Superintendent or delegate authorised to sign	*Environment Superintendent or delegate authorised to sign*

Spatial files emailed to GIS Officer (TGM CAD/GIS) ?	YES ☒ NO ☐

Part E – Approval Conditions (Requestor to sign, scan, and return to Environment Department)	
Approval Comments or Conditions	This GDP authorises: 1. Clearing of 36.715 ha of new disturbance for the purpose of Waste Landforms and 1.48ha for access road/tracks. a. Land use change of 0.183 ha of tracks to Waste Landforms; b. Land use change of 0.056ha of monitoring bore to Waste Landforms. 2. This GDP does not provide authorisation for any additional permits that may be required. 3. All GM, VSM and large trees are to be collected and stockpiled at GM06. 4. The cleared area must be surveyed upon completion and the data provided to TGM CAD/GIS.
GDP Requestor Review of Conditions	Date: Name: Signature:

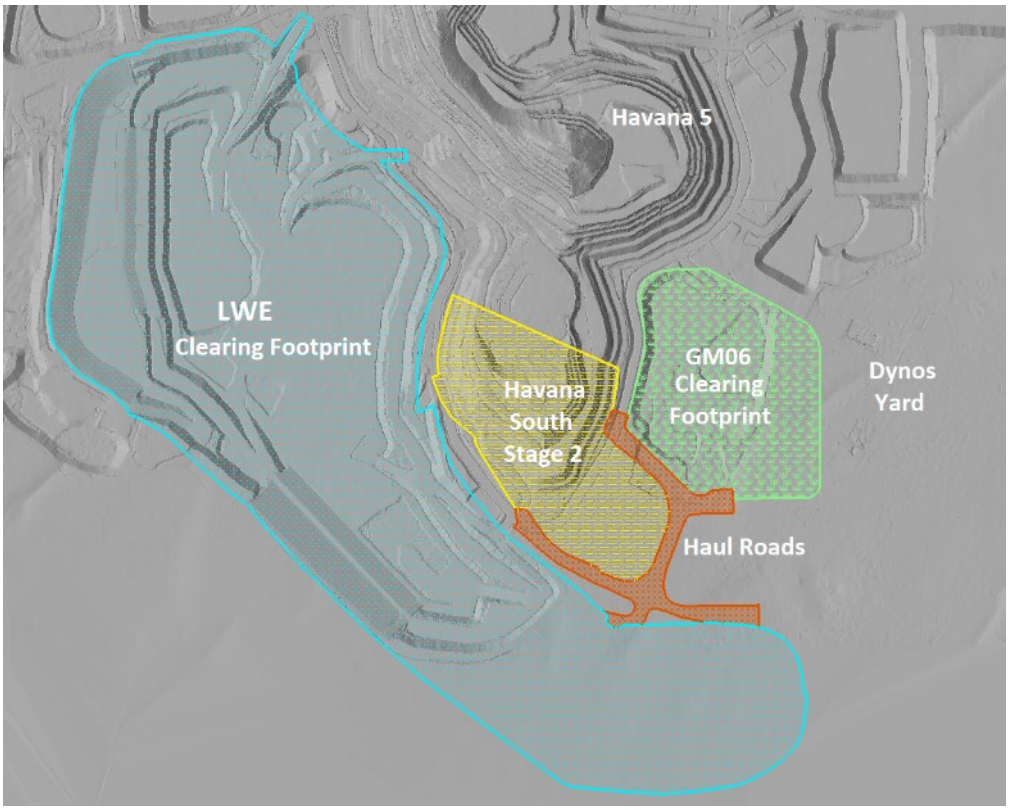
Map of Proposed Disturbance Activity (Requestor to complete)



ANGLOGOLD ASHANTI AUSTRALIA

Ground Disturbance Permit

Prior to completing a Ground Disturbance Permit the Requestor shall verify that proposed activities are within approved boundaries using TGM GIS database and/or discussion with the Environment team.

