



## Application for Licence Amendment

### Part V Division 3 of the *Environmental Protection Act 1986*

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<b>Licence Number</b>	L6420/1988/14
<b>Licence Holder</b>	Kalgoorlie Consolidated Gold Mines Pty Ltd
<b>ACN</b>	009 377 619
<b>File Number</b>	DER2015/002506-1
<b>Premises</b>	<p>Fimiston Processing Plant</p> <p>Tenements G26/15, G26/44-68, G26/70-71, G26/73-78, G26/82-86, G26/99-107, G26/138-145, G26/149, G26/159, G26/160, G26/165, G26/166, L26/267, M26/39, M26/46, M26/78, M26/86, M26/95, M26/267-268, M26/294, M26/308, M26/326, M26/359, M26/377, M26/383, M26/405, M26/448, M26/451 M26/715, M26/81, M26/83, M26/86, M26/266, M26/267, M26/294, M26/326, M26/373, M26/379, M26/454, M26/518, M26/748, and M26/800, KALGOORLIE WA 6430</p> <p>As defined in Schedule 1 of the licence.</p>
<b>Date of Report</b>	7 May 2024
<b>Decision</b>	Revised licence granted

MANAGER, RESOURCE INDUSTRIES  
REGULATORY SERVICES  
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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## 1. Decision summary

The Delegated Officer has determined to make amendments to Licence L6420/1988/14. The amendments are administrative in nature therefore they do not alter the risk profile of the Premises, providing that activities, emissions and receptors as stated in existing approvals remain unchanged.

This Amendment Report documents the amendments made pursuant to section 59 and 59(B) of the *Environmental Protection Act 1986* (EP Act).

The decision report for the Existing licence will remain on the department's website for future reference and will act as a record of the department's decision making.

## 2. Scope of assessment

### 2.1 Regulatory framework

In amending the licence, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Amendment summary

Licence L6420/1988/14 is held by Kalgoorlie Consolidated Gold Mines Pty Ltd (Licence Holder) for the Fimiston Processing Plant (the Premises), located within mining tenements G26/15, G26/44-68, G26/70-71, G26/73-78, G26/82-86, G26/99-107, G26/138-145, G26/149, G26/159, G26/160, G26/165, G26/166, L26/267, M26/39, M26/46, M26/78, M26/86, M26/95, M26/267-268, M26/294, M26/308, M26/326, M26/359, M26/377, M26/383, M26/405, M26/448, M26/451, M26/715, M26/81, M26/83, M26/86, M26/266, M26/267, M26/294, M26/326, M26/373, M26/379, M26/454, M26/518, M26/748, and M26/800, Kalgoorlie, Western Australia.

On 29 November 2023 the Licence Holder submitted an application to the department to amend Licence L6420/1988/14 under section 59B of the *Environmental Protection Act 1986* (EP Act). The amendment is limited to:

- Relocation of compliance monitoring bores and production bores associated with the Kaltailis Tailings Storage Facility (TSF)
- Relocation of compliance monitoring bores located in Trafalgar borefield.

As part of the ongoing management of the Kaltails Tailings Storage Facility (TSF), The Licence Holder plans to install additional waste rock buttressing along some portions of the southern, western and northern embankments to maintain the required geotechnical factor of safety (FoS). This would result in the decommissioning of 22 production bores (for seepage recovery) and 12 monitoring bores. The licence holder is also planning to expand the Oroya Waste Rock Dump (WRD), which will require monitoring bores TRE and TRP2 to be decommissioned and replaced in a nearby location.

The scope of this report is limited to assessing the suitability of the revised locations of existing monitoring bores. In this report, the department is not re-assessing the seepage impacts from the Kaltailis TSF risk event. This has been previously assessed in decision reports related to the site.

The Premises relates to prescribed premises categories: 5, 12, 54, 63 and 64 and the assessed production capacities under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in existing Licence L6420/1988/14.

