



Amendment Notice #3

Licence Number	L8698/2012/1
Licence Holder	Andy Well Mining Pty Ltd
ACN	158 108 895
File Number:	2012/007203
Premises	Andy Well Gold Project Mining Tenement M51/870 MEEKATHARRA WA 6642
Date of Amendment	01/05/2019

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Alana Kidd

Manager, Resource Industries

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Definitions and interpretation

Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Amendment Notice	refers to this document
Biannual	means two monitoring events a year, at least five months apart
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
Licence Holder Licensee	Andy Well Mining Pty Ltd

Minister	the Minister responsible for the EP Act and associated regulations
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
TDS	means Total dissolved Solids.
TSS	means Total Suspended Solids
Waterlogging	means 'visible pooling of water on soil surface'

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to a change to the Licence Holder name and conditions pertaining to Category 6 – Dewatering. No other changes to the aspects of the original Licence have been made.

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*

Amendment description

On 13 February 2019, Doray Minerals Limited (Licence Holder) submitted an application to DWER for an amendment to the Andy Well Gold Project (the Project) operational licence L8698/2012/1. The licence amendment relates to the following:

- A change of the Licence Holder from Doray Minerals to Andy Well Mining Pty Ltd; and
- An extension (by 250m) to the ridgeline discharge point pipeline to the south.

A CEO initiated amendment for Category 6 dewatering has also been incorporated into this amendment notice. This amendment is to implement management measures outlined within Doray Minerals Limited's environmental management plan (EMP, 2019) submitted to DWER on 13 February 2019 and to include additional monitoring requirements for the dewatering discharge area to ensure management measures are being successful in minimising waterlogging impacts to the ridgeline.

Change in Licence Holder

Currently the licence holder of L8698/2012/1 is Doray Minerals Limited (Doray) (ABN 77 157 881 779 / ACN: 138 978631). Doray owns the company Andy Well Mining Pty Ltd (ACN: 158 108 895), which operates the Andy Well Gold Project and is the holder of the mining tenement in which the project operates from (M 51/870).

Doray had plans to sell Andy Well Mining Pty Ltd to another mining company and with it the Andy Well Gold Project. This event is what triggered Doray to apply for this licence amendment to move licence L8698/2012/1 to Andy Well Mining Pty Ltd. However the sale has fallen through and will no longer be occurring. Doray nevertheless will still like the transfer of the licence to Andy Well Pty Ltd to still go ahead.

Doray has provided documentation confirming that Andy Well Mining Pty Ltd is the authorised holder of mining tenement M51/870 which forms the prescribed premises boundary for licence L8698/2012/1.

Extension of ridgeline discharge pipeline

The Andy Well Gold Project is currently in care and maintenance (C&M) and has been since July 2017. During this time the Licence Holder has continued dewatering activities in order to keep the underground mine dry. The excess water is discharged to land in a controlled manner to an area located on a ridgeline to the east of the mine site (Figure 1). The area consists of a main pipeline that runs along the ridge with valved connections to a series of smaller diameter

perforated discharge spigots. The current discharge front is approximately 1.1km long. The Licence Holder is currently authorised to discharge up to 600 000 kL/year during operation and up to 1 000 000 kL/year during C&M due to the decrease in water being used for operational purposes.

July 2018 amendment

On 13 July 2018 the current licence was amended to allow for an increase in dewatering discharge to the ridgeline during C&M and to include the Suzie open pit as a disposal location for excess dewatering water. As a part of this amendment an improvement condition was added which required the Licence Holder to develop and submit an environmental management plan to DWER outlining appropriate management of the waterlogging impacts to the ridgeline, as identified during the amendment assessment.

The Licence Holder has proposed an alternative disposal location for some of the dewatering effluent to help minimise waterlogging impacts to the northern ridgeline as part of the environmental management plan (resubmitted to DWER on 13 February 2019 (EMP, 2019)).

