TROPICANA JOINT VENTURE
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19 December 2019

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 – 2018/2019 Annual Compliance Assessment Report

In accordance with Condition 4-6 of Ministerial Statement No. 839, please find enclosed the 2019 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 2018 – 23 September 2019.

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

Yours faithfully

Rosemarie Lane **Superintendent: Environment Tropicana Gold Mine**

Enclosed: CAR20191218 "Tropicana Gold Mine Ministerial Statement No 839 Annual Compliance Assessment Report"

AngloGold Ashanti Australia Ltd is the Manager of the Tropicana Joint Venture and is acting as agent severally for each of th e Joint Venturers in their respective percentage interests in the Joint Venture from time to time, with such interests currently being AngloGold Ashanti Australia Limited 70% and Independence Group NL 30%. The obligations and liabilities of the Joint Venturer s are several only, in accordance with their respective percentage interests.

Tropicana Joint Venture

Tropicana Gold Mine (TGM)
Ministerial Statement No 839
Annual Compliance Assessment Report
24 September 2018 to 23 September 2019

20 December 2019

Document Reference: CAR20191220

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	M. Stingemore	R. Lane	16 December 2019
Final – for review and release	M. Stingemore	S. Perkins	18 December 2019

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Appendix 7: Ground Disturbance Permits (GDPs)

Appendix 8: Vegetation Monitoring Report

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 operation is a joint venture (Tropicana JV) between AngloGold Ashanti Australia Ltd (70% stakeholder and manager) and Independence Group NL (30% stakeholder).

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 for the preceding 12 months.

This report has been prepared to meet Condition M4.6 and covers the period 24 September 2018 to 23 September 2019. The TGM Ministerial Statement audit compliance table updated for the reporting period is provided in Appendix 1.

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).

This is the ninth Compliance Assessment Report (CAR) prepared by 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.

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 Volume. September 2014	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.
		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.

Application	Date Approved	Element	Original Proposal	Approved Change to Proposal
		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.
		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.

2 Current Status

Key activities undertaken during the reporting period included:

- Continuation of mining in the Tropicana, Boston Shaker and Havana Open Pits.
- Commencement of the Boston Shaker Underground portal and decline.
- Continued Processing plant operation and gold production.
- Groundwater abstraction from the Process Water Supply Borefield.
- Commissioning of the expanded Kamikaze Borefield.
- Expansion of the TGM Village.

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
General		
Project Life	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.
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.	Total current disturbance footprint: 2959.89 ha Operational Area: 2134.31 ha Water Supply Area: 203.40 ha Infrastructure Area: 622.17 ha
Physical Elements		
Number of pits	Up to 4	3 current Open Pits (Tropicana, Havana and Boston Shaker)
Open pit voids	Not more than 400 hectares	Current open pit area: 321.76 ha
Maximum length of pit/s	6 km (if pits combine)	Current max. open pit length: 4.16 km (Havana/Tropicana combined)
Maximum width of pit	1.5 km	Current maximum width of Havana pit is approximately 780 m
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: 628.92 ha Current max height: 407.2 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		
Overburden and waste	Not more than 800 mt placed in waste landforms.	221.75 Mt of waste material placed in waste landforms LEA – 120.63 Mt LTA – 15.4 Mt LWE – 85.72 Mt
Water Supply	Up to 9 GL / year	3.84 GL in reporting period.
Dewatering Rate	1,000 to 5,000 kL/day	146,100 kL total volume dewatered during reporting period. Average dewatering rate of 400 kL per day.

Note – Data recorded as at 30 September 2019

3 Compliance

The 2018-2019 reporting period represents the ninth reporting period for the TGM and the sixth full operating period for the TGM, with the processing plant commencing operation during September 2013.

During the 2019 reporting period the Tropicana JV was compliant with all ministerial conditions associated with the Conditions of MS839. A completed audit table providing further detail on compliance with conditions is included in Appendix 1.

In accordance with the CAP, the CAR for the 2019 reporting period will be made publicly available once the Tropicana JV has received acknowledgement from the DWER that the report has been accepted. A copy of the CAR 2019 will then be placed 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 2019 reporting period groundwater, storm water, vegetation condition and fauna monitoring programs were undertaken and the results were analysed. Details of monitoring activities conducted throughout 2019 and further analysis on monitoring results is provided to the Department of Mines, Industry Regulation and Safety (DMIRS) and Department of Water and Environmental Regulation (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) was undertaken throughout the reporting period. A summary of results from the sampling events are provided in Appendix 3. Results obtained from these monitoring bores were compared with 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.

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 and Figure 7 provide an update on the status of the Seepage Mitigation Project.

Table 3: Current Equiped TSF Recovery Bores

TSF Recovery Bore	Date of Pump Installation	Location	Cumulative Abstraction (m3/hr)
TSFRB005	September 2016	North of TSF	~ 190 m3 /hr
TSFRB007	September 2016	North of TSF	
TSFRB010	October 2016	North of TSF	
TSFRB009	December 2016	North of TSF	
TSFRB017	July 2018	North of TSF	
TSFRB019	July 2018	South of TSF	
TSFRB022	November 2018	South of TSF	
TSFRB006A	December 2018	North of TSF	
TSFRB049	April 2019	South of TSF	
TSFRB025	April 2019	TSF Wall	
TSFRB038	May 2019	South of TSF	
TSFRB041	July 2019	North of TSF	
TSFRB057	July 2019	North of TSF	
TSFRB050	July 2019	South of TSF	
TSFRB061	June 2019	South of TSF	
TSFRB058	October 2019	West of TSF	
TSFRB059	November 2019	West of TSF	
TSFRB063	December 2019	West of TSF	

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 4.

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 2019 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 2019 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 2019 monitoring program was undertaken by Eco Logical Australia Pty Ltd in September 2019 (Appendix 8). The monitoring program involved assessment of high resolution digital multi-spectral imagery and field survey verification at 112 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 six sites across all of the core areas (Operational Area, Infrastructure Area and Water Supply Area), in comparison with twenty-eight sites in the 2018 monitoring program. All changes that were detected and exceeded the threshold values for Trigger 1 for the survey were assessed to be due to either observer differences or non-mining related factors. In numerous cases, only the impact sites were burned in previous years resulting in deviations over 25%. Site specific responses of vegetation response following fire and the very dry conditions in the ten months preceding the survey are also thought to have influenced vegetation cover and health.

Overall, no impact sites in any of the three core areas (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 not to be 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 to support the TGM Cyanide Code certification.
- 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 2018 to 23 September 2019).

Date: 18 December 2019

Stephen Perkins
General Manager
Tropicana Gold **Mine**
AngloGold Ashanti Australia