Part A – Application Details (Requestor to complete)				
Date of application: **06/09/2022**		Date/s of proposed disturbance: **07/09/2022**		
Expected clearing completion date: **07/11/2022**				
Request completed by:	Name: **Natalie Loxton**	Department: **Mine Planning**		
Activity to be conducted by:	Department/Contractor: **Macmahons**			
Part B – Scope of Ground Disturbance (Requestor to complete)				
Ground Disturbance and land use: *(If unsure speak to the Environment Department)*	Area of Disturbance (ha)	**Land Use Change (ha)**	**New Clearing (ha)**	**TOTAL (ha)**
	Land Use: **Other - Growth Medium Stockpile/s**	2.007	12.860	**14.868**
	Land Use: **Open Pit**	10.680	4.136	**14.816**
	Land Use: **Haul Road/s**	1.616	4.835	**8.709**
	Land Use: **Waste Landforms**	7.179	61.564	**68.743**
	TOTAL (ha):	21.483	83.395	**107.136**
Tenement/s being disturbed:	**M39/1096**			
Location of disturbance activity:				
Spatial files attached:	*Spatial files must be submitted with this form.*			

Part B – Scope of Ground Disturbance (Requestor to complete)		
Is a Land Use Change required? *(If the area is already disturbed by an existing activity then a Land Use Change is required. Ensure the Land Use Change is not the result of unnecessary overlapping spatial files)*	YES ☒ **GM06**	NO ☐
	New Land Use: **Other - Growth Medium Stockpile/s**	
	Previous Land Use: **Access Road/Tracks**	
	Area of Land Use Change (ha): **0.173**	
	Previous Land Use: **Exploration**	
	Area of Land Use Change (ha): **0.990**	
	Previous Land Use: **Hardstand/Laydown Areas**	
	Area of Land Use Change (ha): **0.104**	
	Previous Land Use: **Haul Road/s**	
	Area of Land Use Change (ha): **0.740**	
	Previous Land Use: **N/A** *Undisturbed Land / New Clearing*	
	Area of Land Use Change (ha): **12.860**	
	YES ☒ **Havana South Stage 2 Open Pit**	NO ☐
	New Land Use: **Open Pit**	
	Previous Land Use: **Access Road/Tracks**	
	Area of Land Use Change (ha): **0.277**	
	Previous Land Use: **Exploration**	
	Area of Land Use Change (ha): **4.235**	
	Previous Land Use: **Hardstand/Laydown Areas**	
	Area of Land Use Change (ha): **1.216**	
	Previous Land Use: **Haul Road/s**	
	Area of Land Use Change (ha): **3.173**	
	Previous Land Use: **Other - Growth Medium Stockpile/s**	
	Area of Land Use Change (ha): **1.780**	
	Previous Land Use: **N/A** - *Undisturbed Land / New Clearing*	
	Area of Land Use Change (ha): **4.136**	

	YES ☒ **Haul Roads**	NO ☐
	New Land Use: **Haul Road/s**	
	Previous Land Use: **Access Road/Tracks**	
	Area of Land Use Change (ha): **0.335**	
	Previous Land Use: **Exploration**	
	Area of Land Use Change (ha): **0.839**	
	Previous Land Use: **Hardstand/Laydown Areas**	
	Area of Land Use Change (ha): **0.244**	
	Previous Land Use: **Other - Growth Medium Stockpile/s**	
	Area of Land Use Change (ha): **2.259**	
	Previous Land Use: **Open Pit**	
	Area of Land Use Change (ha): **0.198**	
	Previous Land Use: **N/A** *Undisturbed Land / New Clearing*	
	Area of Land Use Change (ha): **4.835**	
	YES ☒ **LWE**	NO ☐
	New Land Use: **Waste Landforms**	
	Previous Land Use: **Access Road/Tracks**	
	Area of Land Use Change (ha): **1.955**	
	Previous Land Use: **Exploration**	
	Area of Land Use Change (ha): **1.443**	
	Previous Land Use: **Hardstand/Laydown Areas**	
	Area of Land Use Change (ha): **0.013**	
	Previous Land Use: **Haul Road/s**	
	Area of Land Use Change (ha): **2.293**	
	Previous Land Use: **Other - Growth Medium Stockpile/s**	
	Area of Land Use Change (ha): **0.067**	
	Previous Land Use: **Other - Landfill**	
	Area of Land Use Change (ha): **1.409**	
	Previous Land Use: **N/A** *Undisturbed Land / New Clearing*	
	Area of Land Use Change (ha): **61.564**	