The Licence Holder is proposing the construction of a supplementary 250 m southern dewatering discharge line with four additional discharge spigots to help manage potential waterlogging. This will result in two discharge areas which can be alternated (north and south of the ridgeline) thereby reducing the volume of water currently discharged alone to the northern ridgeline while increasing the overall surface discharge area.

Vegetation mapping carried out by Matiske (2011) indicates that the proposed southern discharge area comprises of open scrub of *Eremophila*, *Acacia* and *Ptilotus* species over sandy/loam to clay-loam flats. No threatened or rare flora have been identified within the proposed southern discharge area.

When construction of the Andy Well Gold project began the main surface water drainage diversion works included a south eastern diversion bund whereby local run-off would be intercepted and diverted around the minesite. The southern spigots will be placed up-stream of the existing surface water diversion bund and, if required, water that is not infiltrated over the sheet-wash plain, would intercept this existing surface diversion feature. However, it is not expected for flows from the southern dewatering discharge to reach this diversion bund due to the separation distance and the infiltration of the water into soil.

Southern Discharge pipeline

The southern discharge pipeline and spigots will be of similar construction to the current northern discharge pipeline design. The main southern pipeline will comprise a 110 mm poly-welded pipeline that will tee-off from the existing northern discharge pipeline. Four spigots will branch off from the main pipeline via a T-piece branch where poly-piping with discharge holes drilled, will be installed to diffuse the dewatering discharge.

A branch handle will be installed to enable water flow to be switched on/switched off to the southern discharge area as required. Alternating, or running concurrently, between the active northern and southern discharge areas which will be changed as required subject to any visible ponding in either area. This will be managed on a daily basis during routine inspections. The volume of water discharged to each area will be recorded via a Mag-flow meter with daily volume readings recorded.