FIGURES

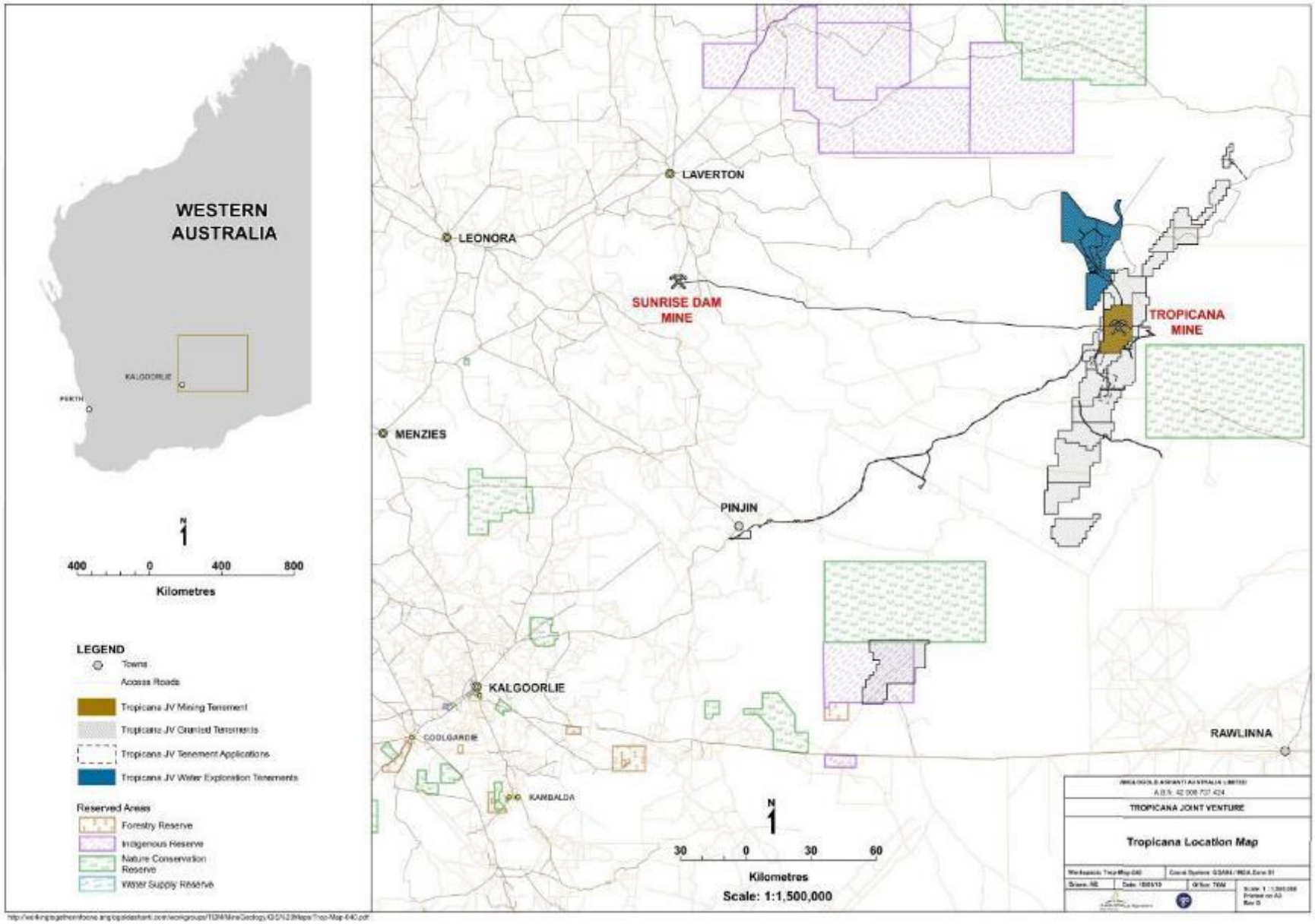

Figure 1: General Location of the Tropicana Gold Mine

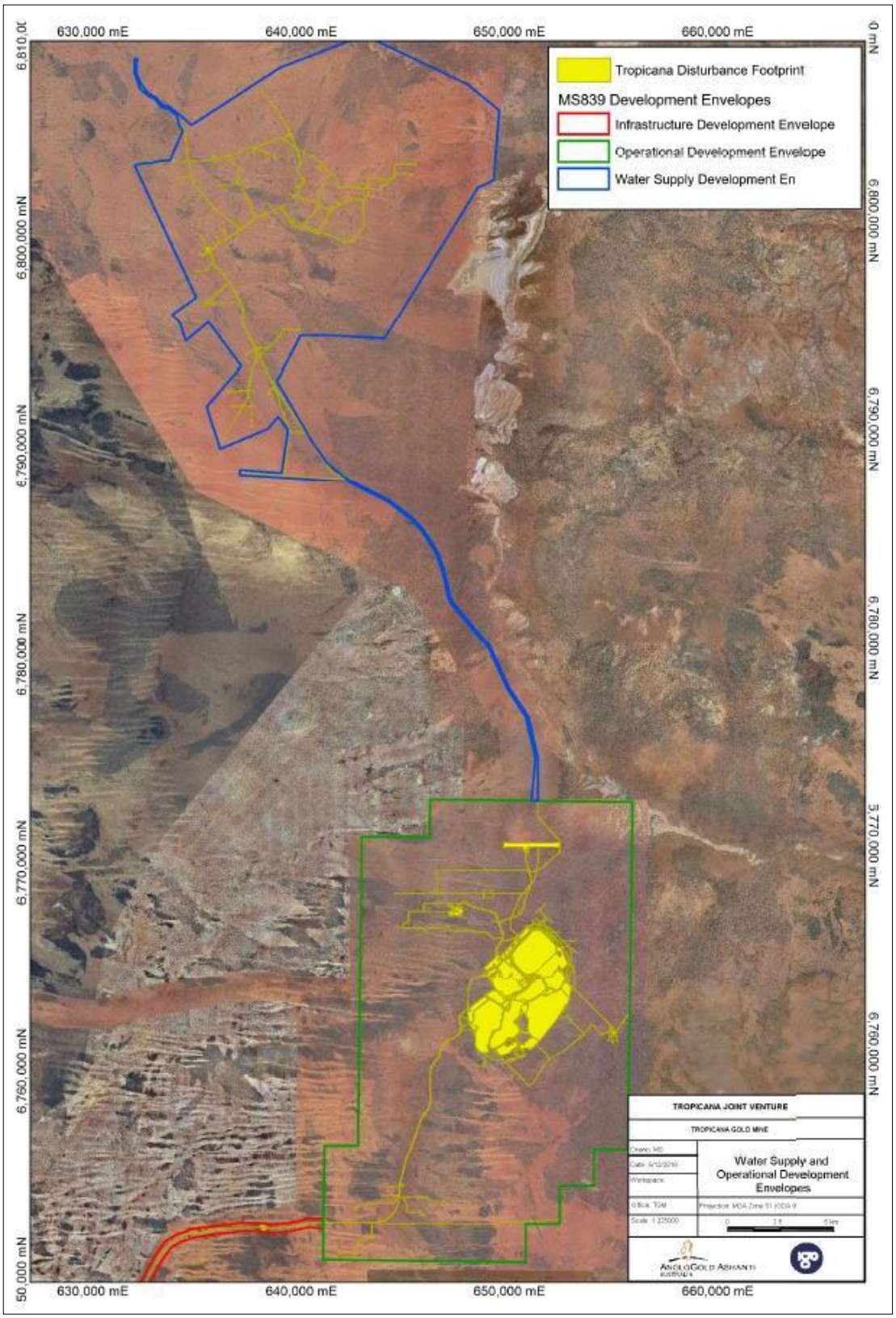

Figure 2: Water Supply and Operational Development Envelopes

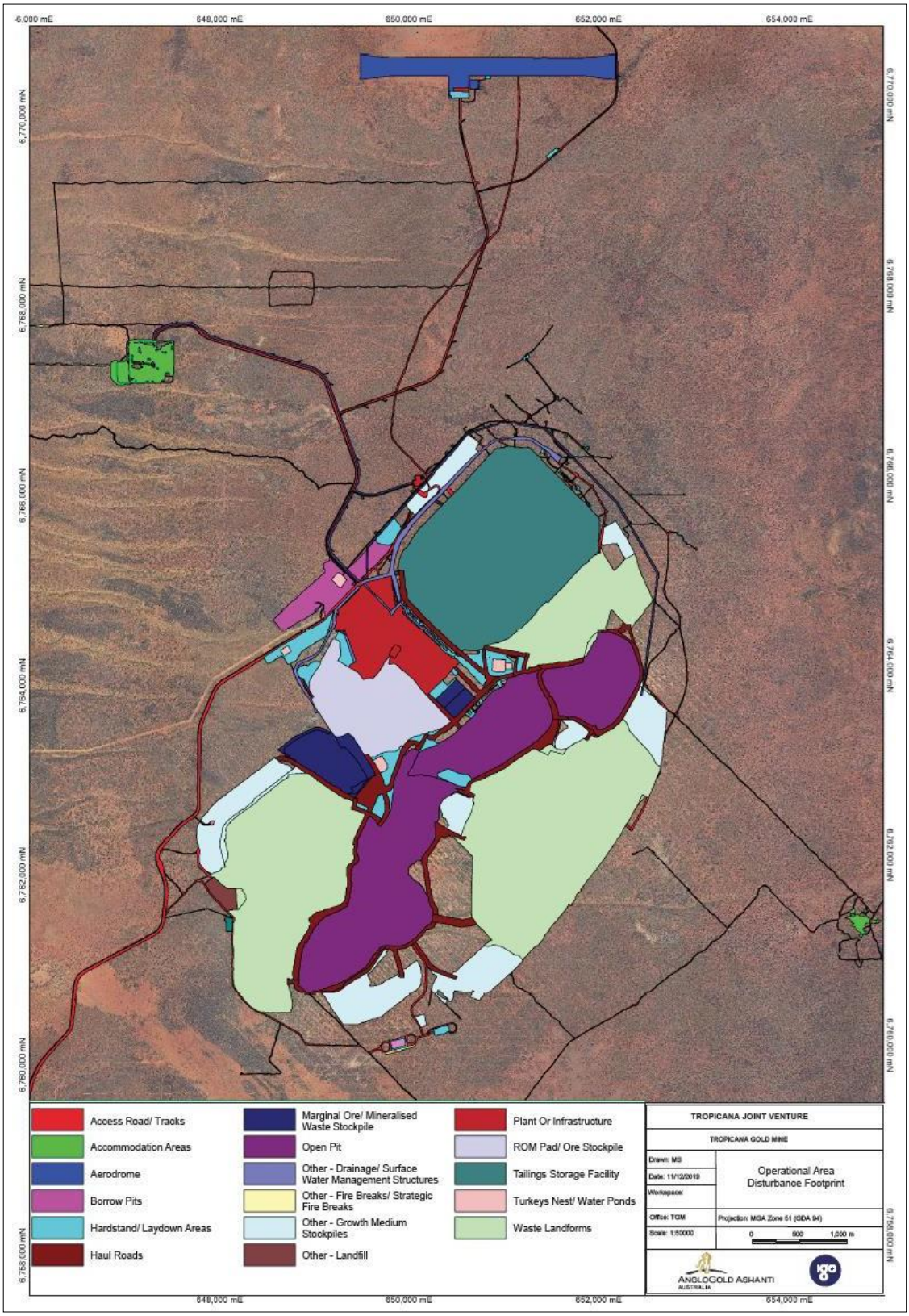

Figure 3: Operational Area Disturbance Footprint

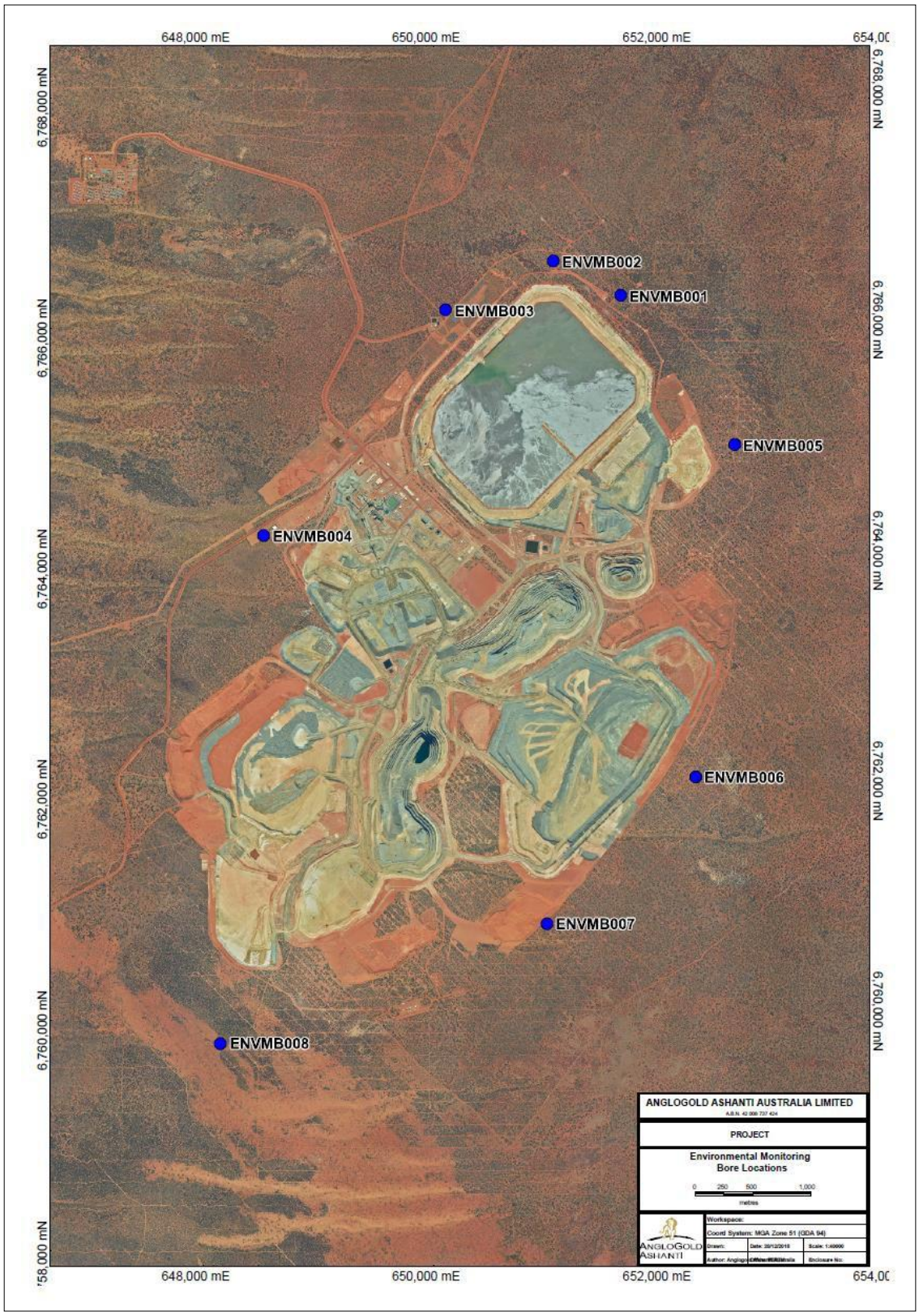

Figure 4: MS839 Groundwater Monitoring Bore Locations

Figure 5: Storm Water Monitoring Locations

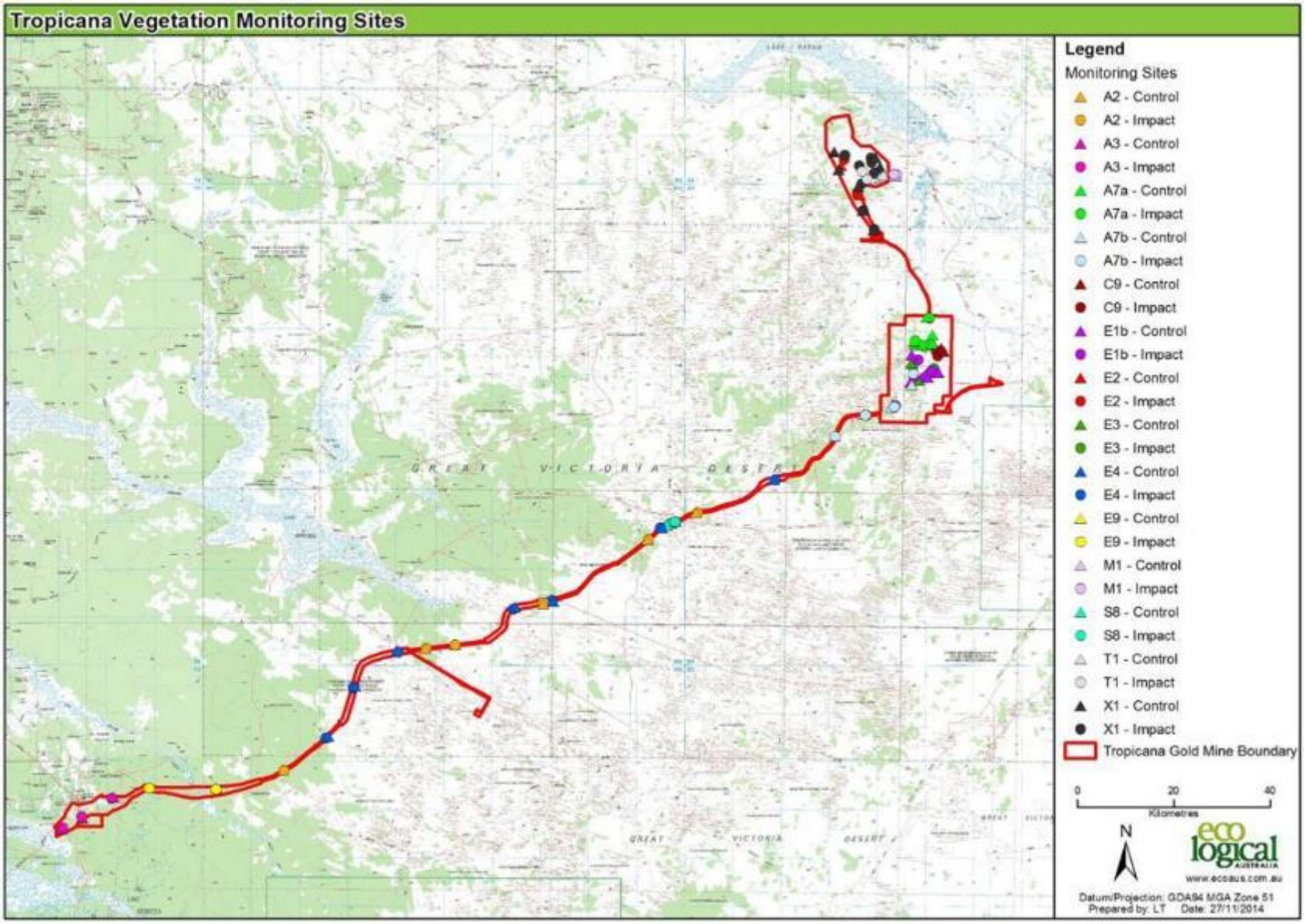

Figure 6: Vegetation condition monitoring quadrat locations (2015)

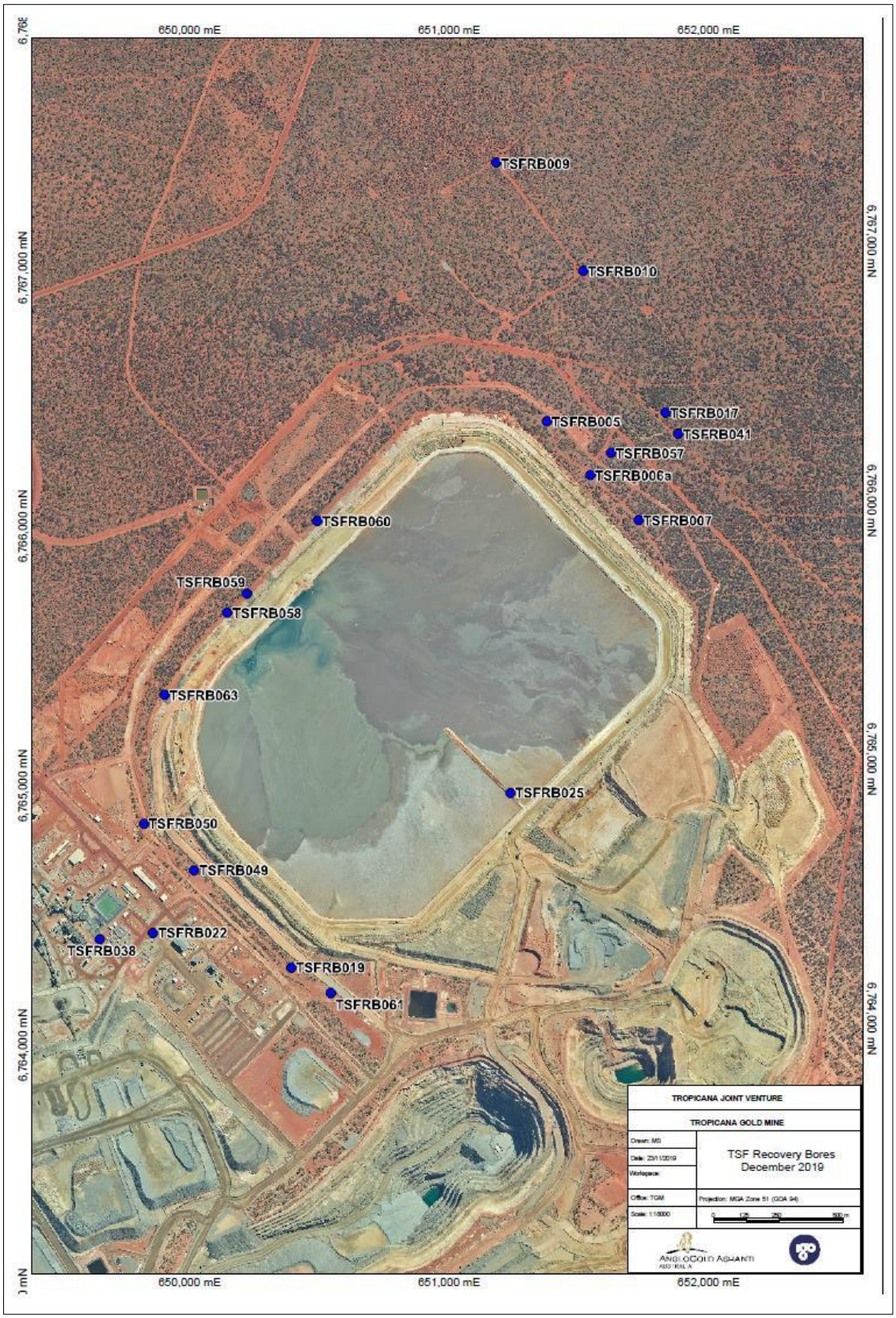

Figure 7: TSF Recovery Bores (December 2019)

SITE PHOTOGRAPHS

Plate 1: Photo monitoring of TSF artificial water sources [TSF ART 7] – Kangaroos (December 2018)

Plate 2: Photo monitoring of TSF artificial water sources [TSF ART 2] – Wedge Tailed Eagle (December 2018)

Plate 3: Photo monitoring of TSF artificial water sources [TSF ART 4] – Emus (January 2019)

APPENDICES

Appendix 1 – Audit Table

Office of the Environmental Protection Authority

GOVERNMENT OF WESTERN AUSTRALIA

AUDIT TABLE

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); 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 2019	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	On going	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	During the reporting period, AGAA advised DWER of a change of proponent address. The change of address notification was confirmed by DWER in a letter dated 17 June 2019 (DWER Ref: DWERA-000439).
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 OEPA Desktop Verification Audit May 2014 (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 OEPA Desktop Verification Audit May 2014 (CA03-2013-0078).

AUDIT TABLE

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

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 OEPA Desktop Verification Audit May 2014 (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 2019 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 2019 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.

AUDIT TABLE

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

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 2019 CAR will be the ninth annual CAR prepared in accordance with the CAP and has been submitted prior to 24 December as required. Following acceptance of the 2019 CAR by the DWER, the report will be made publicly available on the Tropicana JV website (www.tropicanajv.com.au).
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) was identified within operational area and infrastructure corridor in the baseline surveys and was classified as DRF. Since the baseline surveys, the conservation status of *Conospermum toddii* remains classified as a Priority 4.
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 2019. A brief overview of the report findings is provided in the 2019 CAR. A copy of the 2019 Vegetation Monitoring Report is provided as Appendix 8.

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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 during September 2019 and a final report received on 12 December 2019 (Appendix 8). A brief overview of the report findings is provided in Section 4 of the 2019 CAR. The 2019 monitoring program identified six (6) paired monitoring locations where the impact site showed a 25% decline in cover as compared to the reference site. All changes that exceeded the 25% decline in cover threshold were assessed to be predominately due to either observer differences or non-mining related factors. Site specific responses of vegetation following lightning initiated fire and the very dry conditions in the ten months preceding the survey are also thought to have influenced vegetation cover and health. A report will be provided to DWER prior to the 3 January 2020 in accordance with the requirements of Condition 5-3.
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	Where a decline in vegetation cover was identified, mining related activities were ruled out as the cause. Declines in cover were assessed to be associated with observer difference, site specific response to lightning-initiated fires and the very dry conditions in the 10 months preceding the survey. As the declines in vegetation cover are 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 publically 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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PROJECT: Tropicana Gold Project, Shire of Menzies, Shire of Laverton and The City of Kalgoorlie-Boulder

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 updated during 2014 and approved by the then DPaW on 30 December 2014. In accordance with Condition 6.2, 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 has recommended that the TSCMS be aligned to the structure of a contemporary Management Plan as per EPA Guidance April 2018. An updated final TSCMS is anticipated to be submitted to DWER in Quarter 1 2020. An internal compliance audit against the updated Threatened Species and Communities Management Strategy requirements has been conducted (Appendix 6). Internal ground disturbance permits (GDP) are issued prior to any clearing activities. Examples of GDPs approved during the reporting period are provided in Appendix 7.
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 has recommended that the TSCMS be aligned to the structure of a contemporary Management Plan as per EPA Guidance April 2018. An updated final TSCMS is anticipated to be submitted to DWER in Quarter 1 2020. The final version will be uploaded to the Tropicana JV website.

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839:M6.3	**Threatened Species**	The proponent shall make the Tropicana Gold Project Threatened Species and Communities Management Strategy referred to in 6-1 publically 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 Threatened Species and Communities Management Strategy is available on the Tropicana JV website (www.tropicanajv.com.au/sustainability).
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 OEPA Desktop Verification Audit May 2014 (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 OEPA Desktop Verification Audit May 2014 (CA03-2013-0078).