Part B – Scope of Ground Disturbance (Requestor to complete)				
Disturbance method:	Drive Over ☐	Raised Blade ☐	Bucket Touch ☐	Full Clear >3cm ☒
Does the disturbance require any excavation greater than 150 mm or occur within the proximity of infrastructure? (*i.e. overhead powerlines)*	YES ☒ *If Yes – consult relevant department/s and complete required approvals (i.e. Excavation and Penetration Permit)*			NO ☐
Will growth medium be collected?	YES ☒ NO ☐			
	If no, provide a reason:			
	If yes, what depth: **Top 300mm to VSM stockpile. 1m to Growth Medium Stockpile.**			
	Stockpile location: **GM006**			
Will vegetation be collected?	YES ☒ NO ☐			
	If no, provide a reason:			
	Vegetation Type/s – Large trees/Scrub ☒ Shrubs/Mixed ☒ Other: ☐			
	Stockpile location: **GM006**			
Part C – Disturbance Delineation (Requestor or Survey to complete)				
Will the disturbance boundary be delineated in the field by Survey?	YES ☐			NO ☒
	Date of delineation:	Delineated by:		
Method of delineation:	Flagging ☐ Minestar ☒ Pegging ☐ Area surrounded by existing disturbance ☐ Other ☐ - please specify:			
Part D – Environment Assessment (Environment team to complete)				
Is the proposed disturbance activity within approval limits?	YES ☒ NO ☐			
Disturbance allocated to:	Mining Proposal ☒	Other ☒ MS 839 S45c amendment June 2022		
	Approval ID/s: **MP Consolidated 20141224 / REG ID: 53515** **MP HSS2 Development / REG ID: 110546** REGID 110546 approves the following land uses for the HSS2 development as per the table below:			

5.1 Footprint and Design Description

Activities to be undertaken with this mining proposal will occur on M39/1096.

Table 5.1: Activity Details for this Mining Proposal

Activity Type	Mine Activity Reference	Proposed Area (ha)	Current Approved Area (ha)	Total Area (ha)
Waste Dump or Overburden Stockpile (Class 1)	LEA Waste Landform Extension	100	40	140
Mining Void >5 m below groundwater level	Havana South Open Pit	30	52	82
Mining Void >5 m below groundwater level	Havana Open Pit Stage 4 North	0	15.25	15.25
Waste Dump or Overburden Stockpile (Class 1)	LWE Waste Landform Extension	115	0	115
Low Grade Ore Stockpile (Class 1)	Havana South Low Grade Ore Stockpile	15	0	15
Other Mine Activities				

Area inspection required? (*EIN report must be attached if inspection is required)*	YES ☐ Date inspected: Inspected by:	NO ☒
Is the disturbance within the proximity of any Environmental or Heritage values?	YES ☐ Value/s identified: Distance from (m):	NO ☒
Clearing Permit Reference:	**PERMIT REFERENCE NUMBER: TGM_GDP_325**	

Approval Granted:	**Approval Not Granted:**
Date: **08/09/2022**	Date:
Name: **Leonie Pradella**	Name:
Signature:	Signature:
Senior Environmental Advisor or delegate authorised to sign	*Senior Environmental Advisor or delegate authorised to sign*

Spatial files emailed to GIS Officer (TGM CAD/GIS)?	YES ☒ NO ☐

Part E – Approval Conditions (Requestor to sign, scan, and return to Environment Department)

Approval Comments or Conditions	1. This GDP authorises **83.395 ha** of new clearing and **21.486 ha** of Land use changes, as summarised in the tables below and in Figures 1-5. 2. This GDP does not provide authorisation for any additional permits that may be required. 3. Prior to rehandling/handling material to GM06, VSM and large trees are to be collected and stockpiled within existing VSM and vegetation stockpiles within the GM06 footprint. 4. All GM, VSM and large trees are to be collected and stockpiled separately on GM06.