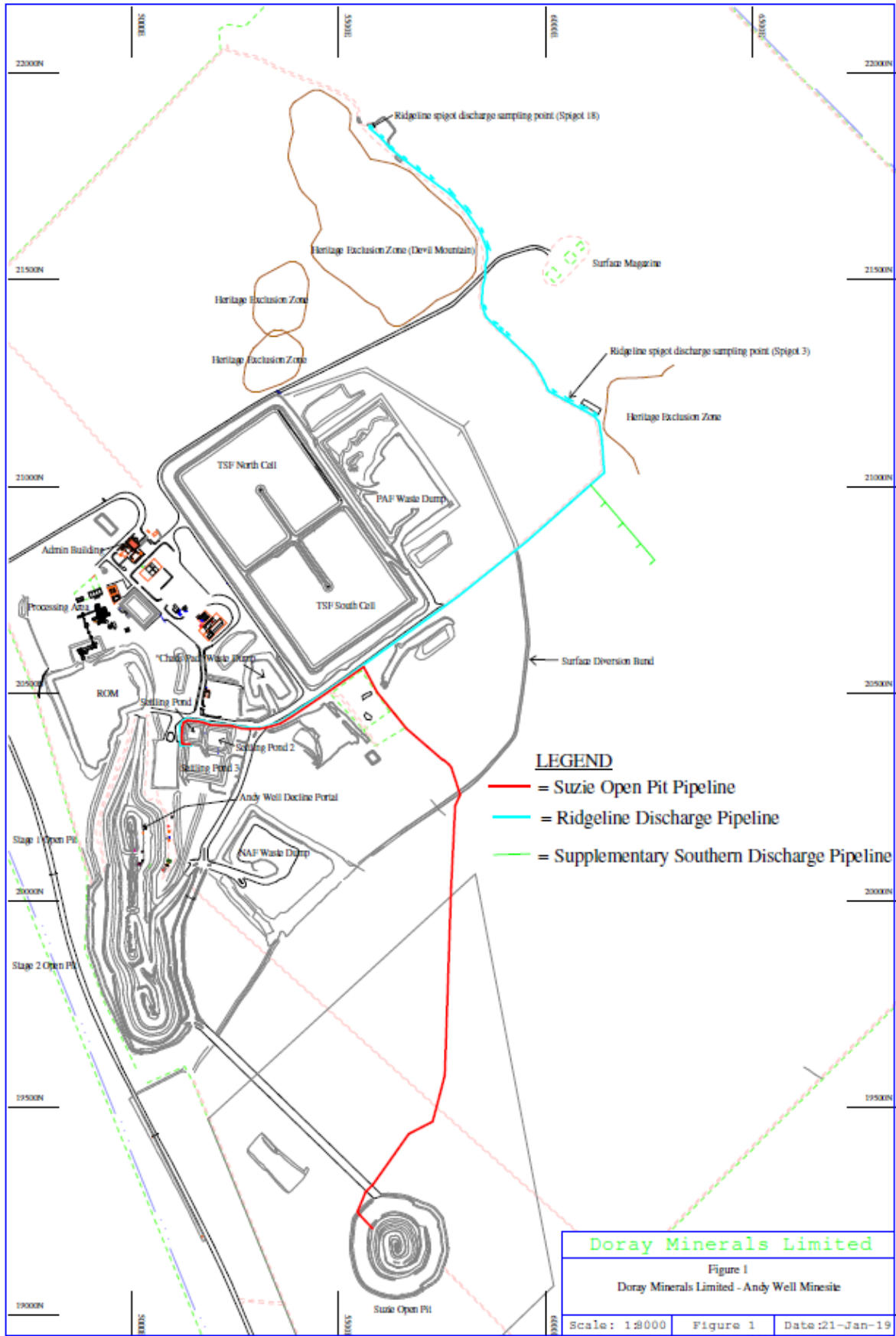


Figure 1: Site layout (proposed southern discharge line shown in green).

Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 2.

Table 2: Relevant approvals

Legislation	Number	Approval
<i>Rights in Water and Irrigation Act 1914</i>	GWL175556(4)	DWER Groundwater Licence for the abstraction of 2,000,000 kL/yr (64.5 L/sec)
<i>Mining Act 1978</i>	Registration ID: 36216	Mining Proposal for Andy Well Gold Project
<i>Mining Act 1978</i>	Registration ID: 69427	Mining Proposal Addendum – Dewatering discharge into the suzie Open Pit
<i>Mining Act 1978</i>	Registration ID: 78455	Mining Proposal Addendum – Southern discharge pipeline (has not yet been finalized).
<i>Environmental Protection Act 1986</i>	5035/1	(DIMIRS) Clearing Permit. Permit covers entire Premises. No conditions.

Amendment history

Table 3 provides the amendment history for L8698/2012/1.

Table 3: Licence amendments.

Instrument	Issued	Amendment
L8698/2012/1	07/06/2013	Licence amendment to add category 5.
L8698/2012/1	31/10/2013	Licence amendment to correct an administrative error.
L8698/2012/1	21/11/2013	Licence amendment to increase throughput.
L8698/2012/1	17/07/2014	Licence amendment to increase throughput and to convert to new licence template.
L8698/2012/1	25/09/2014	Licence amendment to change groundwater monitoring requirements.
L8698/2012/1	21/01/2016	Licence amendment to increase the total dissolved solids limit for mine dewatering discharge to land and the removal and replacement of monitoring bore references.
L8698/2012/1	27/01/2017	Licence amendment to allow for a lift at the TSF.
L8698/2012/1	13/07/2018	Licence amendment to allow an increase in dewatering water discharge to land (up to 1000 000 kL/yr) during C&M period and into the Suzie pit.
L8698/2012/1	1/05/2019	This amendment.