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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 OEPA Desktop Verification Audit May 2014 (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 OEPA Desktop Verification Audit May 2014 (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. 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	1. As per PIMB fact sheet 1 Making documents publicly available. Preparation of report as per criteria following finalisation of pipeline installation and submit to OEPA within 21 days. Report published in a manner approved by CEO of OEPA	Trench Inspection Fauna Report Document available on website (and letter to CEO to confirm) Copy of Document to DEC Library and PIMB (OEPA)	CEO		Overall	Trench inspection fauna report will be submitted no later than 21 days after the completion of pipeline installation	Complete	Assessed as 'Completed' by OEPA Desktop Verification Audit May 2014 (CA03-2013-0078).
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	An internal audit of water monitoring results against the Australia Water Quality Guidelines for Fresh and Marine Waters (2000) was conducted in the 2014 CAR. The 2014 internal audit found that: • Tropicana baseline data naturally exceeds a number of Guideline trigger values and/or the Guideline trigger values are too low to be detected by the NATA accredited laboratory utilised by TGM for water analysis. • The Guidelines were developed for fresh and marine waters. The groundwater surrounding TGM does not align with either fresh or marine waters, with water quality ranging from saline to hypersaline. The 2014 Internal Audit established site specific triggers for groundwater quality based on baseline data. 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 3. 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

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										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 3). • 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 is consistent with results for 2016, 2017 and 2018. 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 2019 CAR. Opportunistic stormwater (surface water) monitoring has been conducted following rainfall events greater than 20 mm in 24 hours (Appendix 4). Sampling of stormwater runoff is undertaken at set monitoring locations within the disturbed footprint of the operational area.
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 3). Opportunistic Stormwater (surface water) monitoring has been conducted following rainfall events greater than 20 mm in 24 hours (Appendix 4). An internal audit of the monitoring methodology against the Australian Guidelines for Water Quality Monitoring and Reporting (2000) was undertaken (Appendix 5).

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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 2019 CAR (Appendix 3 and Appendix 4). Results of the water quality monitoring activities are also provided to: • The Department of Mines, Industry Regulation and Safety (DMIRS) through the Annual Environmental Report (AER) in January each year. • The Department of Water and Environmental Regulation (DWER) through the Prescribed Premise Licence Annual Environmental Report in March each year.
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.
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 2019 CAR (Appendix 3 and Appendix 4).
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	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 2019 CAR by the OEPA, the report, including monitoring results contained in Appendix 3 and 4, will be made publicly available on the Tropicana JV website (www.tropicanajv.com.au)

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			the CEO to confirm that advertising or lodgement on website has been completed. In accordance with CAP							
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 109.01 ha of rehabilitation has been completed to date. During the reporting period, primary rehabilitation earthworks were completed on a small area of the LWE waste landform. An update on rehabilitation activities undertaken during the reporting period is provided in Appendix 2. 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 2016/2017 in accordance with the 'Guidelines for Preparing Mines Closure Plans' (May 2015) and submitted to DMIRS in February 2017. The 2017 TGM Mine Closure Plan has since been accepted by DMIRS on 11 October 2018. Reference sites to monitor the coverage of weeds within rehabilitated areas have not yet been established. 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.
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 is no requirement to monitor the rehabilitation success on these landforms at this time.
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 2016/2017 in accordance with the 'Guidelines for Preparing Mines Closure Plans' (May 2015) and submitted to DMIRS in February 2017.

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										The TGM 2017 Mine Closure Plan was approved by DMIRS on 11 October 2018. The next update is due for submission to DMIRS in 2022. 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 2016/2017 in accordance with the 'Guidelines for Preparing Mines Closure Plans' (May 2015) and submitted to DMIRS in February 2017. The TGM 2017 Mine Closure Plan was approved by DMIRS on 11 October 2018. 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 2016/2017 in accordance with the 'Guidelines for Preparing Mines Closure Plans' (May 2015) and submitted to DMIRS in February 2017. The TGM 2017 Mine Closure Plan was approved by DMIRS on 11 October 2018. 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.
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 2 – Rehabilitation Summary

MEMORANDUM

Date: **6 November 2019**

To: Environment Team (Safety & Environment Department)

From: Matthew Stingemore

Subject: 2019 Rehabilitation Summary

1 Rehabilitation Activities

A total of 109.01 ha of rehabilitation has been completed for TGM.

Table 1: Summary of rehabilitation completed for TGM

Disturbance Category	Rehabilitation (ha)
Access Roads / Tracks	0.38
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
TOTAL	**109.01**

1.1 Reporting Period

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

- Completion of primary earthworks on a rehabilitation trial section of the LWE Waste Landform.
- Review and update of the financial provisioning for mine closure.
- Contract finalised with a seed merchant to pick and supply TGM with provenance seed from the Great Victoria Desert to meet rehabilitation requirements.
- Establishment of rehabilitation reference sites to assist in planning species for rehabilitation programs, defining potential realistic targets for completion criteria and future assessment of rehabilitation areas.

1.2 Previous Rehabilitation

During 2012-2013, borrow pits, turkeys nests and related infrastructure along the Pinjin Access Road corridor which was 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.

Waste landform rehabilitation trials were commenced in 2015 on areas of LWE and LEA. Operational changes and observations of rehabilitation success have fed into current TGM waste landform designs. Rehabilitation trials on LWE and LEA involved re-profiling waste landforms to 15 degrees and placement of growth medium up to one metre thick.

2 Waste Landform Rehabilitation Design

During previous reporting periods, extensive work on materials characterisation and erosion modelling was undertaken to determine the TGM waste landform rehabilitation strategy. The strategy has been developed to create a safe, stable and functioning landform which is consistent with the surrounding landscape. The strategy identifies actions to increase the resilience of the slopes against erosion and sediment management and is cognisant of ensuring a buildable design utilising the existing mine fleet.

Based on the outcomes of material characterisation and erosion modelling, the key aspects of the waste landform rehabilitation strategy proposed to be implemented at TGM are:

- Batter and Berm
  A 20 m wide berm, backsloped at 5 degrees with the capacity to withstand a 1 in 100 year storm event will be incorporated into the landform slope profile. Erosion modelling demonstrated that a 10 m berm would have sufficient capacity to withstand a 1 in 100 year storm event – the adoption of a 20 m wide berm further reduces the risk of erosion potential on the waste landform slopes.

  The 20 m berm achieves a key aim of the rehabilitation strategy of demonstrating an achievable and buildable design based on the existing mining fleet. The 20 m berm provides for access by the existing mine fleet to the mid-slope of the batter profile, enabling progressive rehabilitation and cost-effective placement of rehabilitation materials.

- 15 degree slope profile
  The adoption of a final slope profile of 15^0 delivers waste landform slope profiles at comparable angles to local sand dunes. Erosion modelling shows that the Growth Medium Sand and Caprock materials are stable over slope angles approaching 22 degrees (or 40%). Implementation of a 15^0 slope profile provides additional erosion risk reduction for the waste landform design and supports the buildable rehabilitation design strategy.

- Cover Material
  To guard against wind erosion, it is proposed to use a 1 m layer of Growth Medium Sand (GMS): Caprock mixture at a ratio of 1:3 for the top section of each landform batter. The dominant Caprock will prevent wind erosion, particularly on the windward (eastern) side of landforms. Below the GMS/Caprock mixture will be a 1 m layer section of GMS incorporating available vegetative material (VMS), with available VMS preferentially placed on the prevailing wind side of the landform. The vegetative debris in the VSM will also guard against wind erosion whilst providing a medium to trap resources such as seed, water and organic matter. The bottom (and least susceptible) of the waste landform sections will be comprised of GMS. Therefore the entire surface area of batters will comprise cover material with high infiltration rates and the upper sections of each batter protected against wind erosion.

  The 20 m berms and top surface of the waste landforms will use Growth Medium Gravel (GMG) as the cover material. GMG has a high slit and clay faction resulting in a high water holding capacity

and plant available water content which will support revegetation, providing a niche for deeper rooted vegetation to establish.

- Surface Water Management

  Erosion modelling clearly shows that GMS and Caprock yield negligible surface water run-off and sediment loss across all modelled landform designs. As a risk reduction strategy, waste landforms will have sediment run-off containment structures (e.g. toe-bunds and/or containment cells) constructed at the toe of slopes to prevent runoff and sediment being released directly to the environment.

  Cell bunds will be installed on the top of the waste landform and/or berms at strategic points where a post-construction survey pick-up indicates the potential for concentration of water flow.

  A substantial crestal bund will be established at the top of the waste landform (at least 2 m high and the width of a dump truck) to minimise the risk of the top surface contributing runoff to batters. The crestal bund will be thoroughly compacted and contiguous with the outer batter profile, having the same treatments applied to it as the batter profile.

  The upper section batters comprising the 1:3 mixture of GMS:Caprock will be contour ripped to assist in the erosion control through promoting infiltration and reducing the velocity of any runoff which may occur. The upper surface of the waste landform will also be ripped to reduce compaction, promote infiltration and trap resources (i.e. water, seed, organic matter) to promote revegetation.

- Revegetation

  Revegetation of waste landforms will be achieved by application of local provenance seed mixes tailored to the specific growth mediums applied to the landform. The application of a one metre cover layer seeks to provide a sufficient depth of growth medium to increase the amount of plant available water and reflects the typical depth of vegetation root zones in the arid area. Further research will be undertaken to assess and validate the optimal depth of cover for the growth mediums available.

  Baseline vegetation community studies indicate that the vegetation communities and flora species located within the TGM disturbance footprint. These vegetation communities were supported by the underlying growth medium/s which were / are stockpiled for use in rehabilitation. These vegetation communities and flora species will provide a guide as to the tailored seed mixes to be established for waste landform rehabilitation.

Further details on the waste landform rehabilitation strategy, materials characterisation and erosion modelling are contained in the ‘Operational Area Waste Landform Section 45C – October 2016’, application submitted to the OEPA in October 2016.

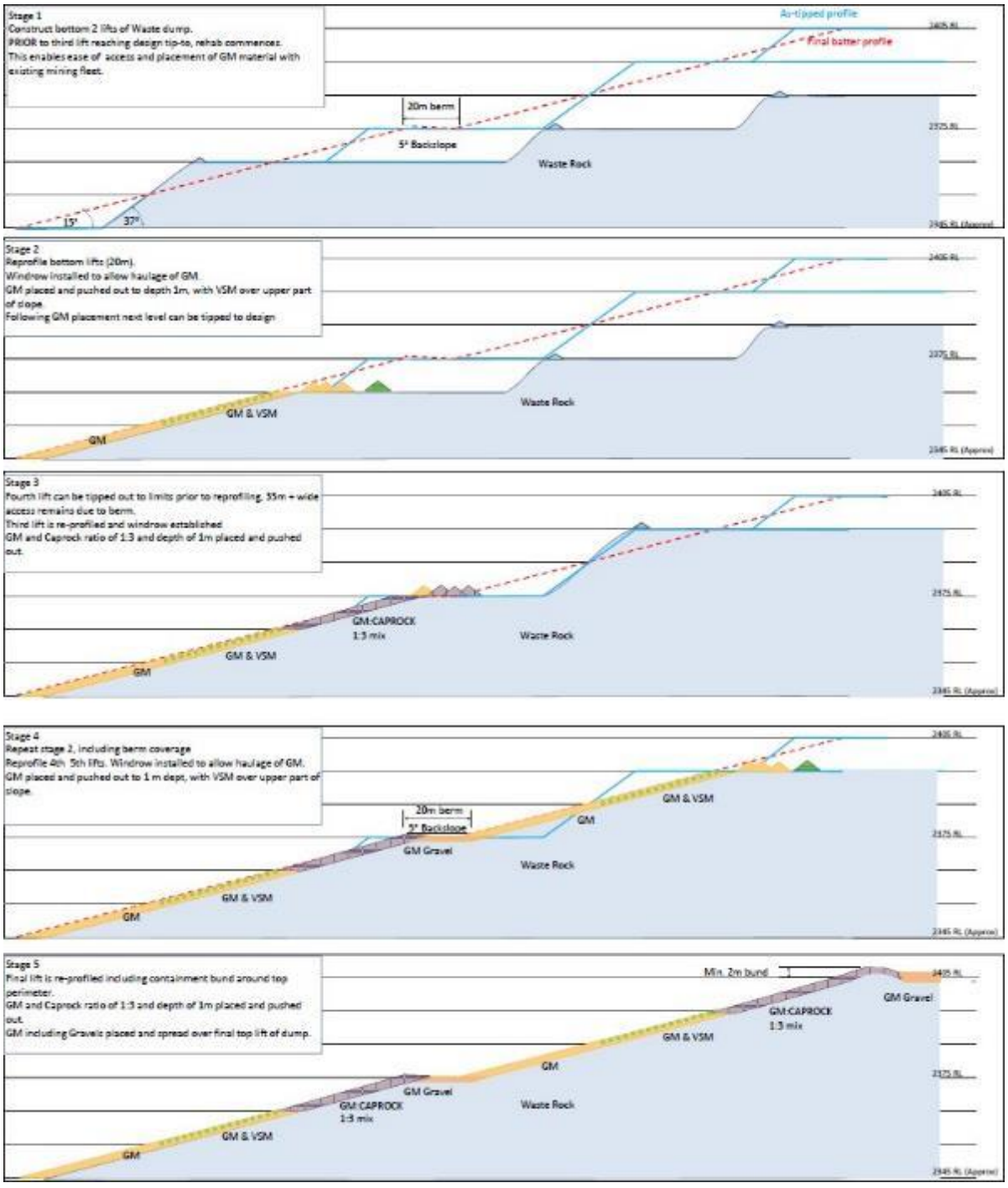


Figure 1: Evolution of waste landform rehabilitation from construction to completion.

3 Mine Closure Plan

The 2017 TGM Mine Closure Plan (MCP) was approved by DMIRS in October 2018 (REG ID 64407).

An updated MCP is required to be submitted to DMIRS in January 2022.

Appendix 3 – Groundwater Monitoring Summary

MEMORANDUM

Date: **21 November 2019**

To: TGM Environment Team

From: Nicolle Britland

Subject: 2018/2019 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".

2 2018-2019 Groundwater Monitoring Results

During the reporting period (24 September 2018 – 23 September 2019) eight environmental monitoring bores (ENVMB001 to ENVMB008) were sampled on a monthly basis for water levels and water quality; with an expanded water quality analysis suite collected on a quarterly basis. 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 is shown in Figure 5 (Attached).

2.1 Groundwater Levels

Monthly groundwater levels for each bore during the reporting period are presented in Figure 1.

- Monitoring bores ENVMB004-008 reported water level fluctuations of less than 0.5 m over the reporting period;
- ENVMB003 (west of the TSF) reported a 1.3 m rise in groundwater level;
- ENVMB002 fluctuated slightly over the reporting period, with an overall rise of 0.66 m; and
- ENVMB001 reported a decline of 2.68 m in response to abstraction bore pumping during the reporting period.

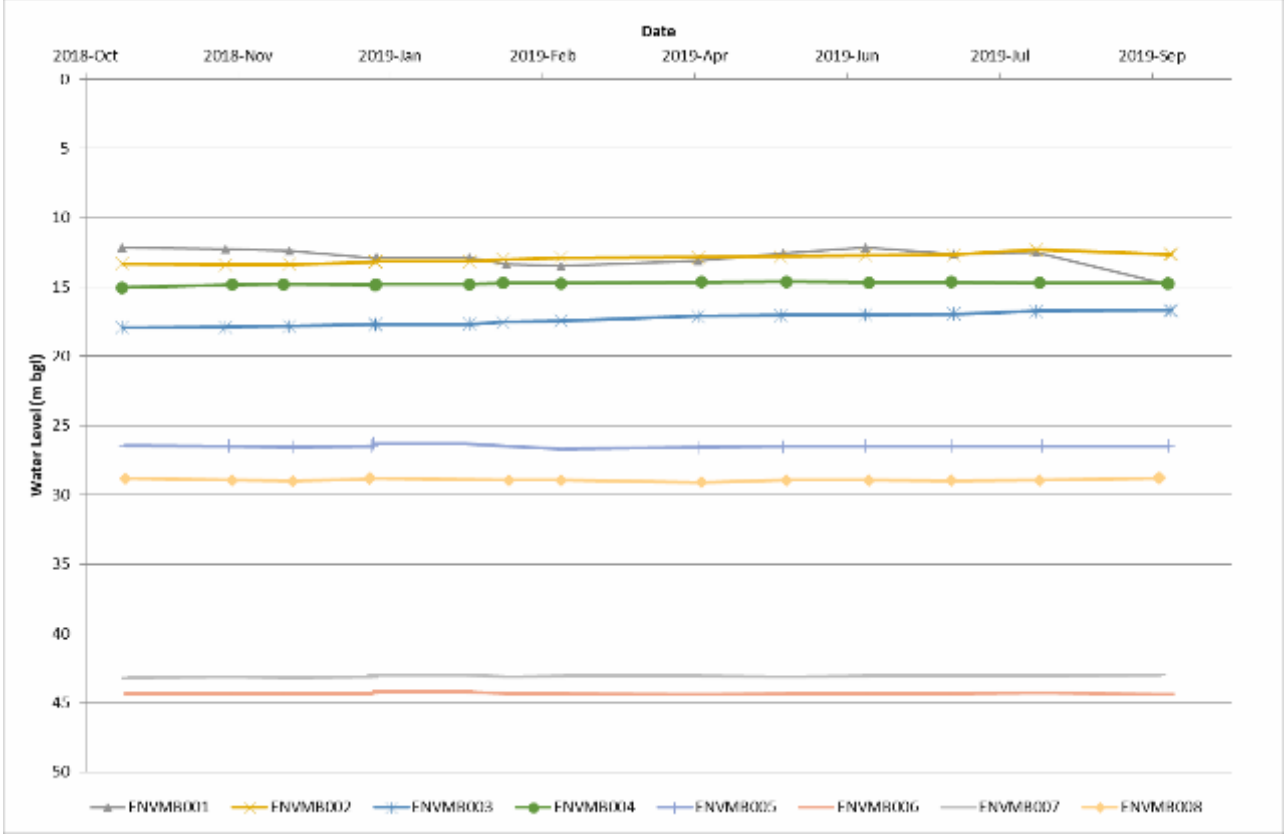


Figure 1 Groundwater Levels in Environmental Monitoring Bores 2018-2019 Reporting Period

2.2 Groundwater Quality

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

2.2.1 pH

Laboratory pH results are presented in Figure 2 below.