5. The LWE expansion will remove access to Environmental Monitoring Bore ENVMB008 – the Environmental Operations Team should be consulted and notified when access will be removed, the AMA boundary should where possible exclude the bore so it can be accessed freely. New/reopened tracks will be required under a separate GDP (Environment Team to action)

6. This GDP supersedes previously approved **TGM_GDP_314_Havana South Stage 2, TGM_GDP_315_LWE** and **TGM_GDP_316_GM06**. Any clearing approved under the previous GDPs and not included in this GDP will be accounted for during the Annual Flyover.

7. As per the approved mining proposal for this project a toe drain is to be constructed around the outer perimeter of the landforms to prevent any sediment run-off from angle of repose waste into the surrounding environment.

8. As per the approved mining proposal, erodible and PAF waste is to be co-mingled with NAF waste and placed towards the centre of the waste landform and not to be used on outer areas of the landform (as per existing waste management procedures). PAF waste disposal locations are to be recorded using Mine Star Fleet Management System.

9. The cleared area must be surveyed upon completion and the files provided to the TGM CAD/GIS specialist.

New Land Use	Land use Change (ha)	New Clearing (ha)	TOTAL (ha)	*HSS2 Allowance (ha)*	*HSS2 Remaining (ha)*
Other - Growth Medium Stockpiles	2.007	12.860	**14.868**	*15*	*0.132*
Open Pit	10.681	4.136	**14.816**	*30*	*15.184*
Haul Roads	1.616	4.835	**8.709**	*12*	*3.291*
Waste Landforms	7.179	61.564	**68.743**	*115*	*50.252*
	21.483	**83.395**	**107.136**		

Previous Land Use	New Land Use	Area (ha)
Access Roads/Tracks	Other - Growth Medium Stockpiles	0.173
Exploration	Other - Growth Medium Stockpiles	0.990
Hardstand/Laydown Areas	Other - Growth Medium Stockpiles	0.104
Haul Roads	Other - Growth Medium Stockpiles	0.740
New Disturbance	Other - Growth Medium Stockpiles	12.860
	TOTAL	**14.868**

Previous Land Use	New Land Use	Area (ha)
Access Roads/Tracks	Open Pit	0.277
Exploration	Open Pit	4.235
Hardstand/Laydown Areas	Open Pit	1.216
Haul Roads	Open Pit	3.173
Other - Growth Medium Stockpiles	Open Pit	1.780
New Disturbance	Open Pit	4.136
	TOTAL	**14.816**

Previous Land Use	New Land Use	Area (ha)
Access Roads/Tracks	Haul Roads	0.335
Exploration	Haul Roads	0.839
Hardstand/Laydown Areas	Haul Roads	0.244
Open Pit	Haul Roads	0.198
Other - Growth Medium Stockpiles	Haul Roads	2.259
New Disturbance	Haul Roads	4.835
	TOTAL	**8.709**

Previous Land Use	New Land Use	MP Consolidated Area (ha)	HSS2 Development Area (ha)	TOTAL (ha)
Access Roads/Tracks	Waste Landforms	0.214	1.741	**1.955**
Exploration	Waste Landforms	0.000	1.443	**1.443**
Hardstand/Laydown Areas	Waste Landforms	0.013	0.000	**0.013**
Haul Roads	Waste Landforms	2.293	0.000	**2.293**
Other - Growth Medium Stockpiles	Waste Landforms	0.067	0.000	**0.067**
Other - Landfill	Waste Landforms	1.409	0.000	**1.409**
New Disturbance	Waste Landforms	0.000	61.564	**61.564**
	TOTAL	**3.995**	**64.748**	**68.743**

GDP Requestor Review of Conditions

Date: 9th September 2022

Name: Natalie Loxton

Signature: Natalie Loxton

Map of Proposed Disturbance Activity (Requestor to complete)