Location and receptors

Table 4 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 4: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Karalundi Aboriginal Education Community	Approximately 10 km to the north of the Project.
Killara Homestead	25 km to the south east of the Project

Table 5 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Surface water – Yalgar River non-perennial tributary / drainage lines	The Yalgar River is a 120 km long tributary of the Murchison River. It arises near the Great Northern Highway approximately 50km north of Meekatharra. Minor non-perennial tributaries of this river are located near to the project area. The closest of these being approximately 2 km east and south of the ridgeline surface discharge site.
Groundwater	A staged hydrological investigation and dewatering assessment of the Project area was undertaken by RPS Aquaterra during 2011. It was found that depth to groundwater in the Project area is relatively uniform and has been measured at approximately 5 - 12 meters below ground level (mbgl). Regional groundwater flow is expected to be to the west into the Yalgar River and Murchison River drainage systems.
Vegetation	The vegetation type found in the area of the dewatering discharge is described as Mulga (<i>Acacia aneura</i>) or <i>Acacia</i> semi-desert scrub, consisting of <i>Acacia</i> groves within a flat hardpan wash plain with low open scrub of <i>Eremophila</i> species (Mattiske Consulting, 2011). A flora and vegetation survey conducted in 2011 found; ten plant communities within the survey area which also occurs throughout the region, no threatened flora species, no plant species listed under the <i>Environmental Protection Biodiversity Conservation Act 1999</i> and no priority species (Mattiske Consulting, 2011).

Risk assessment

Tables 6 and 7 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 6: Risk assessment for proposed amendments during construction

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Cat 6 – Mine Dewatering	Construction of southern discharge pipeline and spigots	Dust associated with construction of pipeline and vehicle movements	Karalundi Aboriginal Education Community is ~10 km north of the Premises	Air: Particulate matter (dust)	Health and amenity impacts	Slight	Unlikely	Low A water cart will be utilized during construction activities to minimize dust emissions. Given the separation distance to the nearest sensitive receptor, the risk of impact by dust is considered to be low. No additional regulatory controls are required to mitigate this risk.
		Noise associated with construction of pipeline and vehicle movements	Karalundi Aboriginal Education Community is ~10 km north of the Premises	Air: Noise generated through the operation of equipment	Health and amenity impacts	Slight	Unlikely	Low Given the separation distance to the nearest sensitive receptor, the risk of impact by noise is considered to be low. <i>Environmental Protection (Noise) Regulations 1997</i> also apply. No additional regulatory controls are required to mitigate this risk.

Table 7: Risk assessment for proposed amendments during operation

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Cat 6 – Mine Dewatering	Extension of ridgeline discharge area to the south.	Discharge of wastewater from dewatering activities	Vegetation within the discharge zone	Direct discharge to land – surface runoff	Vegetation stress/ decline as a result of soil being waterlogged.	Moderate	Likely	High Vegetation mapping carried out by Mattiske (2011) indicates that the proposed southern discharge area comprises of open scrub of <i>Eremophila</i> , <i>Acacia</i> and <i>Ptilotus</i> species over sandy/loam to clay-loam flats. No priority or threatened flora have been found within the new southern discharge pipeline area. Both the northern and southern discharge areas are within the prescribed premises boundary. Impacts to vegetation from waterlogging of soils as a result of dewatering water being discharged to the ridgeline has occurred in