### 2.2.1 Kaltails TSF monitoring and production bores

The Kaltails TSF is a paddock style TSF made up of two cells. Between 2018 and present the Licence Holder has undertaken a phased approach to buttressing of the Kaltails TSF embankments to ensure a sufficient geotechnical FoS. The Licence Holder is planning to install a Phase II waste rock buttress along portions of the southern, western and northern embankments to ensure geotechnical stability of the facility for future lifts (already authorised by the licence under condition 5) and to maintain the required FoS. It is expected that earthworks will extend up to 36 meters (m) from the existing toe drain. It is also anticipated that re-establishing a toe drain, road access, monitoring and production bores, power and pipeline infrastructure may require a further corridor around 90 m in width. The buttressing and corridor design has been approved under Mining Proposal RegID 116908 by the Department of Energy, Mining and Industry Regulation (DEMIRS).

Due to the construction of the buttressing, four licenced monitoring bores will be required to be decommissioned as they are located within the buttressing footprint (monitoring bores MB K19, MB K22, MB K43, MB K47). Six new monitoring bores (MK K78, MB K79, MB K80, MB K81, MB K82, MB K83) are proposed to be constructed within the new infrastructure corridor outside of the area where any future buttressing work is planned. Due to the nature of the hydrology and lithology of the surrounding Kaltails area, the final location of the monitoring bores cannot be determined until after drilling. Therefore, the Licence Holder is requesting approval to install the bores within a specified zone as shown in Figure 1. It is proposed that replacement bores will be installed with 50 mm PVC to a depth of 24 meters below ground level (mbgl) and screened with ferricrete and alluvial sediments.

#### **Kaltails Seepage and Groundwater Management Plan (KSGMP)**

Condition 26 of the licence requires the Licence Holder to have an approved Kaltails Seepage and Groundwater Management Plan (KSGMP) for the Kaltails TSF. Components of the KSGMP include minimising the extent of the supernatant pond in the operating deposition cell, operating two seepage interception trenches, operating 45 groundwater production bores, and collection of groundwater data from 54 monitoring bores. The aim of the KSGMP is to ensure that hypersaline groundwater does not mound into the root zone of vegetation surrounding the TSF. Currently the total combined pumping capacity of the production bores is 54 L/s

As a result of the planned buttressing work a number of production bores managed under this KSGMP (and groundwater licence GWL159860(6) issued under the *Rights in Water and Irrigation Act 1914*) will also be decommissioned, with new production bores being constructed and relocated into the new infrastructure corridor (see Figure 2). It is anticipated that 15-20 production bores will be required to be replaced. The KSGMP will be updated once the new bores have been installed.

The Licence Holder engaged a consultant who undertook a hydrogeological assessment (BDH, 2022) to determine ongoing suitability for KSGMP in controlling groundwater depths in context of proposed buttress construction works. The assessment concluded that overall groundwater depths are currently either stable or gradually declining on average surrounding the Kaltails TSF. This confirms that the current operation of the production bores and the two seepage interception trenches (average recovered flow rate of approximately 54 L/s) is sufficient to match the combined influences of TSF seepage and natural recharge. All compliance monitoring bores currently have groundwater depths below the limits set out in Licence L6420/1988/14.

It is expected that tailings deposition rates into the TSF are expected to be maintained in the future and that seepage rates are not expected to change significantly (BDH, 2022). It is therefore anticipated that seepage influences on groundwater will continue to be successfully managed in future by application of the KSGMP at total pumping rates in the region of 54 L/s. Any significant loss of pumping capacity due to permanently decommissioning KSGMP infrastructure to allow the planned buttressing works will therefore need to be replaced by installing new infrastructure. The licence holder has committed to installing 15-20 replacement

production bores in order to maintain similar pumping rates as what is currently achieved.