- pH in all bores was within trigger level thresholds; and
- The sharp rise observed in the August sample for ENVMB002 appears to be anomalous and is attributed to a change in sample methodology to the use of a bailer due to pump failure during the monitoring period.

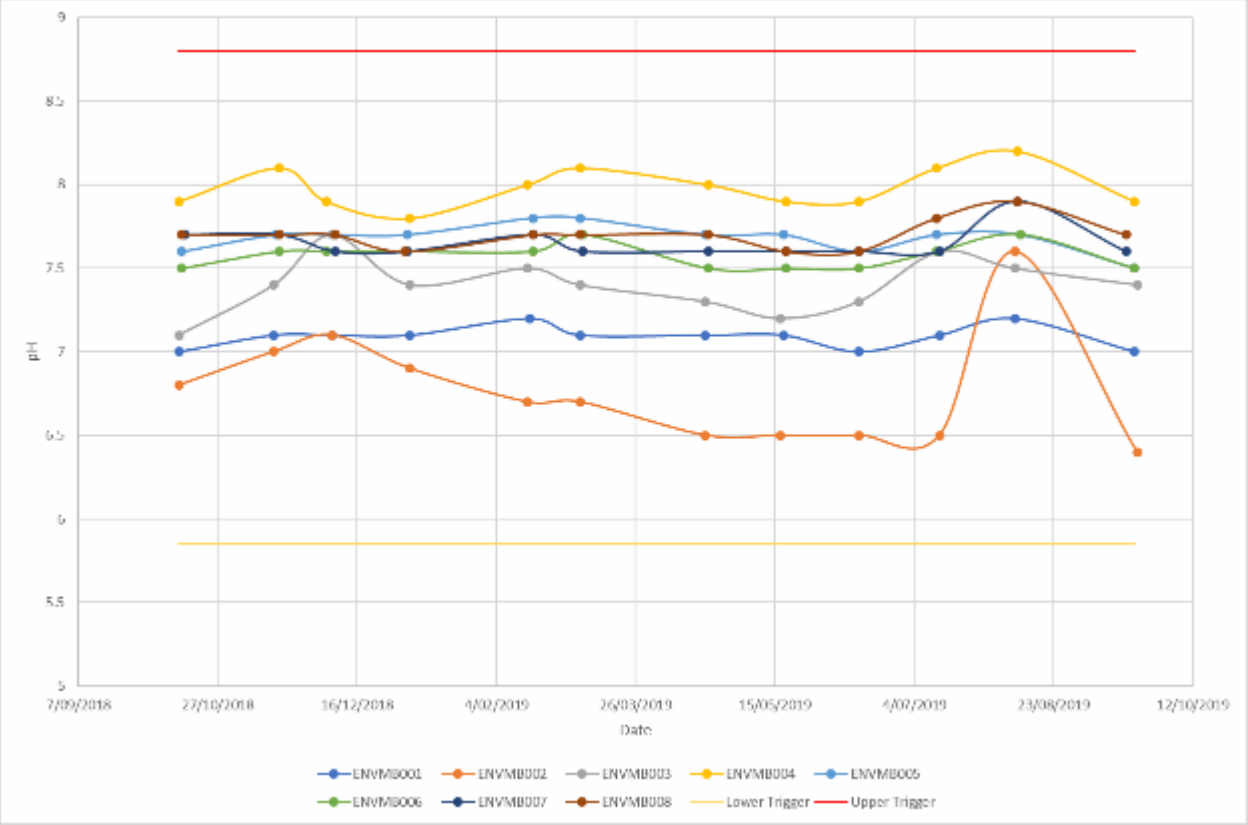


Figure 2 Laboratory pH in Environmental Monitoring Bores 2018-2019 Reporting Period

2.2.2 Total Dissolved Solids

Concentrations of total dissolved solids (TDS) were consistent with previous reporting periods, as summarised in Figure 3.

- 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;
- TDS in ENVMB001 remained hypersaline, and above the upper trigger value, as in previous periods, with a slight upward trend; and
- ENVMB002-003 and 005-008 were all within trigger value thresholds, ranging from saline to hypersaline and were consistent with previous years.

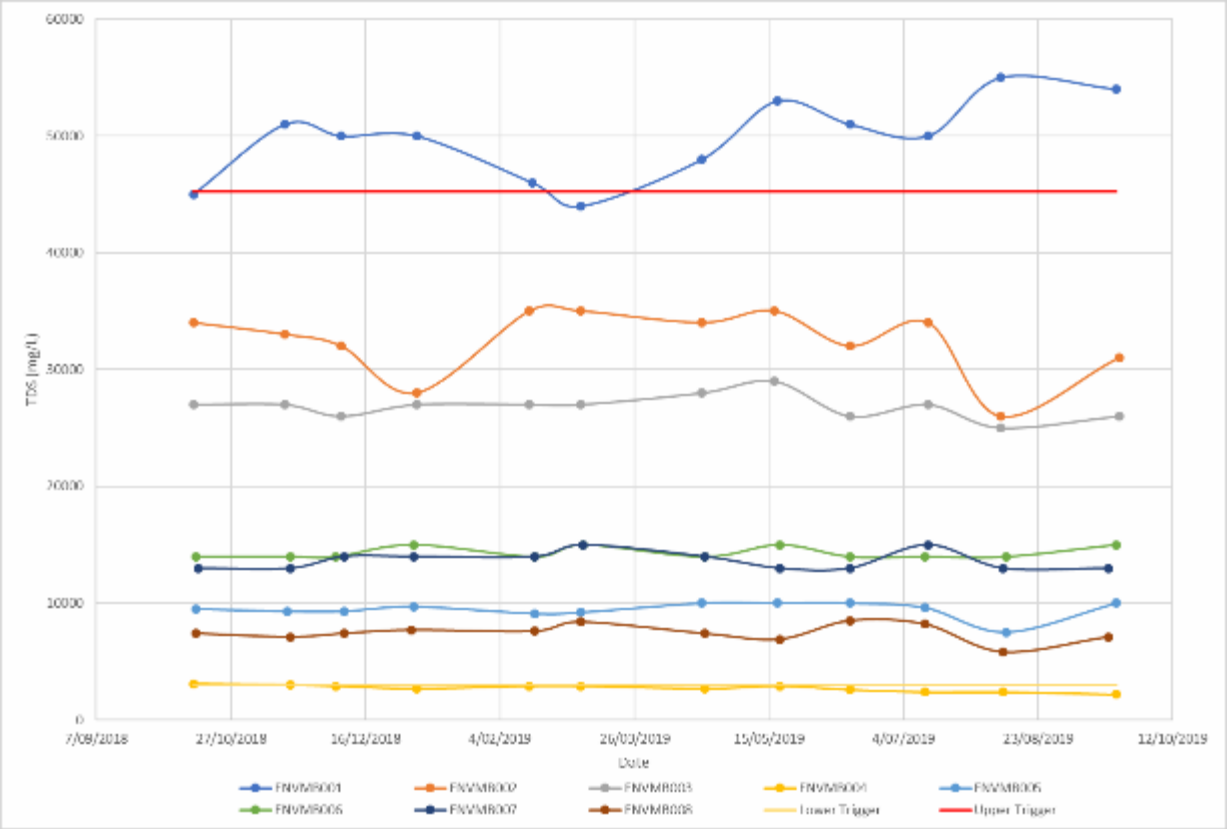


Figure 3 Total Dissolved Solids in Environmental Monitoring Bores 2018-2019 Reporting Period

2.2.3 Weak Acid Dissociable Cyanide

Weak acid dissociable (WAD) cyanide results are presented below (Figure 4).

- WAD cyanide was not reported above the laboratory limit of reporting (LOR) in bores ENVMB002-006 or 008;
- A single monitoring event in September 2019 reported WAD CN in ENVMB007. This bore has not reported CN in the past and is not considered to be down-hydraulic gradient of the TSF or any other CN sources. TGM therefore infers that this is an anomalous result, and may the result of insufficient decontamination between monitoring locations;
- WAD CN was reported at concentrations between LOR and 0.04 mg/L at ENVMB001 during eight monitoring events, which is a comparable frequency to 2018 results. This monitoring bore is directly down-hydraulic gradient from the TSF and within the cone of depression of abstraction bores in this area.

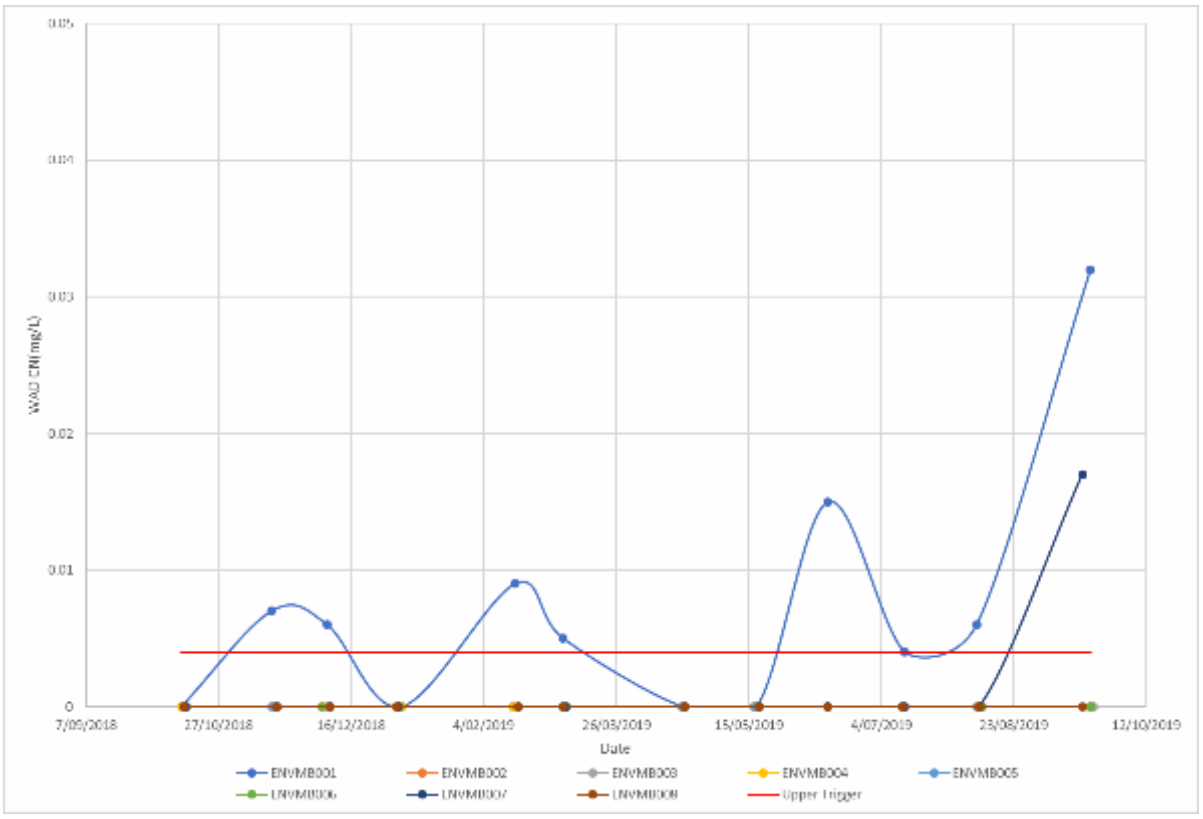


Figure 4 WAD Cyanide in Environmental Monitoring Bores 2018-2019 Reporting Period

2.2.4 Major Cations and Anions

Quarterly monitoring results for major ionic species are presented in Table 2 (attached).

- Calcium, magnesium, potassium, sodium and chloride 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;
- Magnesium, potassium, sodium, chloride and sulphate 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 1 (attached).

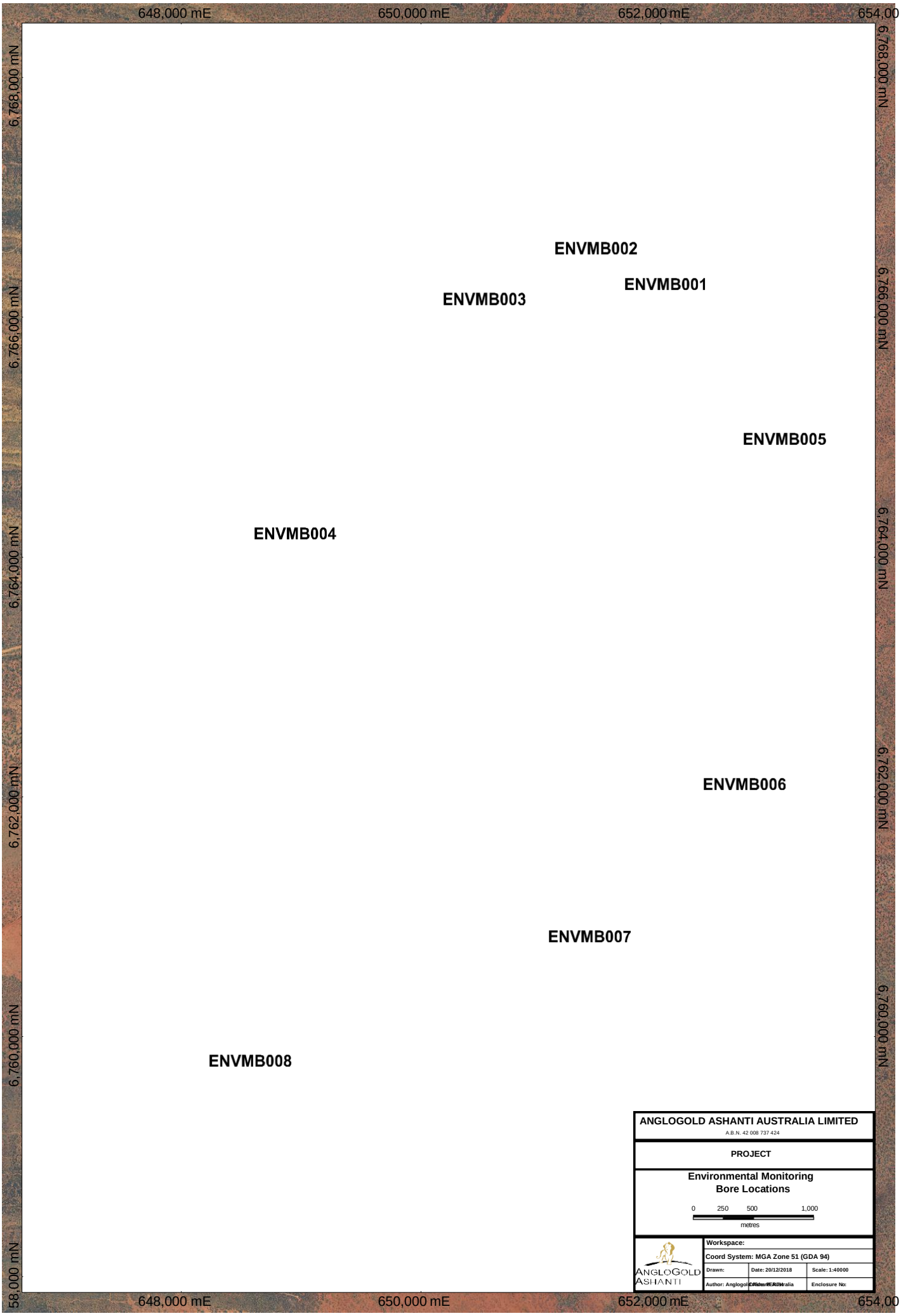
- Cobalt was reported above the upper trigger limit at ENVMB001 and ENVMB002 in all monitoring events;
- Nickel was reported above the upper trigger limit at ENVMB001-003 and ENVMB008 on at least one monitoring event;
- Zinc exceeded the upper trigger limit at ENVMB001 and ENVMB003 on at least on occasion; and
- ENVMB004 and 008 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 to 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.