									<p>the past due to poor management of the discharge. A recent flora survey carried out by Terratree in November 2018 (Terratree, 2019) found that the vegetation condition in the 'Discharge community' (area influenced by the discharge to land) appeared more degraded compared to a reference community due to the inundation of the area, resulting in periodic waterlogged soils.</p> <p>Vegetation death has also been recorded in the past through site inspection visits by DWER in 2016.</p> <p>The evaporation rate in the area is high (low rainfall (<260 mm/yr) and high evaporation (>4,000 mm/yr)). However, there is the possibility that impacts from waterlogging could occur at the new southern ridgeline discharge pipeline if waterlogging is not managed appropriately during the winter months. The Licence Holder has stated within their environmental management plan (EMP, 2019) that the discharge to the southern pipeline will be moved between spigots to help reduce ponding of water. Discharge will also be moved between the northern and southern pipelines as required if visible ponding occurs. Daily inspections of the two pipeline locations will occur.</p> <p>The extension of the discharge 'front' from 1.5 to 1.75m may help to reduce the impacts of waterlogging by increasing the surface area to which the water is discharged.</p> <p>The consequence of waterlogging impacts has been determined to be 'moderate' as waterlogging of soils could occur resulting in mid-level onsite impacts (stressed vegetation and changes in species composition). The likelihood of impacts from waterlogging occurring is 'likely' based on historical evidence of waterlogging occurring at the northern discharge pipeline. Therefore the</p>
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								<p>Delegated officer has determined the risk of this event to be high.</p> <p>The Licence contains conditions that require the Licence Holder to take, on a bi-monthly basis, vegetation health photographs – this will be extended to include the new southern pipeline.</p> <p>The licence also has a condition requiring the Licence Holder to engage a botanist or equivalent professional to conduct an annual assessment of vegetation health in the impacted zone. This will be extended to include the new southern discharge pipeline.</p> <p>The Licence already contains a condition (2.2.3) requiring the Licence Holder to manage the discharge from the ridgeline spigots in a manner which minimises the likelihood of surface ponding. Evidence to date (DWER compliance inspection June 2016) suggests this has not been effective in mitigating the impact to vegetation.</p> <p>Additional conditions will be added to the licence to manage waterlogging. The applicant's controls will also be incorporated into the licence as per <i>Guidance Statement: Risk Assessments 2017</i>.</p>
					Vegetation stress/ decline as a result of sediment build-up smothering leaves and branches of low shrubs and grasses	Moderate	Possible	<p>Medium</p> <p>There has been impacts to vegetation on the ridgeline from a build-up of sediment in the past. This was discovered in 2016 during a DWER site inspection.</p> <p>Recent effluent monitoring quality data from the last annual period (Jan 18-Dec18) show that total suspended solids (TSS) levels remained low with the highest reading recorded of 12.0 mg/L in March 2018 with an overall 2018 monthly average of 8.6 mg/L. It is expected that TSS readings would show an upward trend should underground mining activities recommence (due to mobilization of</p>

									<p>finer underground). Historical discharge water quality during operations indicate TSS levels could occur between 10 – 380mg/L. The Licence Holder has committed to constructing a fourth water settling pond to increase water settling time prior to underground operations recommencing.</p> <p>The consequence of a buildup of sediment at the new southern pipeline discharge area has been determined to be Minor – with low level on site impacts. The likelihood of this event happening is unlikely during C&M but possible during operations. The impact of this risk event has therefore been determined to be Medium.</p> <p>The licence contain conditions requiring the Licence Holder to monitor TSS levels prior to entering the settling pond system and on leaving the system. This monitoring currently occurs on a quarterly basis.</p> <p>A condition will be added to the licence to increase the TSS monitoring frequency to monthly during operations to ensure TSS levels remain low and will allow the Licence Holder to determine when a fourth settlement pond may be required.</p>
			Soil within the discharge zone	Direct discharge to land	Build-up of salt and heavy metals within soils inhibiting vegetation growth and survival	Minor	Possible	Medium	<p>Monitoring results from the last annual period (2018) show that metal / metalloid concentrations in the dewatering discharge were below the ANZECC (2000) long-term irrigation guidelines. The only exception was selenium (<0.05 mg/L recorded compared to limit of 0.02 mg/L) but this was a result of the level of reporting limit utilised by the laboratory.</p> <p>Recent water quality data (2018) indicate TDS levels of 2650 mg/L (monthly average for 2018). The highest reading in 2018 was 3000 mg/L. It is expected that the discharge rate would be greater than the infiltration rate which would subject the</p>