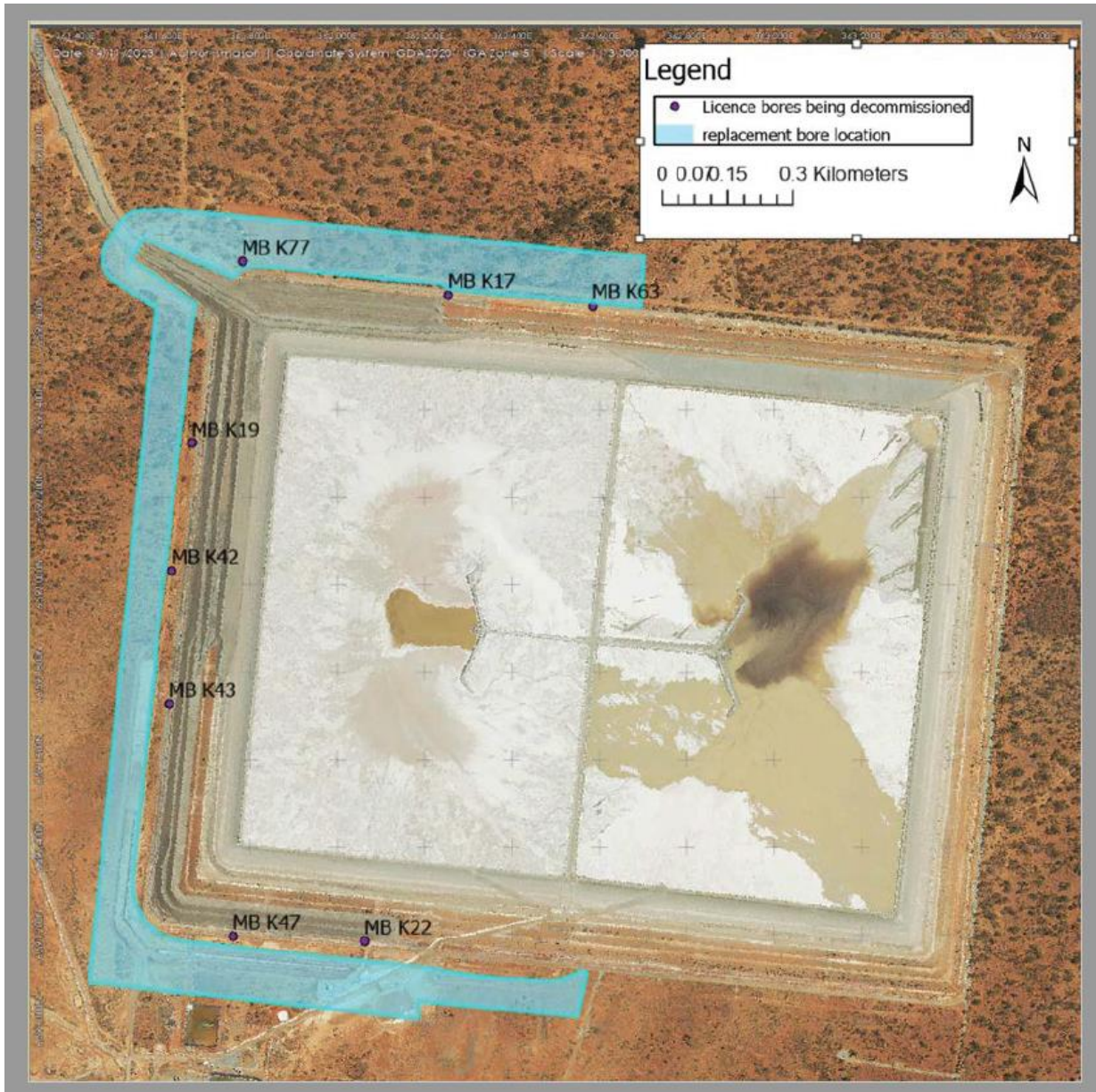
The application supporting document outlined that a seepage trench (Kaltails Seepage Interception Trench 2 depicted in Schedule 1 of the licence) on the southwestern corner of the TSF will also be required to be relocated outside of the buttressing footprint and moved to the new toe of the facility. However, the licence holder has confirmed that no change will occur to the southwest seepage trench as a result of the buttressing work, and it will remain operational and within its existing location. Therefore, this has been removed from the scope of this amendment application.