Figure 1: ENVMB001-008 Monitoring Locations


648,000 mE
650,000 mE
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6,768,000 mN
6,766,000 mN
6,764,000 mN
6,762,000 mN
6,760,000 mN
58,000 mN
ENVMB002
ENVMB001
ENVMB003
ENVMB005
ENVMB004
ENVMB006
ENVMB007
ENVMB008
ANGLOGOLD ASHANTI AUSTRALIA LIMITED
A.B.N. 42 008 737 424
PROJECT
Environmental Monitoring
Bore Locations
0 250 500 1,000
metres
ANGLOGOLD ASHANTI
Workspace:
Coord System: MGA Zone 51 (GDA 94)
Drawn:
Date: 20/12/2018
Scale: 1:40000
Author: AngloGold Ashanti Australia
Enclosure No:

Table 1: Monthly Groundwater Analytical Results

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	13/10/2018	7	65000	45000	<0.004
ENVMB001	16/11/2018	7.1	66000	51000	0.007
ENVMB001	7/12/2018	7.1	72000	50000	0.006
ENVMB001	4/01/2019	7.1	70000	50000	<0.004
ENVMB001	16/02/2019	7.2	68000	46000	0.009
ENVMB001	6/03/2019	7.1	65000	44000	0.005
ENVMB001	20/04/2019	7.1	71000	48000	<0.004
ENVMB001	18/05/2019	7.1	73000	53000	<0.004
ENVMB001	14/06/2019	7	75000	51000	0.015
ENVMB001	13/07/2019	7.1	76000	50000	0.004
ENVMB001	9/08/2019	7.2	81000	55000	0.006
ENVMB001	21/09/2019	7	76000	54000	0.032
ENVMB002	13/10/2018	6.8	47000	34000	<0.004
ENVMB002	16/11/2018	7	46000	33000	<0.004
ENVMB002	7/12/2018	7.1	47000	32000	<0.004
ENVMB002	4/01/2019	6.9	49000	28000	<0.004
ENVMB002	15/02/2019	6.7	49000	35000	<0.004
ENVMB002	6/03/2019	6.7	48000	35000	<0.004
ENVMB002	20/04/2019	6.5	49000	34000	<0.004
ENVMB002	17/05/2019	6.5	48000	35000	<0.004
ENVMB002	14/06/2019	6.5	48000	32000	<0.004
ENVMB002	13/07/2019	6.5	49000	34000	<0.004
ENVMB002	9/08/2019	7.6	39000	26000	<0.004
ENVMB002	22/09/2019	6.4	47000	31000	<0.004
ENVMB003	13/10/2018	7.1	41000	27000	<0.004
ENVMB003	16/11/2018	7.4	40000	27000	<0.004
ENVMB003	7/12/2018	7.7	39000	26000	<0.004
ENVMB003	4/01/2019	7.4	40000	27000	<0.004
ENVMB003	15/02/2019	7.5	39000	27000	<0.004
ENVMB003	6/03/2019	7.4	39000	27000	<0.004
ENVMB003	20/04/2019	7.3	41000	28000	<0.004
ENVMB003	17/05/2019	7.2	40000	29000	<0.004
ENVMB003	14/06/2019	7.3	39000	26000	<0.004
ENVMB003	13/07/2019	7.6	39000	27000	<0.004
ENVMB003	9/08/2019	7.5	37000	25000	<0.004
ENVMB003	22/09/2019	7.4	38000	26000	<0.004
ENVMB004	13/10/2018	7.9	4900	3100	<0.004
ENVMB004	18/11/2018	8.1	4800	3000	<0.004
ENVMB004	5/12/2018	7.9	4800	2900	<0.004
ENVMB004	4/01/2019	7.8	4700	2700	<0.004
ENVMB004	15/02/2019	8	4700	2900	<0.004
ENVMB004	6/03/2019	8.1	4900	2900	<0.004
ENVMB004	21/04/2019	8	4700	2700	<0.004
ENVMB004	19/05/2019	7.9	4800	2900	<0.004
ENVMB004	14/06/2019	7.9	4500	2600	<0.004
ENVMB004	12/07/2019	8.1	4100	2400	<0.004
ENVMB004	10/08/2019	8.2	4200	2400	<0.004
ENVMB004	21/09/2019	7.9	4100	2200	<0.004

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)**
ENVMB005	14/10/2018	7.6	16000	9500	<0.004
ENVMB005	17/11/2018	7.7	14000	9300	<0.004
ENVMB005	8/12/2018	7.7	16000	9300	<0.004
ENVMB005	3/01/2019	7.7	16000	9700	<0.004
ENVMB005	17/02/2019	7.8	16000	9100	<0.004
ENVMB005	6/03/2019	7.8	16000	9200	<0.004
ENVMB005	20/04/2019	7.7	16000	10000	<0.004
ENVMB005	18/05/2019	7.7	16000	10000	<0.004
ENVMB005	14/06/2019	7.6	17000	10000	<0.004
ENVMB005	12/07/2019	7.7	16000	9600	<0.004
ENVMB005	11/08/2019	7.7	16000	7500	<0.004
ENVMB005	21/09/2019	7.5	16000	10000	<0.004
ENVMB006	14/10/2018	7.5	22000	14000	<0.004
ENVMB006	18/11/2018	7.6	23000	14000	<0.004
ENVMB006	5/12/2018	7.6	21000	14000	<0.004
ENVMB006	3/01/2019	7.6	23000	15000	<0.004
ENVMB006	17/02/2019	7.6	22000	14000	<0.004
ENVMB006	7/03/2019	7.7	22000	15000	<0.004
ENVMB006	21/04/2019	7.5	22000	14000	<0.004
ENVMB006	19/05/2019	7.5	22000	15000	<0.004
ENVMB006	14/06/2019	7.5	21000	14000	<0.004
ENVMB006	12/07/2019	7.6	22000	14000	<0.004
ENVMB006	11/08/2019	7.7	22000	14000	<0.004
ENVMB006	21/09/2019	7.5	22000	15000	<0.004
ENVMB007	15/10/2018	7.7	22000	13000	<0.004
ENVMB007	18/11/2018	7.7	21000	13000	<0.004
ENVMB007	8/12/2018	7.6	21000	14000	<0.004
ENVMB007	3/01/2019	7.6	21000	14000	<0.004
ENVMB007	17/02/2019	7.7	21000	14000	<0.004
ENVMB007	7/03/2019	7.6	21000	15000	<0.004
ENVMB007	21/04/2019	7.6	21000	14000	<0.004
ENVMB007	19/05/2019	7.6	21000	13000	<0.004
ENVMB007	14/06/2019	7.6	20000	13000	<0.004
ENVMB007	13/07/2019	7.6	21000	15000	<0.004
ENVMB007	10/08/2019	7.9	21000	13000	<0.004
ENVMB007	18/09/2019	7.6	22000	13000	0.017
ENVMB008	14/10/2018	7.7	12000	7400	<0.004
ENVMB008	18/11/2018	7.7	11000	7100	<0.004
ENVMB008	8/12/2018	7.7	12000	7400	<0.004
ENVMB008	2/01/2019	7.6	12000	7700	<0.004
ENVMB008	17/02/2019	7.7	12000	7600	<0.004
ENVMB008	6/03/2019	7.7	13000	8400	<0.004
ENVMB008	21/04/2019	7.7	12000	7400	<0.004
ENVMB008	19/05/2019	7.6	12000	6900	<0.004
ENVMB008	14/06/2019	7.6	14000	8500	<0.004
ENVMB008	12/07/2019	7.8	12000	8200	<0.004
ENVMB008	10/08/2019	7.9	10000	5800	<0.004
ENVMB008	18/09/2019	7.7	12000	7100	<0.004

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

µS/cm = microsiemens per centimetre

mg/L = milligrams per litre

Table 2: Quarterly Groundwater Analytical Results

10% Variance from Baseline	Lower Trigger Value	56.7	117	51.3	494.1	2250		<10	108	135						3.51
	Upper Trigger Value	704	2090	924	10670	18700		176	5070	682	<5		0.55			12.1
Data Point	Date	Calcium - Dissolved (mg/L)	Magnesium - Dissolve (mg/L)	Potassium - Dissolve (mg/L)	Sodium - Dissolved (mg/L)	Cl (mg/L)	Fluoride by ISE (mg/L)	NO3 (mg/L)	SO4 (mg/L)	Bicarbonate Alk (mg/L)	Hydroxide Alk CaCO3 (mg/L)	Antimony-D (mg/L)	As - D (mg/L)	Ba - D (mg/L)	Beryllium Dissolved (mg/L)	Boron - D (mg/L)
ENVMB001	16/11/2018	1000	2600	880	11000	27000	1.3	130	3600	250	<5	<0.02	<0.02	0.041	<0.02	9.8
ENVMB001	16/02/2019	1100	2500	890	9300	23000	1.4	100	3300	250	<5	<0.02	<0.02	0.05	<0.02	10
ENVMB001	18/05/2019	1400	3000	910	14000	29000	1.3	100	3300	250	<5	<0.02	<0.02	0.055	<0.02	9.2
ENVMB001	9/08/2019	1500	2500	1000	12000	30000	1.7	77	3300	240	<5	<0.02	<0.02	0.046	<0.02	8.8
ENVMB002	16/11/2018	400	1800	570	8000	16000	0.6	130	4200	120	<5	<0.01	<0.01	0.038	<0.01	9.7
ENVMB002	15/02/2019	380	1700	620	7200	15000	1	100	4400	71	<5	<0.02	<0.02	0.045	<0.02	10
ENVMB002	17/05/2019	390	1900	530	9700	17000	1	230	4300	74	<5	<0.02	<0.02	0.035	<0.02	10
ENVMB002	9/08/2019	530	1400	430	6900	13000	0.7	1.2	3400	270	<5	<0.01	<0.01	0.027	<0.01	8.1
ENVMB003	16/11/2018	340	1300	430	6700	14000	1	50	3600	190	<5	<0.01	<0.01	0.043	<0.01	8.4
ENVMB003	15/02/2019	360	1200	430	5800	12000	1.1	47	3500	200	<5	<0.01	<0.01	0.063	<0.01	8.7
ENVMB003	17/05/2019	380	1300	420	7900	14000	1	54	3700	220	<5	<0.01	<0.01	0.045	<0.01	8.9
ENVMB003	9/08/2019	390	1300	440	6700	13000	1.1	50	3500	200	<5	<0.01	<0.01	0.042	<0.01	9.1
ENVMB004	18/11/2018	220	120	52	460	1400	0.3	70	61	120	<5	<0.001	<0.001	0.27	<0.001	1.1
ENVMB004	15/02/2019	210	120	53	450	1200	0.3	66	64	120	<5	<0.001	<0.001	0.24	<0.001	1.6
ENVMB004	19/05/2019	200	120	53	520	1500	0.3	77	120	120	<5	<0.001	<0.001	0.2	<0.001	1.3
ENVMB004	10/08/2019	190	110	50	440	1200	0.3	68	75	120	<5	<0.001	<0.001	0.16	<0.001	1.2
ENVMB005	17/11/2018	69	210	150	2800	4200	0.8	150	1300	580	<5	<0.005	<0.005	0.028	<0.005	5.9
ENVMB005	17/02/2019	71	220	160	2800	3700	0.8	150	1400	590	<5	<0.005	<0.005	0.033	<0.005	6.2
ENVMB005	18/05/2019	91	260	160	3200	4600	0.8	180	1500	610	<5	<0.005	<0.005	0.027	<0.005	6.1
ENVMB005	11/08/2019	77	240	160	3000	4100	0.8	160	1400	600	<5	<0.005	<0.005	0.027	<0.005	6.3
ENVMB006	18/11/2018	400	740	160	3300	6800	0.4	12	2200	400	<5	<0.005	<0.005	0.034	<0.005	4.6
ENVMB006	17/02/2019	420	800	160	3200	6200	0.5	14	2200	420	<5	<0.005	<0.005	0.033	<0.005	5
ENVMB006	19/05/2019	430	790	160	3500	6900	0.4	11	2200	450	<5	<0.005	<0.005	0.031	<0.005	4.9
ENVMB006	11/08/2019	400	770	160	3100	6600	0.4	14	2200	420	<5	<0.005	<0.005	0.035	<0.005	4.7
ENVMB007	18/11/2018	390	620	130	3000	6300	0.5	12	2100	410	<5	<0.005	<0.005	0.041	<0.005	4.3
ENVMB007	17/02/2019	410	670	150	3100	5800	0.6	10	2100	440	<5	<0.005	<0.005	0.039	<0.005	5.1
ENVMB007	19/05/2019	420	700	140	3500	6600	0.5	11	2100	450	<5	<0.005	<0.005	0.037	<0.005	5
ENVMB007	10/08/2019	410	670	150	3100	6300	0.6	7.5	2100	440	<5	<0.005	<0.005	0.038	<0.005	4.8
ENVMB008	18/11/2018	300	380	68	1500	3300	0.2	47	1100	180	<5	<0.002	<0.002	0.066	<0.002	2.1
ENVMB008	17/02/2019	360	430	76	1600	3100	0.2	45	1200	190	<5	<0.005	<0.005	0.1	<0.005	2.5
ENVMB008	19/05/2019	340	430	70	1700	3400	0.2	47	1100	210	<5	<0.005	<0.005	0.09	<0.005	2.3
ENVMB008	10/08/2019	300	340	62	1300	2900	0.3	52	990	190	<5	<0.005	<0.005	0.076	<0.005	2

Legend:

Upper trigger value exceeded

Lower trigger value exceeded

mg/L = milligrams per litre

10% Variance from Baseline	Lower Trigger Value											
	Upper Trigger Value	0.0055			0.0132	0.11	1.98	0.33	4.07		0.022		0.154
Data Point	**Date**	**Cd - D (mg/L)**	**Chromium. Cr3+ (mg/L)**	**Chromium. Cr6+ (mg/L)**	**Co - D (mg/L)**	**Cu - D (mg/L)**	**Fe - D (mg/L)**	**Pb - D (mg/L)**	**Mn - D (mg/L)**	**Mercury - Dissolved (mg/L)**	**Ni - D (mg/L)**	**Selenium-Dissolved (mg/L)**	**Zn - D (mg/L)**
ENVMB001	16/11/2018	<0.002	<0.05	0.006	1.3	<0.02	0.18	<0.02	0.034	0.002	0.041	<0.02	0.15
ENVMB001	16/02/2019	<0.002	<0.05	0.009	1.6	0.043	0.19	<0.02	0.047	0.0017	<0.02	0.02	<0.1
ENVMB001	18/05/2019	<0.002	<0.05	0.004	1.3	0.023	0.21	0.082	0.12	0.00094	<0.02	<0.02	0.16
ENVMB001	9/08/2019	<0.002	<0.05	0.001	1		0.13	<0.02	0.11	0.00017	<0.02	<0.02	0.14
ENVMB002	16/11/2018	0.0015	<0.05	0.006	0.36	0.086	0.062	0.014	0.35	0.0041	0.07	0.014	0.21
ENVMB002	15/02/2019	<0.002	<0.05	0.007	0.57	0.044	<0.1	<0.02	0.4	0.003	0.089	0.024	<0.1
ENVMB002	17/05/2019	<0.002	<0.05	0.004	0.47	0.048	<0.1	<0.02	0.31	0.0032	0.075	<0.02	0.17
ENVMB002	9/08/2019	<0.001	<0.05	<0.001	0.055		<0.05	<0.01	0.65	<0.00005	0.012	<0.01	0.063
ENVMB003	16/11/2018	0.0015	<0.05	0.005	0.011	0.03	<0.05	0.013	0.052	<0.00005	0.058	0.011	0.26
ENVMB003	15/02/2019	0.0017	<0.05	0.012	0.011	0.02	<0.05	<0.01	0.067	<0.00005	0.056	0.014	0.15
ENVMB003	17/05/2019	0.0016	<0.05	0.01	<0.01	0.037	<0.05	<0.01	0.08	<0.00005	0.045	0.011	0.23
ENVMB003	9/08/2019	0.0013	<0.05	0.002	<0.01		<0.05	<0.01	0.1	<0.00005	0.039	<0.01	0.14
ENVMB004	18/11/2018	<0.0001	<0.05	<0.004	<0.001	0.004	<0.005	<0.001	<0.001	<0.00005	0.002	<0.001	0.018
ENVMB004	15/02/2019	<0.0001	<0.05	0.004	<0.001	0.003	0.008	0.004	0.002	<0.00005	0.004	<0.001	0.02
ENVMB004	19/05/2019	<0.0001	<0.05	<0.001	<0.001	<0.001	0.007	0.001	0.011	<0.00005	0.002	<0.001	0.007
ENVMB004	10/08/2019	<0.0001	<0.05	<0.001	<0.001		0.011	<0.001	0.002	<0.00005	0.006	<0.001	0.013
ENVMB005	17/11/2018	<0.0005	<0.05	<0.004	<0.005	0.018	<0.025	<0.005	<0.005	<0.00005	0.009	0.012	0.06
ENVMB005	17/02/2019	<0.0005	<0.05	0.005	<0.005	0.007	<0.025	<0.005	<0.005	<0.00005	0.006	0.013	0.05
ENVMB005	18/05/2019	<0.0005	<0.05	0.003	0.012	0.025	<0.025	<0.005	0.006	<0.00005	0.008	0.009	0.069
ENVMB005	11/08/2019	<0.0005	<0.05	0.006	<0.005		<0.025	<0.005	<0.005	<0.00005	<0.005	0.009	<0.025
ENVMB006	18/11/2018	<0.0005	<0.05	0.005	<0.005	0.054	<0.025	<0.005	0.047	<0.00005	0.011	0.008	0.11
ENVMB006	17/02/2019	<0.0005	<0.05	0.008	<0.005	0.008	0.026	<0.005	0.026	<0.00005	0.009	0.01	0.079
ENVMB006	19/05/2019	<0.0005	<0.05	0.002	<0.005	0.04	<0.025	<0.005	0.019	<0.00005	0.01	<0.005	0.12
ENVMB006	11/08/2019	<0.0005	<0.05	0.004	<0.005		<0.025	<0.005	0.019	<0.00005	<0.005	0.007	<0.025
ENVMB007	18/11/2018	<0.0005	<0.05	0.005	<0.005	0.036	<0.025	<0.005	0.013	<0.00005	0.011	0.007	0.11
ENVMB007	17/02/2019	<0.0005	<0.05	0.009	<0.005	0.008	<0.025	<0.005	0.022	<0.00005	0.007	0.007	0.074
ENVMB007	19/05/2019	<0.0005	<0.05	0.003	<0.005	0.015	<0.025	<0.005	0.014	<0.00005	0.008	0.012	0.093
ENVMB007	10/08/2019	<0.0005	<0.05	<0.001	<0.005		<0.025	<0.005	0.068	<0.00005	<0.005	0.007	<0.025
ENVMB008	18/11/2018	<0.0002	<0.05	<0.004	<0.002	0.006	<0.01	<0.002	<0.002	<0.00005	0.004	0.009	0.043
ENVMB008	17/02/2019	<0.0005	<0.05	0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.00005	0.007	0.014	0.082
ENVMB008	19/05/2019	<0.0005	<0.05	0.002	<0.005	0.007	0.036	<0.005	<0.005	<0.00005	0.032	0.006	0.046
ENVMB008	10/08/2019	<0.0005	<0.05	0.002	<0.005		<0.025	<0.005	<0.005	<0.00005	<0.005	0.009	0.082

Legend:
Upper trigger value exceeded
Lower trigger value exceeded
mg/L = milligrams per litre

Appendix 4 – Stormwater Monitoring Summary

MEMORANDUM

Date: 21 November 2019

To: TGM Environment Team

From: Nicolle Britland

Subject: 2018/2019 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 three occasions during the reporting period following significant rainfall events:

- 4 November 2018 (17.2 mm)
- 12 November 2018 (12.6 mm)
- 10 December 2018 (60.4 mm)

The following locations were sampled (Figure 1):

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

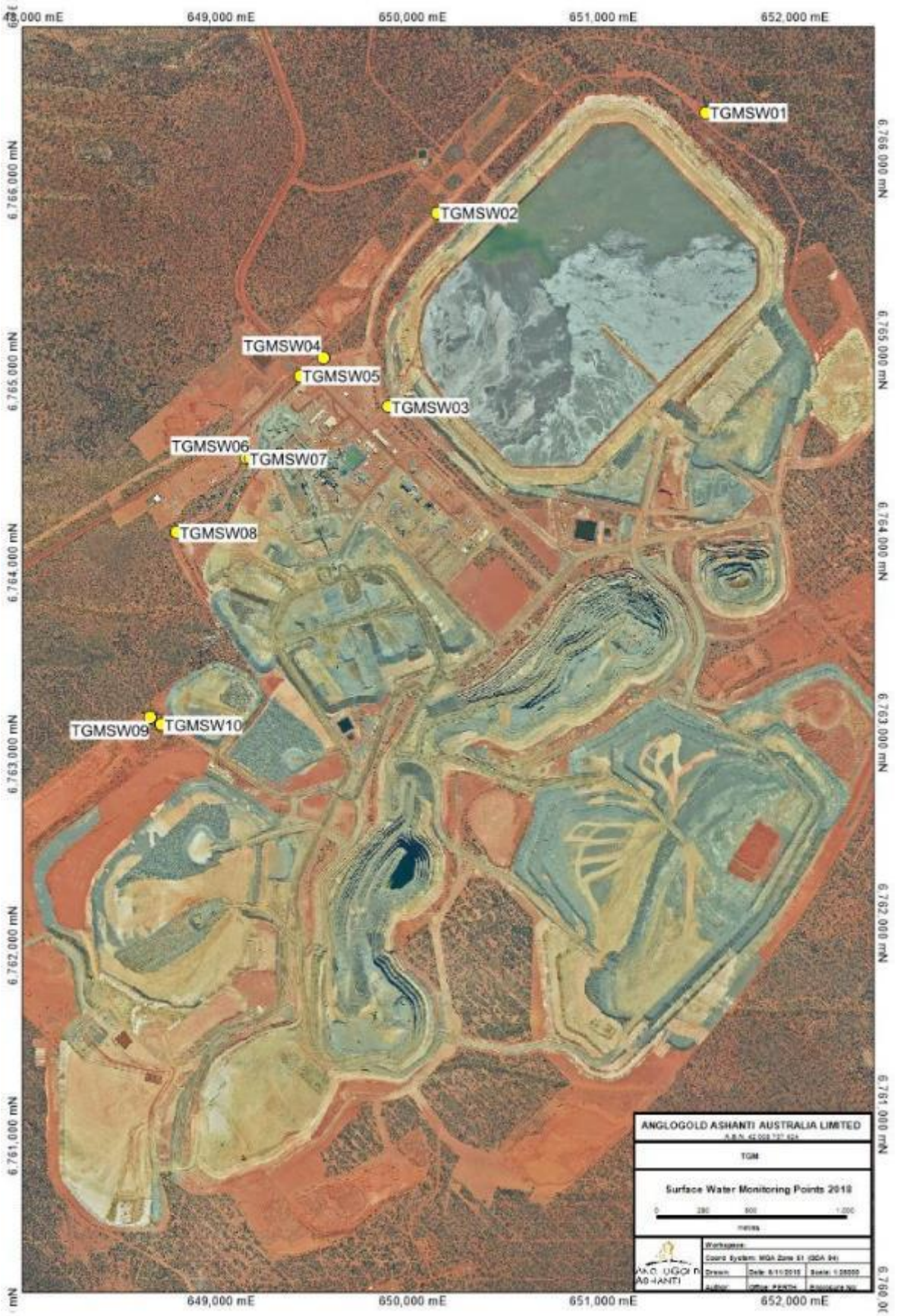

Figure 1: Stormwater Sampling Locations (October 2018)

1 2018/2019 Stormwater Monitoring Results

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

1.1 Physical Parameters

- pH was neutral at all locations in all monitoring events;
- Total dissolved solids were in the fresh to brackish range in all monitoring events. 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 was generally low, with TGMSW08 consistently higher, this area would receive runoff from the fine ore stockpile so would have more surface dust available to be mobilised.

1.2 Hydrocarbons and BTEX Compounds

- Total Recoverable Hydrocarbons (TRH) C6 – C36 mg/L recorded across the sampling locations ranged between below the detection limit of 0.6 mg/L to 0.9 mg/L. No Total TRH results were recorded during the December 2018 rain event.

TABLE 1: STORMWATER LABORATORY RESULTS

			Physical Parameters				Major Anions and Cations									
	Data Point	Date	pH (pH units)	EC (µS/cm)	TDS (mg/L)	TSS (mg/L)	Carbonate Alkalinity (mg/L)	Bicarbonate Alkalinity (mg/L)	Hardness - Total (mg/L)	Cl (mg/L)	SO4 (mg/L)	NO3 (mg/L)	Calcium - Total (mg/L)	Magnesium - Total (mg/L)	Potassium - Total (mg/L)	Sodium - Total (mg/L)
Rain Event 17.2 mm	TGMSW01	4/11/2018	8.1	140	430	740	<1	47	46	16	10	1.4	9.3	5.5	5.7	15
	TGMSW02	4/11/2018	7.4	5800	3400	25	<1	26	640	1800	360	6.9	130	78	37	830
	TGMSW03	4/11/2018	7.2	8700	5200	17	<1	21	1100	2900	530	9.5	200	140	59	1600
	TGMSW04	4/11/2018	7.3	3400	1800	18	<1	20	380	940	230	12	87	40	23	490
	TGMSW05	4/11/2018	7.4	1900	1000	49	<1	32	210	470	140	7.2	49	21	15	250
	TGMSW07	4/11/2018	7.2	8100	4800	14	<1	19	720	2600	420	11	150	82	37	1400
	TGMSW09	4/11/2018	7.6	3000	1700	17	<1	34	350	820	180	5.1	76	38	16	420
	TGMSW10	4/11/2018	7.3	19000	12000	82	<1	25	2300	6200	1100	27	380	320	71	3200
Rain Event 12.6 mm	TGMSW01	12/11/2018	8.3	110	360	83	<1	48	31	15	6	0.4	6.9	3.3	5.4	15
	TGMSW02	12/11/2018	7.3	9000	5800	12	<1	29	1100	3000	550	10	200	140	66	1500
	TGMSW03	12/11/2018	7.4	11000	7500	21	<1	31	1500	3800	670	12	270	200	82	2000
	TGMSW04	12/11/2018	7.4	6700	4100	10	<1	21	740	2200	310	8.7	120	110	58	1100
	TGMSW05	12/11/2018	7.5	2000	1100	32	<1	30	180	550	95	9.3	47	15	18	290
	TGMSW07	12/11/2018	7.4	1600	910	33	<1	25	190	410	120	6.6	54	13	13	220
	TGMSW08	12/11/2018	7.9	160	380	150	<1	49	62	25	12	1	17	4.6	5.9	12
	TGMSW09	12/11/2018	7.4	8100	5000	12	<1	31	1200	2500	660	14	240	150	44	1300
	TGMSW10	12/11/2018	7.7	910	520	<5	<1	33	140	210	97	0.6	43	8.9	8.4	110
Rain Event 60.4 mm	TGMSW01	10/12/2018	7.5	3300	1800	9	<1	28	380	950	180	5.9	75	48	23	470
	TGMSW02	10/12/2018	7.4	3900	2200	18	<1	29	450	1100	220	6.1	88	57	25	560
	TGMSW03	10/12/2018	7.3	7100	4400	26	<1	28	960	2300	390	8.9	170	130	46	1200
	TGMSW04	10/12/2018	7.4	4700	2700	23	<1	25	560	1400	270	4.9	110	66	33	730
	TGMSW05	10/12/2018	7.2	4700	2800	22	<1	29	540	1400	290	4.4	110	64	33	700
	TGMSW07	10/12/2018	7.4	5700	3500	44	<1	21	700	1700	340	5.2	140	84	42	880
	TGMSW08	10/12/2018	7.9	88	190	160	<1	43	45	6	6	0.8	13	3.2	4	4.4
	TGMSW09	10/12/2018	7.6	2100	1200	10	<1	30	280	570	150	3.3	62	31	12	290
	TGMSW10	10/12/2018	7.5	4900	2900	14	<1	35	790	1400	430	22	160	93	30	700

			Heavy Metals										Cyanides		
	Data Point	Date	Al - T (mg/L)	As - T (mg/L)	Cd - T (mg/L)	Cr - T (mg/L)	Cu - T (mg/L)	Fe - T (mg/L)	Pb - T (mg/L)	Mn - T (mg/L)	Hg - T (mg/L)	Ni - T (mg/L)	Cyanide - Free (mg/L)	CN - T (mg/L)	WAD CN (mg/L)
Rain Event 17.2 mm	TGMSW01	4/11/2018	14	0.003	<0.0001	0.041	0.019	22	0.018	0.3	<0.00005	0.019	<0.004	<0.004	<0.004
	TGMSW02	4/11/2018	1.8	<0.001	<0.0001	0.003	0.007	1.1	<0.001	0.058	<0.00005	0.002	0.018	0.056	0.024
	TGMSW03	4/11/2018	0.68	<0.005	<0.0005	<0.005	<0.005	0.48	<0.005	0.079	<0.00005	<0.005	<0.004	0.017	0.005
	TGMSW04	4/11/2018	0.83	<0.001	<0.0001	0.002	0.004	0.47	0.001	0.078	<0.00005	0.001	<0.004	0.013	0.006
	TGMSW05	4/11/2018	1.8	<0.001	<0.0001	0.002	0.008	1.3	0.006	0.08	<0.00005	0.002	<0.004	0.007	0.008
	TGMSW07	4/11/2018	0.44	<0.005	0.001	<0.005	0.005	0.3	<0.005	0.13	<0.00005	<0.005	0.007	0.025	0.011
	TGMSW09	4/11/2018	2.3	<0.001	0.0001	0.002	0.002	0.97	0.001	0.034	<0.00005	<0.001	<0.004	<0.004	<0.004
	TGMSW10	4/11/2018	1.8	<0.005	0.007	0.007	<0.005	3.2	0.11	0.47	<0.00005	0.005	<0.004	<0.004	<0.004
Rain Event 12.6 mm	TGMSW01	12/11/2018	8.9	0.002	<0.0001	0.021	0.01	12	0.008	0.18	<0.00005	0.01	<0.004	<0.004	<0.004
	TGMSW02	12/11/2018	0.91	0.004	0.0003	<0.002	0.003	0.46	<0.002	0.045	<0.00005	0.003	<0.004	0.006	<0.004
	TGMSW03	12/11/2018	2	0.006	0.0005	<0.005	<0.005	1.3	<0.005	0.073	<0.00005	<0.005	<0.004	<0.004	<0.004
	TGMSW04	12/11/2018	0.78	0.002	<0.0002	<0.002	<0.002	0.42	<0.002	0.04	<0.00005	<0.002	<0.004	<0.004	<0.004
	TGMSW05	12/11/2018	0.58	<0.001	<0.0001	0.002	0.003	0.96	0.002	0.047	<0.00005	0.001	<0.004	<0.004	<0.004
	TGMSW07	12/11/2018	0.69	<0.001	<0.0001	0.002	0.003	1.1	0.002	0.045	<0.00005	0.002	<0.004	<0.004	<0.004
	TGMSW08	12/11/2018	17	0.003	<0.0001	0.04	0.012	22	0.011	0.1	<0.00005	0.014	<0.004	<0.004	<0.004
	TGMSW09	12/11/2018	0.67	<0.002	0.0015	<0.002	<0.002	0.39	<0.002	0.11	<0.00005	<0.002	<0.004	<0.004	<0.004
	TGMSW10	12/11/2018	0.26	<0.001	<0.0001	<0.001	<0.001	0.21	<0.001	0.005	<0.00005	<0.001	<0.004	<0.004	<0.004
Rain Event 60.4 mm	TGMSW01	10/12/2018	0.31	<0.001	<0.0001	0.001	<0.001	0.39	<0.001	0.037	<0.00005	0.001	<0.004	<0.004	<0.004
	TGMSW02	10/12/2018	1.4	<0.001	<0.0001	0.003	0.002	1	<0.001	0.043	<0.00005	0.002	<0.004	0.005	<0.004
	TGMSW03	10/12/2018	0.82	<0.005	<0.0005	<0.005	<0.005	0.6	<0.005	0.058	<0.00005	<0.005	<0.004	<0.004	<0.004
	TGMSW04	10/12/2018	1.7	<0.001	0.0002	0.002	0.001	0.96	0.001	0.074	<0.00005	0.002	<0.004	0.006	<0.004
	TGMSW05	10/12/2018	2.1	<0.001	0.0002	0.002	0.001	1	0.001	0.068	<0.00005	0.002	<0.004	0.006	<0.004
	TGMSW07	10/12/2018	1.9	<0.001	0.0004	0.003	0.002	1.2	0.008	0.094	<0.00005	0.003	<0.004	0.007	0.005
	TGMSW08	10/12/2018	12	0.002	<0.0001	0.029	0.008	15	0.014	0.079	<0.00005	0.011	<0.004	<0.004	<0.004
	TGMSW09	10/12/2018	1.1	<0.001	<0.0001	0.002	<0.001	0.66	0.002	0.021	<0.00005	0.002	<0.004	<0.004	<0.004
	TGMSW10	10/12/2018	1.2	<0.001	0.0006	0.002	0.001	0.81	0.001	0.1	<0.00005	0.003	<0.004	<0.004	<0.004