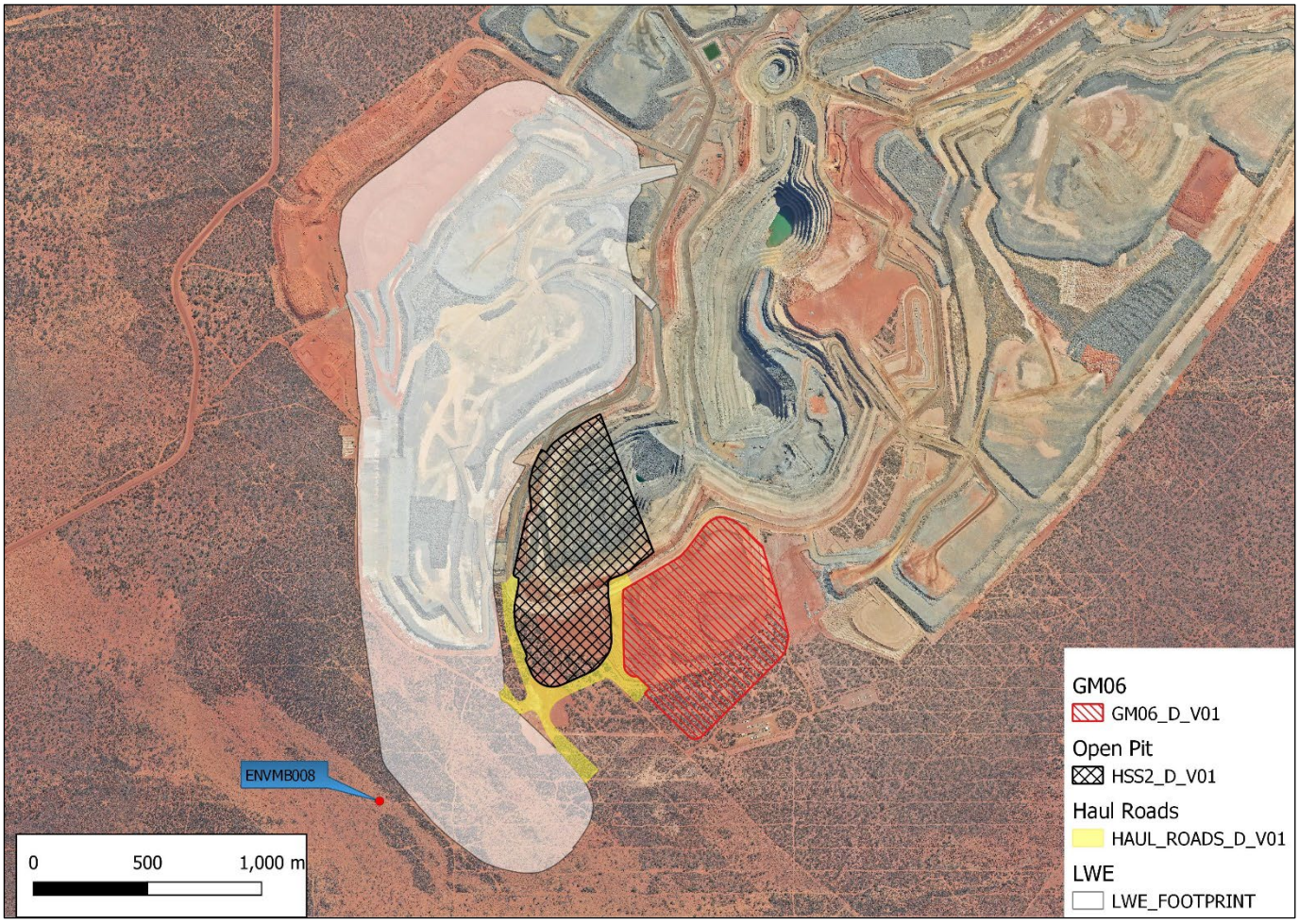


Figure 1: Locations of Land Use

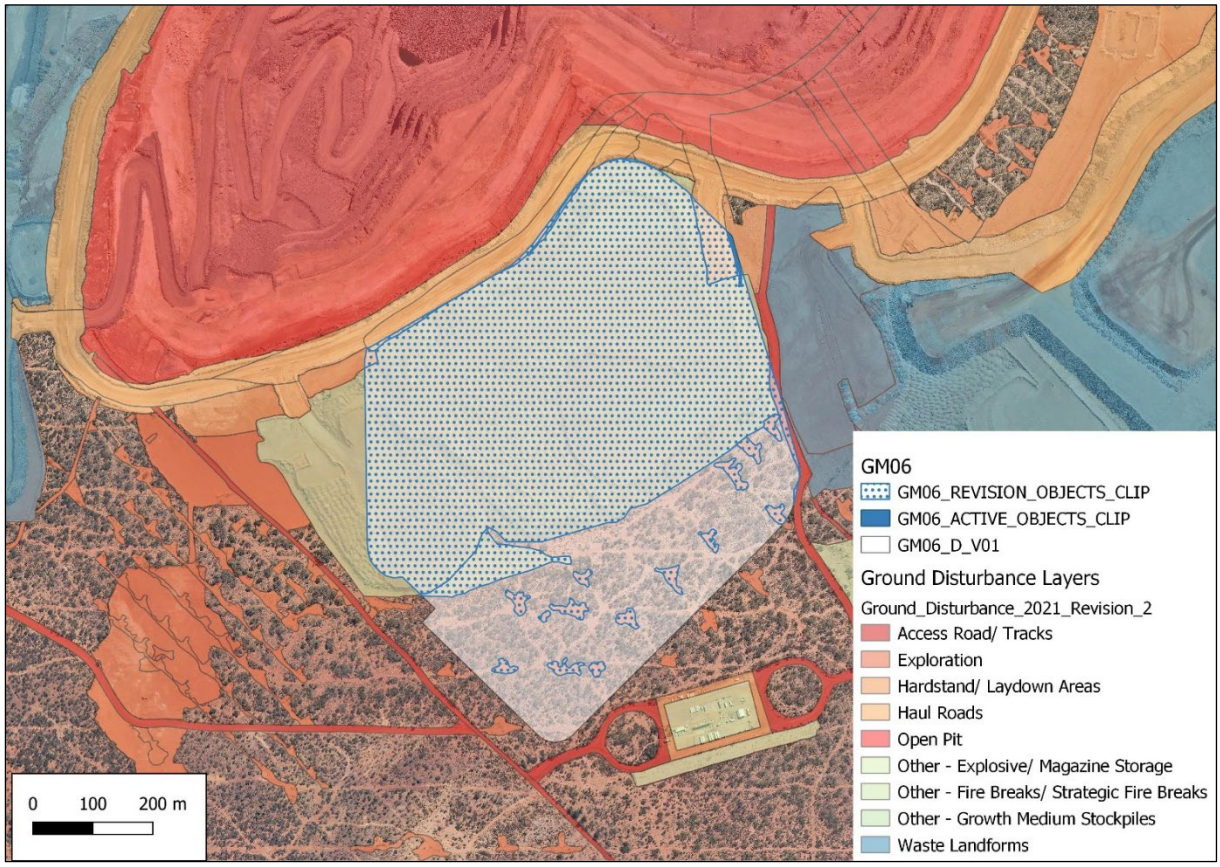