### 2.2.2 Replacement of monitoring bores TRE and TRP2

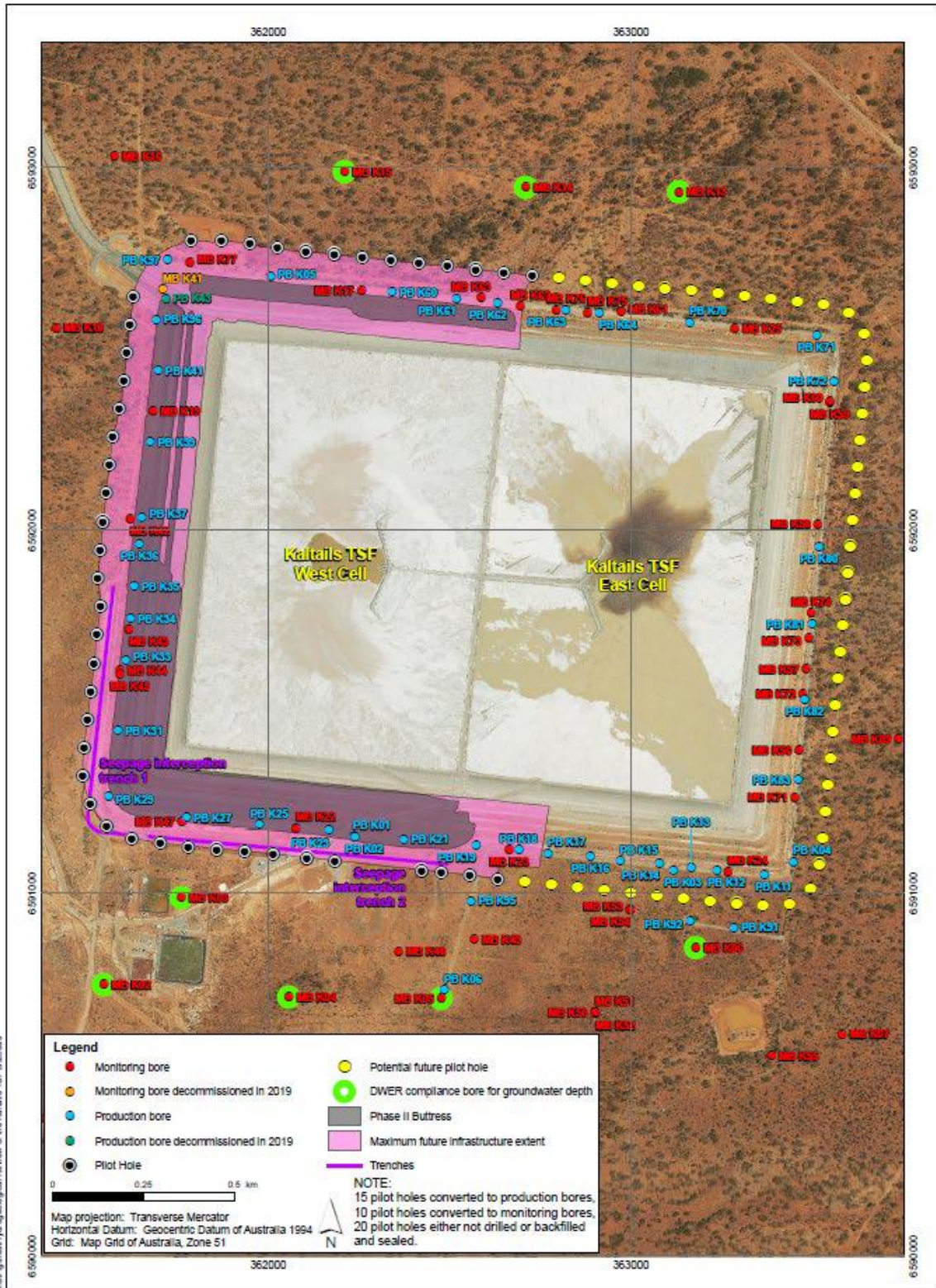
The Licence holder is planning to expand the Oroya Waste Rock Dump (WRD), which will require monitoring bores TRE and TRP2 to be decommissioned. These bores are associated with the Trafalgar Borefield and have been listed on the licence as regional monitoring bores. From 1993 to 2011, TRE and TRP2 demonstrate steadily deepening groundwater depths, which reflects the recovery of seepage influences after the Oroya TSF located to the west (and now buried by the WRD) was decommissioned sometime around 1996. From 2011 onwards, TRE and TRP2 demonstrate shallowing groundwater depths due to some degree of groundwater mounding due to the expansion of the Oroya WRD towards these bores.