			BTEX					Total Recoverable Hydrocarbons									
	Data Point	Date	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	m/p-xylene (mg/L)	o-xylene (mg/L)	Benzene (F0) (mg/L)	TRH C6-C10 less BTEX (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)
Rain Event 17.2 mm	TGMSW01	4/11/2018	<0.0025	<0.0025	<0.0025	<0.005	<0.0025	<0.0025	<0.25	<0.5	<0.5	<0.2	<0.25	<0.05	<0.2	<0.2	<0.5
	TGMSW02	4/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.09	0.3	0.2	0.6
	TGMSW03	4/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	0.7	<0.5	<0.04	<0.05	0.12	0.6	0.3	0.9
	TGMSW04	4/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.06	0.3	0.2	0.6
	TGMSW05	4/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	0.5	<0.5	<0.04	<0.05	0.11	0.4	0.2	0.8
	TGMSW07	4/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.09	0.4	0.2	0.7
	TGMSW09	4/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.07	<0.2	<0.2	<0.5
	TGMSW10	4/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	0.6	<0.5	<0.04	<0.05	0.11	0.5	0.2	0.8
Rain Event 12.6 mm	TGMSW01	12/11/2018	<0.0025	<0.0025	<0.0025	<0.005	<0.0025	<0.0025	<0.25	<0.5	<0.5	<0.2	<0.25	<0.05	<0.2	<0.2	<0.5
	TGMSW02	12/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.08	0.3	0.2	0.6
	TGMSW03	12/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.08	0.3	0.3	0.7
	TGMSW04	12/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.06	0.2	0.3	0.6
	TGMSW05	12/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW07	12/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW08	12/11/2018	<0.0025	<0.0025	<0.0025	<0.005	<0.0025	<0.0025	<0.25	<0.5	<0.5	<0.2	<0.25	<0.05	<0.2	<0.2	<0.5
	TGMSW09	12/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW10	12/11/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
Rain Event 60.4 mm	TGMSW01	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW02	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW03	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	0.11	<0.2	<0.2	<0.5
	TGMSW04	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW05	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW07	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW08	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW09	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5
	TGMSW10	10/12/2018	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.05	<0.5	<0.5	<0.04	<0.05	<0.05	<0.2	<0.2	<0.5

Appendix 5 – Water Quality Monitoring Method Audit

Tropicana Gold Mine

TGM Water Monitoring Methodology Internal Audit - Environmental Compliance

Audited by:	Nicolle Britland	**Date of Audit:**	07/11/2019
Supervisor:	Rosemarie Lane		

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 are available of the environmental monitoring bores and the Stormwater (previously referred to as Surface Water) collection points (sampling locations). 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 month prior to the groundwater monitoring occurring. The water quality meter is sent for off-site calibration and servicing every six months. Calibration solution is checked monthly against expiry date and re-ordered if required. A monthly 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.
1.10	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	

TGM Water Monitoring Methodology Internal Audit - Environmental Compliance

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 SGS laboratory.
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.
2.5	Sampling staff use plastic 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 Decon90 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	

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TGM Water Monitoring Methodology Internal Audit - Environmental Compliance

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.
3.3	Water levels are measured before prior to pumping	X			Water levels are always recorded prior to pumping.
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	SGS 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			TSF Monitoring Bores and Environmental Monitoring Bores Field Sheets require weather conditions to be recorded. A 'Comments' box is present on other Field Sheets which allows for any unusual items to be noted, however does not specifically require comments on the weather or water sample.
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		Further work needs to be completed to ensure staff comment on location specific conditions during the time of sampling.
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.
3.12	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:	X			This information is included in the field record sheet/procedure.
	- 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.				

	11	1	1	85%
	11	/	13	

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 now 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 are taken for all monitoring progammes.
4.3	Duplicate and replicate samples are taken as part of the sampling QA/QC	X			Duplicate samples are taken on every sampling day and a minimum of one duplicate for every 10 samples.
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.
		4		0	100%
		4	/	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 holding times (within 24 hours)	X			Sampling is undertaken with the aim to provide to the lab within 24 hours.
5.2	Samples are stored in an esky in the field and then refrigerated to cool to 4 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			Service records of the pump are maintained. Monthly 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.
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 hard copy and electronic.
		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			SGS laboratory is NATA accredited. Certificates of analysis provide confirmation of accreditation against requested analyses. Non-accredited analyses are noted by exception.
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.
7.5	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 have not audited their procedures within the scope of this audit, however provided documentation of analysis indicates that these items have been sufficiently addressed.
7.8	Analytical methods cover the range of concentrations expected	X			
7.9	Analytical methods detect the minimum concentration of interest	X			
7.1	Analytical methods have sufficient accuracy and precision	X			
7.11	Samples are processed within the samples 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)	X			

	- 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				
7.16	From documentation, the following information is available:			X	Not Applicable – this level of detail is associated with an offsite laboratory, which is outside the scope of the audit undertaken.
	- 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?				
		15	0	1	100%
		16	/	16	
Audit Score		**56**	**/**	**57**	97%

Appendix 6 – Threatened Species and Communities Management Strategy Audit

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TGM Threatened Species and Communities Management Strategy Internal Audit - Environmental Compliance

Audit undertaken by:	Paul McNeil	**Date of Audit:**	21/11/2019
Supervisor:	Rosemarie Lane	**Communicated:**	

1	Clearing/ Earthworks	Compliance (place x in applicable box)			Observations/Findings/Comments
		Yes	No	N/A	
1.1	Disturbance to native vegetation is minimised with clearing confined to the minimum area practicable.	X			Clearing at TGM is approved through either the Ground Disturbance Permit (GDP) or Environment and Heritage Inspection (EIN) to minimise disturbance to native vegetation.
1.2	All areas requiring clearing are clearly delineated.	X			All clearing is clearly delineated by use of either pegging, flagging or use of GPS control in Surface Mining Equipment.
1.3	Declared Rare Flora (DRF) within 50 m of disturbance areas are visibly demarcated.	X			Currently no Threatened flora at TGM. A combination of green and pink flagging tape is used to demarcate priority species identified in the field when planning disturbance. Whilst no Threatened flora are present, the process is in place to protect Threatened flora should they be identified or existing priority status is upgraded.
1.4	All infrastructure (including the access roads) has/will been designed and located to avoid impacts on all known populations of DRF.	X			By default, with no Threatened flora at TGM this has been achieved. This has been achieved in the past when there was Threatened Flora (e.g. former DRF *Conospermum toddii* now priority 4). Prior to clearing being undertaken, a GDP and EIN (when required) is completed. The GDP requires specific details of the proposed disturbance. 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 also undertaken to check the proposed clearing envelope for other environmental values which have not been detected previously.
1.5	Infrastructure areas have/will be designed and located to avoid known locations of Priority flora where reasonably practical.	X			Prior to clearing being undertaken, a GDP and EIN (when required) is completed. The GDP requires specific details of the proposed disturbance. During the GDP assessment process, a desktop assessment is undertaken to determine if there will be any impacts to environmental values such as priority flora and whether the proposed disturbance can be relocated to avoid the priority flora. An EIN (pre-clearing inspection) is also undertaken to check the proposed clearing envelope for other environmental values which have not been detected previously.
1.6	Surface water diversion systems will be incorporated into the design of the Operational Area to minimise impacts to surface water flow.	X			The TGM Operational Area is located in an area with little natural drainage flow (other than the chain of small lakes linked to Lake Rason). Surface water flows require substantial rain to be triggered. To minimise interaction with surface water, diversion of water flows around the mine site is achieved by bunding, waste landform toe drains/bunds, roads and the site diversion drain.

1.7	The operational area layout has been designed to minimise impacts to surface water flow	X			In addition to the site diversion drain, placement of infrastructure such as waste landforms, TSF and roads practically eliminates external runoff entering the mine site.

1.8	Infrastructure has been located to minimise fragmentation of important habitat.	X			TGM has a relatively compact footprint surrounding the open pits to minimise fragmentation. Other than habitats within the direct disturbance footprint of the pits and waste landforms (which were assessed at the time of the PER), infrastructure has been located to avoid Threatened fauna habitat and areas with high concentrations of sand dunes.
1.9	Fire protocols have been implemented to reduce the risk of fire.	X			TGM has implemented a Fire Risk Management Plan to reduce the risk of fire which assesses the most likely sources/risk of fires occurring at or around TGM Fire breaks are installed and maintained in high risk areas such as around the village. Fire precautions 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.
1.10	Fire breaks have been established adjacent to high risk areas	X			Fire breaks located in the following locations: Village, Aerodrome, Waste Water Treatment Facility, Waste Management Facility, Explosives Magazine, communications towers along the TGM Access Road and the Process Water Supply Borefield power station/transfer pond/communications tower compound.
1.11	No extensions to the pit or amendments have been undertaken without further troglobiotic surveys	X			Pits remain within the total approved footprint of 400 ha.
1.12	Disturbance to critical habitat has been avoided (sand dune systems suitable for Marsupial Moles, Sandhill Dunnarts and the Mulgara).	X			Environmental values were taken into consideration during project footprint design, minimising impacts to critical habitat. Clearing is subject to the GDP and EIN processes aim to avoid impacting habitat areas.

1.13	Disturbance to possible Malleefowl and Sandhill Dunnart habitats has been minimised where practicable (including areas of spinifex unburnt between eight and 38 years).	X			With the passage of lightning initiated bushfires through the general area in recent years, greater emphasis has been placed on minimising impacts to long unburnt vegetation (not just spinifex). Clearing is subject to the GDP and EIN processes aim to avoid impacting habitat areas
1.14	Locations of critical threatened fauna habitat have been avoided (including Mallee fowl mounds, Bustard nests and sand dunes).	X			All known Threatened fauna habitat is recorded in MapInfo 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 fauna habitat be located at either stage an appropriately sized buffer is placed around the area to ensure its protection. It is noted Bustards are no longer listed as specially protected or priority fauna.

1.15	Locations of Priority Ecological Communities (PEC) have been avoided where practicable.	X			No additional disturbance along the TGM Mine Access Road, sections of which are located with the PEC, occurred during the reporting period.
1.16	Removal of large mature habitat trees has been avoided (particularly Marble Gum) where reasonably practicable.	X			Project footprints have sought to minimise removal of mature habitat trees. During clearing, large trees which could not be avoided were marked and stockpiled separately for use in rehabilitation.
1.17	Rehabilitation is undertaken as soon as is practicable.	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.
1.18	Rehabilitation areas are monitored for presence of weeds	X			Rehabilitation areas to date are relatively small and are monitored on an opportunistic basis.
1.19	Information on current flora and fauna conservation status is maintained	X			The Threatened Species and Communities Management Strategy has recently been updated to reflect changes in listings within the reporting period.
1.20	Site induction includes information on conservation significant flora, vegetation, fauna and habitat.	X			Site induction covers content on flora and fauna in the region. All employees are provided with access to a handbook which provides information on threatened species (flora and fauna) at TGM.

1.21	Open trenches are cleared and inspected for fauna at sunrise and sunset.	X			Construction of the Process Water Supply Borefield was completed in 2012/13.
1.22	Trenches do not exceed a length capable of being inspected by fauna clearing person.	X			Construction of the Process Water Supply Borefield was completed in 2012/13. Trenches inspected were of a length appropriate that the fauna clearing person could get to the trenches within the required timeframes (three hours after sunrise and three hours after sunset).
1.23	Fauna refuges and/or egress ramps are placed in the trench at 50 m intervals	X			Construction of the Process Water Supply Borefield was completed in 2012/13.
1.24	Report on fauna management following trenching activities has been produced.	X			Trench inspection fauna report submitted to the OEPA (now DWER) in June 2013.
		24	0	0	
		24	/	24	100%

2	Environmentally Hazardous Substances	Compliance			Observations/Findings/Comments
		Yes	No	N/A	
2.1	Avoiding critical habitat in the placement of storage, re-fuelling, handling and disposal facilities	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.
2.2	All pipelines are buried or bunded, have leak detection systems and automatic cut off systems	X			Pipelines are buried or bunded. Pipelines have leak detection and alarm through to the Tropicana Operations Centre, with the ability to remotely activate cutoff systems rather than automatic cutoff systems. Intent achieved.
2.3	The pipeline corridor to the Minigwal borefield avoids threatened or conservation significant species	X			The pipeline corridor and borefield was designed to avoid impacts of priority flora and Threatened fauna.
2.4	Hydrocarbons and chemicals are stored as per site procedures and Australian Standard 1940	X			Facility inspections and audits are undertaken regularly to ensure hydrocarbons and chemicals are stored appropriately. Chemicals stored to the relevant Australian Standard rather than just AS 1940. Intent achieved.
2.5	Dangerous Goods licensing covers all hazardous materials on site	X			Tropicana Gold Mine currently holds Dangerous Goods Licence # DGS020989. It is noted this commitment has practical limitations as Dangerous goods are a substances when transported have potential for an immediate impact, whereas hazardous substances can be any substance which can have ether immediate (acute) or long term (chronic) health impacts. Therefore, some hazardous substance may not be possible to be classified as dangerous goods.

					From an intent perspective, the Chemical Request process ensure that the Dangerous Goods Licence and risk of each chemical is considered prior to its approval for use on site.
2.6	Evidence of appropriate spill containment at refuelling bays	X			Spill kits are located at refuelling bays and at bulk storage facilities
2.7	Evidence of implementation of Emergency Response Procedures	X			Emergency response procedures are detailed in TGM Emergency Management Plan and ERT Procedures Manual Immediate Response Sheets for Environmentally Hazardous Substances include: ERT Immediate Response 6 - Diesel Spill ERT Immediate Response 2 – Hydrochloric Acid Spill ERT Immediate Response 5 - Lime Spill ERT Immediate Response 21 – Cyanide Spill ERT Immediate Response 3 – Sodium Hydroxide Spill ERT Immediate Response 4 – Lead Nitrate Spill During the reporting period, several HAZMAT emergency response exercises were undertaken.
2.8	Evidence of spill kit and emergency response training records for relevant staff.	X			Spill training is delivered as part of the TGM General Induction and provides information on spill kits with a specific question in the assessment. The ERT are trained to a higher level and these modules are part of a National Certification. Records are held by ERT. During the year ERT response drills conducted for Cyanide incident and HAZMAT exercises
		8	0	0	
		8	/	8	100%
3	**General Waste**	**Compliance**			**Observations/Findings/Comments**
		Yes	**No**	**N/A**	
3.1	Housekeeping and strict waste management practices	X			Waste management practices are in place for disposal of inert and putrescible wastes, recyclable wastes and controlled wastes.
3.2	All domestic waste is disposed within the licensed waste management facility	X			The Waste Management Facility is listed on the prescribed premises license.
3.3	All domestic rubbish bins have lids	X			Wheelie bins with lids are utilised for domestic waste.
3.4	Waste stations are labelled for the appropriate segregation of waste (e.g. recyclables, general waste, hydrocarbon waste)	X			Waste streams are managed by dedicated colour coded bins
3.5	Putrescible and inert waste is disposed of and covered within the licensed waste management facility.	X			Landfill at the Waste Management Facility contains dedicated putrescible and inert waste trenches which are covered at regular intervals
		5	0	0	100%