									<p>effluent to evaporation and lead to the concentration of dissolved solids (i.e. salts) in the surface soils over time.</p> <p>The Licence Holder will monitor the ridgeline disposal area daily for impacts to vegetation. On a bi-monthly basis vegetation health photographs will be taken and included in their Annual Environmental Report.</p> <p>The licence also has a condition requiring the Licence Holder to engage a botanist or equivalent professional to conduct an annual assessment of vegetation health in the impacted zone. This information will be provided to DWER in the AER.</p> <p>Based on this information it expected that the consequence of this event will be 'minor' and the likelihood 'possible'. The impact of this risk event is therefore Medium.</p>
									<p>No increase in the approved discharge amount is proposed.</p> <p>There are no other licensed groundwater users nearby to the Premises.</p> <p>The discharge of dewatering effluent will occur over a wide area of ridgeline (1.75km) which will minimize the amount of water reaching the groundwater (5- 10 mbgl).</p> <p>The Premises is located within an area with a high evaporation rate and low rainfall resulting in minimal infiltration of effluent to the groundwater table.</p> <p>Dissolved and suspended solids will also be removed from the effluent as it infiltrates through the soil profile. Heavy metal concentrations meet ANZECC long term irrigation guidelines.</p>
			Groundwater	Infiltration through soil profile	Decline in groundwater quality	Slight	Unlikely	Low	

									Given these factors the consequence of this risk event is 'slight' and the likelihood of impact to the environment 'unlikely'. As a result the impact of this risk event on the environment is low.
		Rupture of dewatering water pipelines causing discharge to land	Native vegetation adjacent to pipeline	Direct discharge to land	Soil contamination inhibiting vegetation growth and survival	Slight	Unlikely	Low	<p>The quality of water that would be released in a once off event of pipeline rupture would have a minimal onsite impact (pipeline located on Premises only, no off-site impacts) due to the relatively low TDS level (fresh to brackish). Therefore the consequence of this risk event has been deemed to be <i>slight</i> (minimal onsite impact).</p> <p>The likelihood of a pipeline rupture is <i>unlikely</i> due to the Licence Holders commitment to do daily inspections of pipelines during use. The risk rating for this event is therefore low</p>

Decision

The key emission associated with the expansion of the ridgeline discharge pipeline is the direct discharge of dewatering effluent to land. The Delegated Officer considers the impact associated with this emission presents a **High** risk to the environment due to the risk of waterlogging of soils leading to vegetation stress or death, as has been observed at the northern discharge area already.

To manage this risk the Licence Holder's controls will be incorporated into the licence as conditions as per *Guidance Statement: Risk assessments (February 2017)*. These controls are outlined within the document *Andy Well Gold Project Dewatering Discharge Environmental Management Plan, Revision 1.3, 4 February 2019 (EMP, 2019)* which the Licence Holder was required to develop in accordance with improvement condition 4.1.1.

Condition 1.3.13 has been updated to include daily inspections of the ridgeline dewatering spigots for both north and south pipelines. This will ensure the discharge is monitored and any signs of waterlogging or vegetation stress can be identified.

A new condition has been added to the licence (1.3.13d) that outlines the management actions the Licence Holder is required to take in the event that waterlogging is identified during the daily ridgeline inspections. These management measures have been taken from the Licence Holder's dewatering effluent management plan (EMP, 2019).

Condition 1.3.15 has been updated to include the construction requirements of the new southern discharge pipeline on the ridgeline. The Licence Holder will be required to submit compliance documentation at the completion of construction of the pipeline.

Condition 2.2.3 has been updated to clearly stipulate that waterlogging of soils is to be prevented and that soils should be allowed to dry in between discharge to minimise impacts to vegetation.

Monitoring condition 3.2.1 has been updated to include monthly monitoring of suspended solids and TDS during operation as it is expected that TSS and TDS will increase when operations recommence. The Delegated Officer notes that the Licence Holder has committed to constructing a fourth settlement pond when operation commences.

Condition 3.2.1 has been updated to require biannual instead of annual monitoring of discharge water quality parameters so seasonal variations can be determined. Condition 3.2.1 has also been updated to include monitoring of the volumetric flow rate discharged to both the northern and southern pipeline. This will provide data to allow DWER to see how the discharge is being distributed between the two locations.

Condition 4.2.1 and 4.2.3 have been updated to include requirements for the Licence Holder to provide inspection logs for the ridgeline discharge spigots (both north and south pipelines). The Licence Holder will be required to submit inspection logs and actions annually in the AER and also on a quarterly basis to DWER. This will allow DWER to closely monitor the impact direct discharge of dewatering effluent is having on the ridgeline to ensure the Licence Holder is carrying out the management actions stipulated within conditions 1.3.13a. The Delegated Officer has deemed this condition necessary due to the past poor management of the ridgeline discharge pipeline resulting on impacts to vegetation.