Figure 2: GM06 Land Use changes

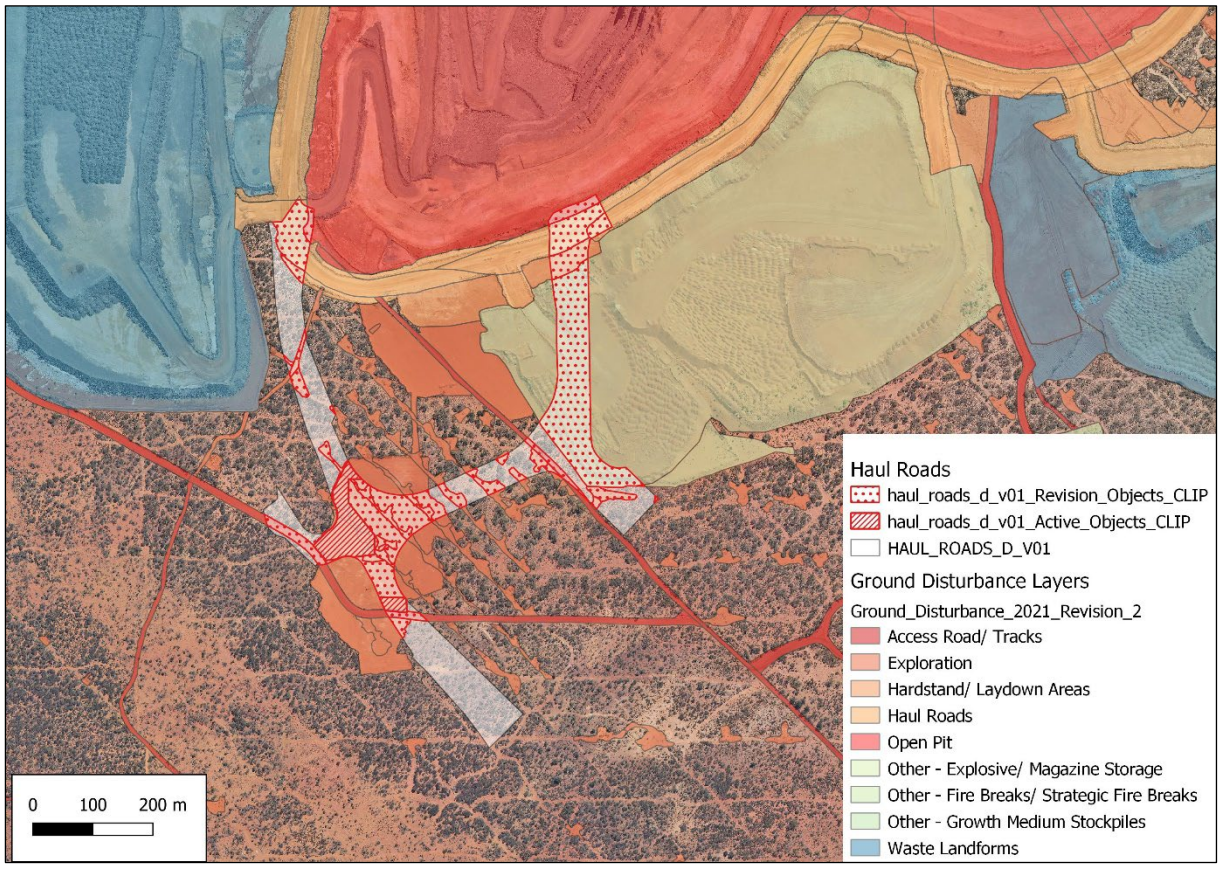