5	/	5	

4	Tailings	Compliance			Observations/Findings/Comments
		Yes	No	N/A	
4.1	The TSF design contains any potentially contaminated runoff, preventing uncontrolled discharge.	X			The TSF design allows for a total freeboard of at least 500 mm. During the reporting period localised high points at spigots 18 and 54 transgressed within 500 mm, but still within the crest of the TSF. Total stormwater storage within the TSF remained greater than the Probable Maximum Precipitation (PMP) event, satisfying the requirement of this commitment.
4.2	WAD CN levels in free water on the TSF do not exceed 50 mg/L	X			Supernatant WAD CN levels have ranged between 4.4 and 25.8 mg/L with an average of 14.3 mg/L.
4.3	Compliance with the International Cyanide Management Code	X			TGM has been Cyanide Code certified since August 2017. Next recertification scheduled for 2020
4.4	Animal access is restricted	X			Animal access around the TSF is managed by a combination of fencing and landform slopes of the TSF. Freshwater fauna ponds have been placed in locations outside of the TSF which preferentially attract fauna away from the TSF. These are frequented by avian and non-avian fauna.
4.5	The TSF Management Strategy has been implemented	X			Tailings Storage Facility Operating Manual is maintained and implemented to provide TGM personnel with information to operate the TSF in line with design parameters.
4.6	TSF design limits seepage through the installation of a basin liner, seepage recovery system and water recovery.		X		Groundwater monitoring around the TSF has indicated that TSF seepage is occurring at rates greater than the design intent. TGM has implemented a Seepage Mitigation Project to minimise the potential impacts of the seepage on the surrounding environment,
4.7	Operation of TSF limits volume of water stored on the TSF at any one time (through re-use)	X			Under normal operations, processing actively seeks to minimise the amount of water stored on the TSF
		6	1	0	
		6	/	7	86%

5	Dust	Compliance			Observations/Findings/Comments
		Yes	No	N/A	
5.1	Evidence of implementation of the CEMS and OEMS	X			Superseded by implementation of an environmental management system certified to ISO 14001

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5.2	Disturbance is minimised, and progressive rehabilitation undertaken to reduce the potential for dust generation from cleared areas.	X			Disturbance is undertaken progressively to minimise dust generation. Progressive rehabilitation has been undertaken where possible however, the project is currently in a phase where limited areas are available for rehabilitation.
5.3	Road speeds are limited to reduce dust generation.	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.
5.4	Growth medium stripping and clearing activities are undertaken in appropriate weather conditions	X			Growth medium is stripped in dry conditions only.
5.5	Dust suppression techniques are implemented.	X			Dust suppression, including water carts and conveyor sprinklers/sprayers are utilised to reduce dust generated onsite.
		5	0	0	
		5	/	5	100%
6	**Noise/ Vibration**	**Compliance**			**Observations/Findings/Comments**
		Yes	**No**	**N/A**	
6.1	Noise levels acceptable			X	Impractical to assess and arguably does not advance the cause of Threatened species management. Recommend deleting in next review of TSCMS
6.2	Vibration associated with blasting is being controlled			X	Impractical to assess and arguably does not advance the cause of Threatened species management. Recommend deleting in next review of TSCMS
		0	0	2	
		0	/	0	NA%
7	**Water Sources/ Storage**	**Compliance**			**Observations/Findings/Comments**
		Yes	**No**	**N/A**	
7.1	Water storage areas are fenced		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
7.2	Fauna egress and/or nets have been incorporated into permanent water storage sites	X			Scramble mats and or nets are installed. The majority of ponds also have a textured HDPE liners.
7.3	Evidence of fauna deterrent methods	X			In addition to fencing and fauna egress, artificial water ponds are in place to preferentially attract fauna to these ponds in lieu of the TSF.
		2	1	0	
		2	/	3	67%

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8	Erosion/ Sedimentation	Compliance			Observations/Findings/Comments
		Yes	No	N/A	
8.1	Routine inspections of erosion and sediment control structures	X			Inspection of site diversions and drains and sediment traps on landforms is undertaken in conjunction with surface water monitoring post significant rainfall events. Environmental Workplace Inspection are conducted on a monthly basis and cover erosion and sediment control structures throughout TGM.
8.2	Evidence of stormwater drains within the operational area.	X			Large drain established from edge of the ROM to beyond the TSF during construction
8.3	Installation of an effective diversion system to separate clean and dirty water	X			Toe/catch drains are installed around waste landforms and TSF to intercept sediment. Evidence of minor past sediment release adjacent to ROM, from an event in previous years. TGM Access Road and Village Road act to divert clear runoff from runoff entering site diversion drain. Site diversion drain allows water to bypass the TSF without ponding against the TSF embankment
8.4	Evidence of dust control measures	X			Dust suppression measures in place - water carts, sprinklers on stockpiles.
		4	0	0	
		4	/	4	100%

9	Terrestrial Ecosystems - Fire Regimes	Compliance			Observations/Findings/Comments
		Yes	No	N/A	
9.1	Flammable liquids are stored appropriately	X			Flammable liquids are stored as per Dangerous Goods Safety Act. In almost all cases items requiring petrol (flammable liquid) have been substituted with diesel powered (C1 combustible) engines.
9.2	Fire protocols have been implemented to reduce the risk of fire	X			Fire protocols implemented include: Fire breaks at strategic/high risk locations Protocols to close the TGM Access road at both the TGM and Pinjin ends of the road and suspend DIDO authorisations for vehicles coming to/from site in the event of fire risk along the Pinjin Infrastructure corridor Fire prevention and response procedures for various fire types including bushfire Like most bushfires in regional Western Australia TGM does not actively engage with bushfires, unless there is a threat to people or property. When bushfires come close to the mine, additional precautions are triggered including back burning against natural containment lines such as roads after consultation with DBCA and Shire of Menzies. As an example, a bushfire on 23 January 2019 approached TGM from the northwest putting the village at risk.

					Preventative measures adopted included • Activation of the Incident Management Team and Emergency Response Team with continuous on duty emergency response personnel • An emergency GDP to upgrade the village firebreak from the direction of the fire • Review of muster points in the event evacuation was required • Review of access points around the village for Mining fleet water carts
9.3	Fire breaks have been established adjacent to high risk areas	X			Fire breaks located in the following locations: Village, Aerodrome, Waste Water Treatment Facility, Waste Management Facility, Explosives Magazine, communications towers along the TGM Access Road and the Process Water Supply Borefield power station/transfer pond/communications tower compound. Firebreaks will be installed/upgraded if there is an imminent risk of fire.
9.4	Designated smoking areas and provision of appropriate cigarette disposal.	X			Designated smoking areas established on site. Cigarette butt disposal pockets available to all employees.
9.5	Collaboration with regulators to reduce the risk of fires	X			TGM works activity with and regularly collaborates with the DBCA regarding cooperation, fire regimes and bush fire liaison in the area. TGM has also previously worked closely with DFES regarding fire preparedness of the village and appropriate prescribed burning regimes.
		5	0	0	
		5	/	5	100%

10	**Terrestrial Ecosystems - Invasive Flora**	**Compliance**			**Observations/Findings/Comments**
		Yes	**No**	**N/A**	
10.1	Invasive flora management procedures have been implemented	X			Vehicle Hygiene certificate process implemented for equipment mobilising to site. Targeted inspections of high risk areas post rainfall events.
10.2	Strict vehicle hygiene practices implemented	X			Upon arrival to site, the Environment team will inspect all equipment to ensure it is free of soil or vegetative matter and free of hydrocarbon leaks/frayed hoses.
10.3	Inductions and training promote awareness of weeds	X			Induction includes content on weeds and the strict vehicle mobilisation protocols. Toolbox topics and training materials target potential weed species.

10.4	Inspections are undertaken to record invasive flora infestation or changes in invasive flora.	X			Targeted inspections of high risk areas post rainfall events. Monthly workplace inspections include the requirement to inspect all work spaces for the presence of weeds
10.5	All soil brought to site is certified weed free.	X			No soil brought to site during the reporting period
10.6	Control and treatment measures for weeds are developed in consultation with DPaW where appropriate	X			Rhodes Grass was identified at the aerodrome during the year. The infestation was removed and has been added to the TGM weed layer for re-inspection. As a small infestation, consultation with DBCA was not warranted for its control.
10.7	Clean seed and local seed only to be harvested for use in rehabilitation	X			Seed is harvested, cleaned and stored by a reputable company. Seed is only collected within a close range of TGM.
		7	0	0	
		7	/	7	100%

11	Terrestrial Ecosystems - Invasive Fauna	Compliance			Observations/Findings/Comments
		Yes	No	N/A	
11.1	No pets on site	X			TGM is a FIFO operation and no pets are allowed on flights/site.
11.2	Putrescible waste is disposed of in the licensed waste management facility	X			Putrescible waste is disposed into putrescible waste trench at the Waste Management Facility under Prescribed Premises Licence 8676/2012/1
11.3	Water storage facilities are fenced		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
11.4	Stormwater management around site minimises ponding	X			Ponding after significant rainfall events typically lasts a very short time due to the sandy nature of the underlying soil in most locations.
11.5	Taps are maintained to prevent leaks	X			Planned maintenance, inspections and work requests for all pipelines, fixtures and fittings.
		4	1	0	
		4	/	5	80%

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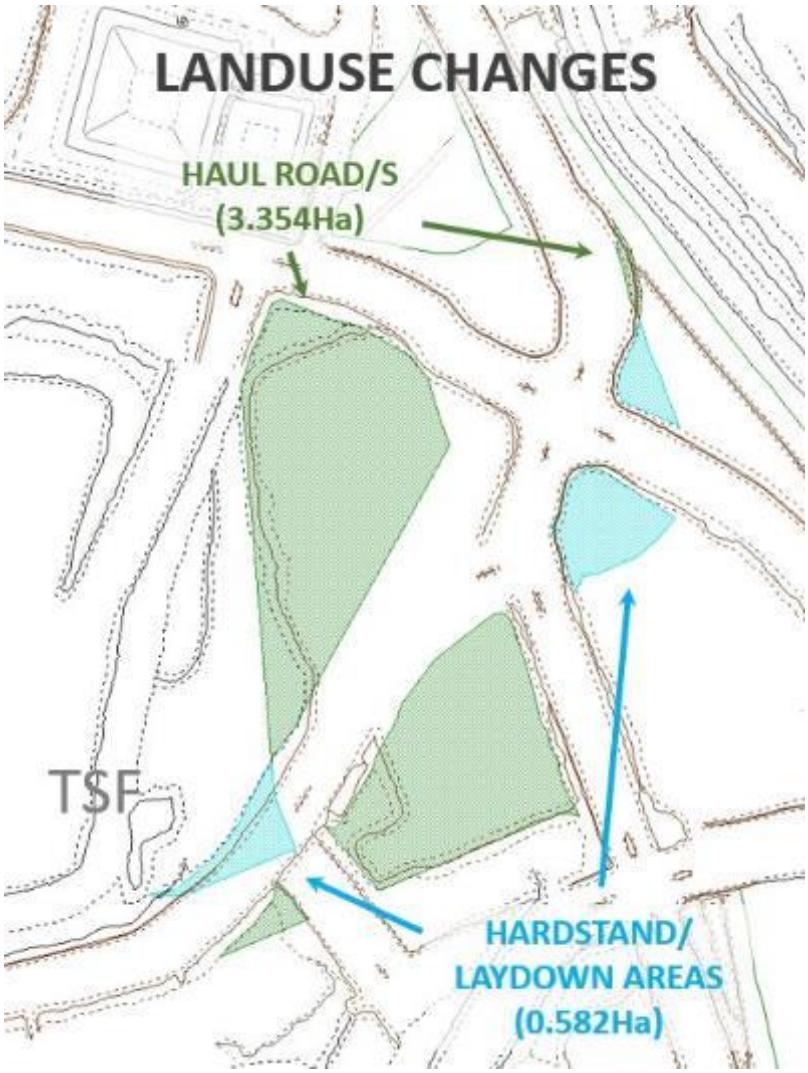
12	Terrestrial Ecosystems - Traffic	Compliance			Observations/Findings/Comments
		Yes	No	N/A	
12.1	Speed limits consider interaction with and impacts to threatened fauna	X			Speed limits on site do not exceed 60 km/h. Access road permits speed up to 80 km/ h. All employees are required to drive to the conditions.
12.2	Infrastructure corridors have avoided bisecting critical habitats	X			Environmental values were taken into consideration during project footprint design, minimising impacts to mapped Threatened fauna habitat
12.3	Evidence of signs present in areas of threatened fauna habitat along roadsides		X		Signs have not been installed. However, roads have substantial windrows preventing offroad access. Along tracks signage is not practicable.
12.4	No evidence of unauthorised off-road driving	X			Impractical to audit. However, induction reinforces off-road driving is not permitted on site without specific authorisation such as a Programme of Works for exploration.
		3	0	0	
		3	/	4	75%
13	**Terrestrial Ecosystems - Increase Use of Region Nature Reserves**	**Compliance**			**Observations/Findings/Comments**
		Yes	**No**	**N/A**	
13.1	Restrict vehicle movement and unauthorised use of the mine access road.	X			DIDO forms required to drive to site - requiring GM approval. 'No Unauthorised Access' signage installed at the start of and at various access points to the road to discourage use by the general public
		1	0	0	
		1	/	1	100%
AUDIT SCORE		**74**	**/**	**78**	**95%**

Appendix 7 – Ground Disturbance Permits

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: **29/03/2019**		Date of application: **29/03/2019**	
Expected clearing completion date: 01/05/2019			
Request completed by:	Name: **David Meikle**	Department: **Mining**	
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: **N/A**	Area of disturbance (ha):	
	(Copy dropdown list and add additional rows if multiple land use types are required)		
Tenement/s being disturbed:	**N/A**		
Location of disturbance activity:	 See Below section for detailed land use change information.		

Spatial files attached:	*Spatial files must be submitted with this form.*		
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 1st Land Use Change		NO ☐
	Previous Land Use: **Hardstand/Laydown Areas**		
	New Land Use: **Haul Road/s**		
	Area of Land Use Change (ha): 3.286		
	YES 2nd Land Use Change		NO ☐
	Previous Land Use: **Waste Landorms**		
	New Land Use: **Haul Road/s**		
	Area of Land Use Change (ha): 0.068		
	YES 3rd Land Use Change		NO ☐
	Previous Land Use: **Haul Road/s**		
	New Land Use: **Hardstand/Laydown Areas**		
	Area of Land Use Change (ha): 0.582		
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:		
	Stockpile location:		
Will vegetation be collected?	YES ☐ NO ☐		
	If no, provide a reason:		
	Vegetation Type/s – Large trees/Scrub ☐ Shrubs/Mixed ☐ Other: ☐		
	Stockpile location:		

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: 20141224		
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: 08/04/2019	Date:
Name: Matt Stingemore	Name:
Signature: 	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 has been approved in accordance with the following conditions: 1. This GDP authorises: a. Land Use Change of **3.286 ha** from Hardstand / Laydown to **Haul Road**. b. Land Use Change of **0.068 ha** from Waste Landform to **Hardstand / Laydown**. **c.** Land Use Change of **0.582 ha** from Haul Road to **Hardstand / Laydown** 2. This GDP does not provide authorisation for any additional permits that may be required (such as excavation and penetration permit).
GDP Requestor Review of Conditions	Date: Name: Signature:

Map of Proposed Disturbance Activity (Requestor to complete)

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Ground Disturbance

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: 12/06/2019	Date/s of proposed disturbance:13/06/2019		
Expected clearing completion date:			
Request completed by:	Name: Steve Callaghan	Department: Projects and Infrastructure	
Activity to be conducted by:	Department/Contractor:		
Part B – Scope of Ground Disturbance (Requestor to complete)			
Ground Disturbance and land use: *(If unsure speak to the Environment Department)*	Land Use: **Accommodation Areas**	Area of disturbance (ha):	1.8123 ha
	(Copy dropdown list and add additional rows if multiple land use types are required)		
Tenement/s being disturbed:	**M39/1096**		
Location of disturbance activity:	*Attach a map clearly showing the location of the disturbance and the type/s of landuse being requested.*		
Spatial files attached:	*Spatial files must be submitted with this form.*		
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 ☐		NO ☒
	Previous Land Use: **Select From Dropdown List**		
	New Land Use: **Select From Dropdown List**		
	Area of Land Use Change (ha):		
	(Copy the above three rows and Insert additional rows if multiple Land Use Changes are required)		
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: 100mm/300mm,		
	Stockpile location: GM20		
Will vegetation be collected?	YES ☒ NO ☐		
	If no, provide a reason:		
	Vegetation Type/s – Large trees/Scrub ☒ Shrubs/Mixed ☒ Other: ☐		
	Stockpile location: GM20		

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:		
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: 230**		

Approval Granted:	**Approval Not Granted:**
Date: 12/06/2019	Date:
Name: Jane Dunne	Name:
Signature: JDunne	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 has been approved in accordance with the following conditions: 1. This GDP authorises clearing of up to 1.8945 ha for Accommodation Areas. 2. This GDP does not provide authorisation for any additional permits that may be required (such as excavation and penetration permit). 3. Growth medium and cleared vegetation are to be stockpiled at GM20 4. This GDP Permit must be signed by the GDP requestor and supervisor acknowledging they have read and understand all of the conditions outlined in this GDP. 5. The areas to be cleared at to be clearly pegged or flagged by the Survey team before work can commence.

GDP Requestor Review of Conditions	Date: Name: Signature:

Map of Proposed Disturbance Activity (Requestor to complete)

Appendix 8 – Vegetation Monitoring Report