Other amendments

The Delegated Officer has determined that a change in Licence Holder name from Doray Minerals Limited (Doray) (ACN: 138 978631) to **Andy Well Mining Pty Ltd (ACN: 158 108 895)** is appropriate. Doray have provided documentation confirming that Andy Well Mining Pty Ltd is the authorised holder of mining tenement M51/870 which forms the prescribed premises boundary for licence L8698/2012/1.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 10 April 2019. A response was provided on 25 April 2019 waiving the comment period and requesting the licence amendment be issued with no changes made.

Amendment

1. Definitions of the Licence is amended by the insertion of the bold text shown in underline below:

Waterlogging – means ‘visible pooling of water on soil surface’

TDS – means ‘Total Dissolved Solids’

TSS – means ‘Total Suspended Solids’

Biannual – means ‘two monitoring events a year, at least five months apart’

2. Condition 1.3.13 of the Licence is amended by the insertion of the bold text shown in underline below:

1.3.13 The Licensee shall:

- (a) undertake inspections as detailed in Table 1.3.4;
- (b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
- (c) maintain a record of all inspections undertaken.

Table 1.3.4 Inspection of infrastructure		
Scope of inspection	Type of inspection	Frequency of inspection
Tailings pipelines	Visual integrity	Daily
Return water pipelines	Visual integrity	Daily
<u>TSF Embankment freeboard</u>	Visual to confirm required freeboard capacity is available	Daily
Mine dewater pipelines	Visual integrity	Daily
Suzie Open Put freeboard	Visual to confirm required freeboard capacity is available	Daily
<u>Ridgeline dewatering spigot discharge points (north and south)</u>	<u>Visual to identify no waterlogging of soils</u>	<u>Daily when discharging to ridgeline</u>

3. The Licence is amended by the insertion of the bold text shown in underline below:

1.3.13d The Licensee shall carry out the following corrective actions within 4 hours, in the event that waterlogging of soils is identified through the visual inspections required by condition 1.3.13;

- (a) Discharge from current spigot to cease and wastewater to be directed towards another spigot where receiving soil is dry; or**
- (b) Redirect dewatering discharge for use in dust suppression; or**
- (c) Redirect dewatering discharge onto the TSF; or**
- (d) Redirect dewatering discharge to Suzie Open Pit.**

4. The Licence is amended by the insertion of the bold text shown in underline below in Table 1.3.6:

1.3.15 The Licensee shall ensure that each item of infrastructure or equipment specified in column 1 of Table 1.3.6 is designed and constructed in accordance with the requirements specified in column 2 of Table 1.3.6

Table 1.3.6: Infrastructure or equipment requirements (design and construction)	
Column 1	Column 2
Infrastructure	Requirements (design and construction)
TSF embankment raise to Cell A and Cell B	Raised by 2 metres only from RL1489m to RL1491m
	Minimum embankment freeboard designed to ensure a minimum total freeboard of 715 mm (300 mm operational freeboard + 200 mm beach freeboard + 215 mm ARI)
	Embankments lifted utilising either compacted tailings or compacted oxide mine waste sourced from pit development
	Corresponding central concrete decant tower and causeway are raised by 2 metres
	Clean rock fill placed around slotted precast concrete at the extended decant tower
	Perimeter embankment and decant accessway crests sheeted with a nominal 150 mm thickness of wearing course material
	Tailings spigots located at nominally 20 m centres on the upstream crest of the embankment
Dewatering water pipeline to Suzie Open Pit	Flow meter installed to measure volume of effluent pumped from settling pond 3 to Suzie Open Pit.
	Dewatering effluent pipeline constructed using poly pipe poly welded.
	Pontoon pump installed within settling pond 3.
<u>Supplementary southern ridgeline discharge pipeline and spigots</u>	<u>250m dewatering effluent pipeline constructed using poly pipe poly welded that will tee-off from the existing northern discharge pipeline.</u>
	<u>Four spigots branched off from the main pipeline via a T-piece branch where poly-piping with discharge holes drilled will be installed to diffuse the dewatering discharge.</u>
	<u>A branch handle to be installed to enable water flow to be switch on/switch off to the southern discharge area as required.</u>