Two replacement bores (TRP3 and TRP4) will be constructed outside of the WRD footprint further east of the current location. The Licence Holder engaged a consultant who undertook a hydrogeological assessment (BDH, 2023) to determine suitable new locations for these two replacement bores. The two new locations are shown in Figure 3. The rationale for selecting these locations (as outlined in BDH, 2023) was:

- 'Based on the hydrogeological interpretation it can be confidently anticipated that bores drilled anywhere close to the central surface water system in the Eastern Floodway will intersect the ferricrete and alluvial sediment groundwater system which is the primary means of transmission of seepage from the mine facilities'.
- 'The locations are outside of the maximum extent of future disturbance, while being kept close to the final footprint of the WRD so that the bores will respond to any groundwater mounding associated with facility seepage'.



**Figure 1: Groundwater monitoring bores to be decommissioned and the area where replacement bores will be constructed.**



G:\P\egad\B0H Project\Kaitails\GIS\Figures\Hydrogeological Review of the Kaitails TSF Buttress



**Proposed hydrogeological works**

**Figure 16**  
 Date: October 2022  
 Report: Hydrogeological Review of the Kaitails TSF Buttress

**Figure 2: Location of the buttressing work and monitoring / recovery bores that will be impacted and will need replacement.**

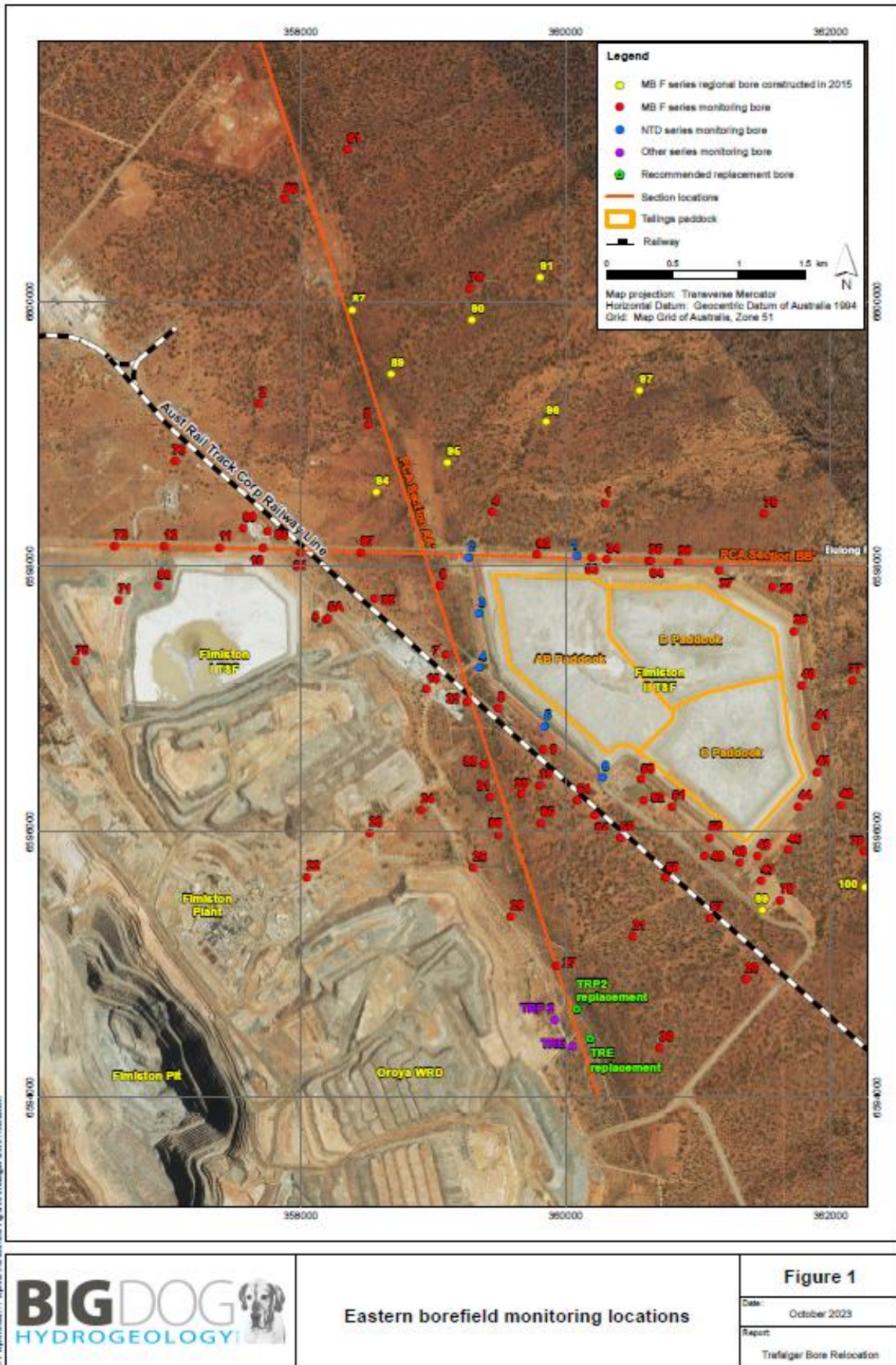


Figure 3: Location of TRP2 and TRE bores and their replacement locations.



### 3. Decision

As part of this licence amendment application the Licence Holder has submitted two hydrogeological assessments carried out by Big Dog Hydrogeology (2022 and 2023) that looked at the suitability of the proposed location of the replacement monitoring bores. A review of these assessments has been undertaken and the Delegated Officer has determined that the proposed locations for the replacement monitoring bores is acceptable.

This licence amendment provides approval for construction of the replacement compliance monitoring bores and decommissioning of redundant monitoring compliance bores. As the locations of the new monitoring bores has not been finalised, a subsequent licence amendment will be required following construction of the monitoring bores to update the monitoring location maps within Schedule 1 of the licence.

Conditions have been added to the licence approving the construction of the new monitoring bores and outlining the design and installation requirements for these bores. Conditions requiring the licence holder to submit a bore construction compliance report once the bores have been constructed has also been added to the licence.

A number of production bores managed under the KSCMP and GWL 159860(6) will also be decommissioned and relocated as outlined in the above section. These production bores are not listed within conditions of licence and therefore no changes to conditions have been made as part of this amendment. However, the licence holder will continue to be required to comply with conditions 26 – 29 of their licence which requires implementation of the KSCMP and compliance with specified groundwater level limits within bores surrounding the Kaltails TSF. As indicated by the hydrogeological assessment carried out by Big Dog Hydrogeology (2022) the Licence Holder will need to maintain pumping capacity under the KSCMP similar to the current pumping capacity in order to maintain current groundwater levels. The licence holder has committed to replacing the decommissioned production bores surrounding the Kaltails TSF in order to maintain this pumping capacity.