Figure 3: Haul Roads Land Use Changes

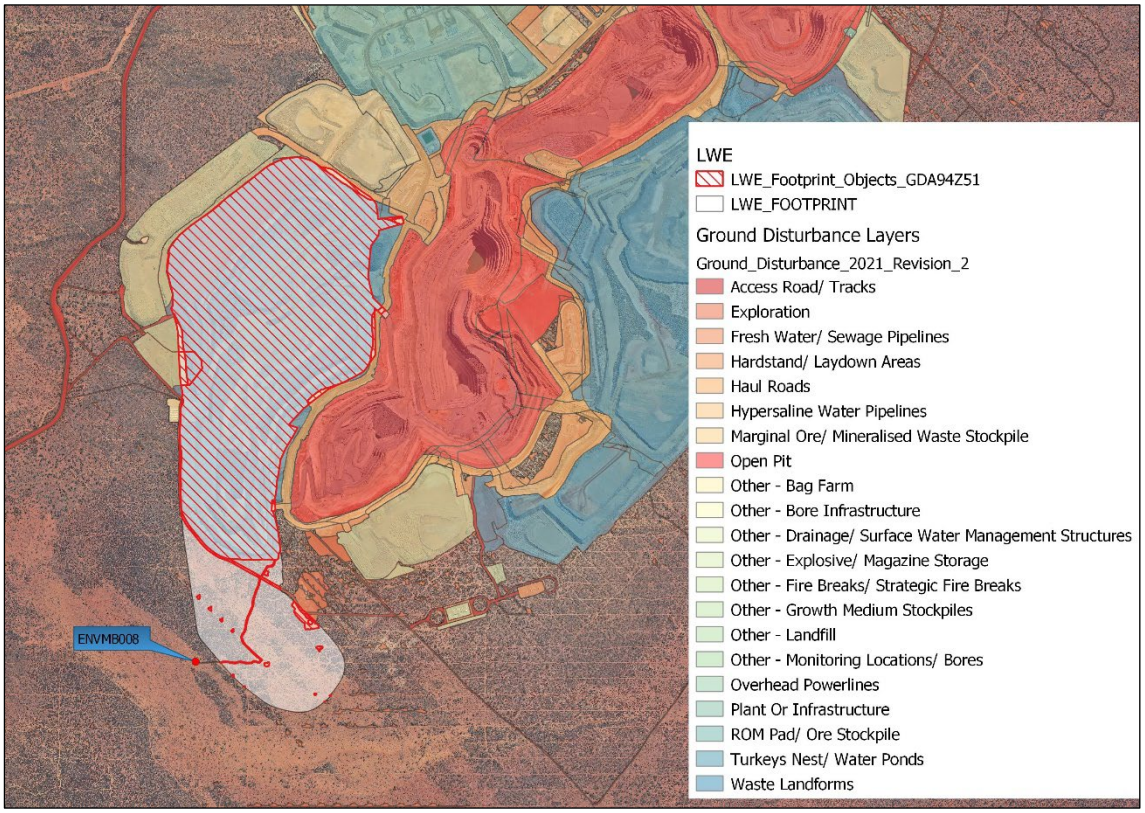


Figure 4: LWE