### 4. Consultation

The Licence Holder was provided with the draft Amendment Report on 8 March 2024. Comments received from the Licence Holder on 12 April 2024 have been considered by the Delegated Officer as detailed in Appendix 1.

### 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that an amended licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

#### 5.1 Summary of amendments

Table 1 below provides a summary of the proposed amendments and will act as a record of implemented changes. All proposed changes have been incorporated into the Revised licence as part of the amendment process.

**Table 1: Summary of licence amendments**

Condition no.	Proposed amendments
Condition 7	New condition 7 to specify monitoring bore construction requirements
Condition 8	New condition 8 requiring a report demonstrating the compliance with the monitoring bore construction requirements.

Condition no.	Proposed amendments
Condition numbering change	Condition number references and table references have been updated due to the addition of two new conditions 7 and 8.
Schedule 1 Maps	Eastern borefields monitoring locations updated with a placeholder figure showing proposed revised locations of TRE and TRP2
Schedule 2: Maps of monitoring locations	<p>New map of monitoring locations 1. This is to specify eastern bore field construction locations (TRP3 &amp; TRP4).</p> <p>New map of monitoring locations 2. This is to specify construction locations of new Kaltails bores (MK K78, MB K79, MB K80, MB K81, MB K82, MB K83)</p>
Maps of monitoring locations – Tables 1 and 2	Decommissioned bores removed (TRE, TRP2, MB K19, MB K22, MB K43, MB K47) and new bore references added (TRP3 & TRP4, MK K78, MB K79, MB K80, MB K81, MB K82, MB K83).

## References

1. *Big Dog Hydrogeology Pty Ltd (BDH) 2022, Recommendations for Replacement of Monitoring Bores TRE and TRP2*
2. *Big Dog Hydrogeology Pty Ltd (BDH) 2023, Hydrogeological Review of the Proposed Buttressing of the Kaltails TSF*
3. *Department of Environment Regulation (DER) 2015, Guidance Statement: Setting Conditions, Perth, Western Australia.*
4. *Department of Water and Environmental Regulation (DWER) 2020, Guideline: Environmental Siting, Perth, Western Australia.*
5. *DWER 2020, Guideline: Risk Assessments, Perth, Western Australia.*
6. *Environmental Protection Authority (EPA) 2018, Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual, Environmental Protection Authority, Perth, WA.*

## Appendix 1: Summary of Licence Holder's comments on draft amendment

Condition	Summary of Licence Holder's comment	Department's response
Condition 7 Table 7	The licence holder has managed to retain monitoring bores MB K17, MB K63 and MB K77. As a result of this, the applicant proposes that six monitoring bores rather than eight are sufficient to monitor Kaltails storage facility.	The Department has revised condition 7 to reduce monitoring well construction requirements and reinstate retained monitoring bores.
Licence Conditions – Construction Requirements Condition 7 – Table 7. Row 1 Timeframe	Request timeframe change to 90 calendar days to allow for Additional time between decommissioning the bores and bringing the new ones online. This minimises risk from potential delays with the construction and development of the new monitoring bores,	Condition revised to allow for 90 calendar days.
Licence Conditions – Construction Requirements Condition 8	Request timeframe change to 90 calendar days as it is unlikely that KCGM will be in a position to have the well construction report finalised and submitted within 30 calendar days of bores being constructed. More time is requested to ensure our hydrogeologists can collate all the required information including liaising with the drillers on bore logs, survey data etc and sufficient time for internal review by KCGM.	Condition revised to allow for 90 calendar days