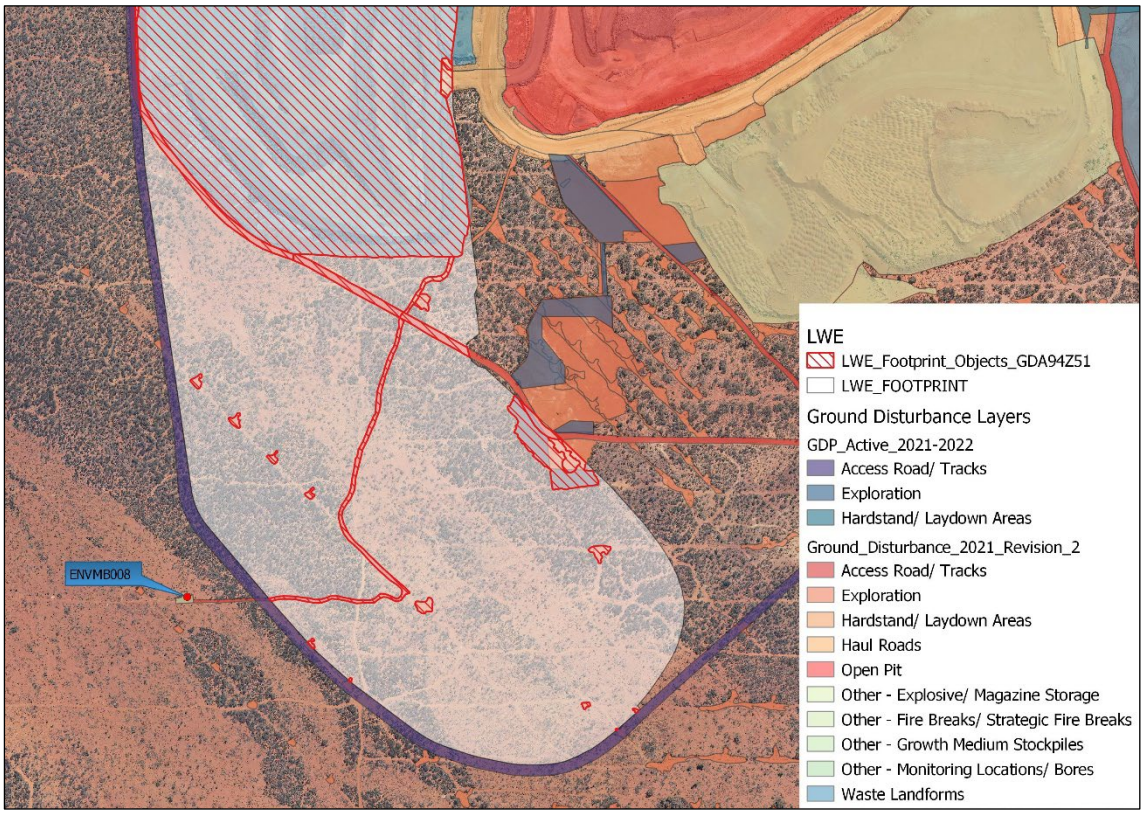


Figure 5: LWE – HSS2 Development

Appendix H – Vegetation Monitoring Report