5. The Licence is amended by the insertion of the bold text shown in underline and the deletion of the text shown in strikethrough below:

- 2.2.1 The Licensee shall ensure that where waste is emitted to land from the emission points in Table 2.2.1, and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of the Licence.

Table 2.2.1: Emission point to land		
Emission point reference and location on Map of emission points	Description	Source including abatement
Discharge ridgeline Spigots and Discharge Spigots (Contingency) <u>Supplementary southern discharge ridgeline spigots</u>	Dewatering discharge onto the ridgeline located approximately 1.2 km east of the mining area	Water from dewatering of the Mine Pit and underground operations via settlement ponds 1-3.
Suzie Open Pit	Dewatering discharge into Suzie Open Pit.	Water from dewatering of the mine via settlement ponds 1-3.

6. The Licence is amended by the insertion of the bold text shown in underline and the deletion of the text shown in strikethrough below.

2.2.3 The Licensee shall discharge mine dewatering effluent via the discharge spigots in a manner which:

- (a) **Evenly distributes the discharge over the ridgeline discharge area;**
- (b) minimizes erosion and scouring impacts; and
- (c) ~~reduces the likelihood of surface ponding.~~ **prevents the waterlogging of soils by rotating discharge between spigots on a regular basis to allow the soil to dry between disposal events.**

7. The Licence is amended by the insertion of the bold text shown in underline below:

3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of emissions to land				
Monitoring point reference	Parameter	Units	Frequency	Averaging period
Dewatering discharge at location before the settling ponds	Total Suspended Solids	mg/L	Quarterly ^{1,2} <u>during Care and Maintenance</u> (taken on the same day as sampling post settling ponds) <u>Monthly^{1,2} during Operations</u>	Spot sample
Dewatering discharge sampling point <u>at spigots</u> (post settling ponds)	Arsenic (As); Cadmium (Cd); Chromium (Cr); Cobalt (Co); Copper (Cu); Iron (Fe); Lead (Pb); Nickel (Ni); Selenium (Se); and Zinc (Zn)	mg/L	Annual <u>Biannual</u>	Spot sample
	Total Dissolved Solids	mg/L	Quarterly ¹ <u>during Care and Maintenance</u>	
	Total Suspended Solids		<u>Monthly¹ during Operations</u>	
	pH	pH units	Quarterly ¹	
<u>Dewatering discharge to northern ridgeline pipeline</u>	Volumetric flow rate	m ³ /day	Continuous	Monthly
<u>Dewatering discharge to southern ridgeline pipeline</u>				
Dewatering discharge point into Suzie Open Pit	Volumetric flow rate	mg/L	Quarterly ¹	Spot sample
	Total Dissolved Solids			
	pH	pH units	Quarterly ¹	

Note 1: Parameter can be analysed with field equipment.

Note 2: to be taken on the same day as sampling at the dewatering sampling point at spigots (post settling ponds)

8. The licence is amended by the deletion of the condition shown in strikethrough below:

~~4.1.1 The Licensee shall complete the improvements in Table 4.1.1 by the date of completion in Table 4.1.1~~

Table 4.1.1: Improvement Program		
Improvement-Reference	Improvement	Date of Completion
IR1	The Licensee shall submit a plan to the CEO detailing how the risk of soil-waterlogging will be mitigated at the ridgeline discharge site. The plan shall include but not be limited to; a) Management measures taken to prevent waterlogging of soils; b) Corrective actions to be taken if waterlogging of soils is identified; and c) Inspection frequency of ridgeline during discharge.	3 months after issue date of this amendment

9. The Licence is amended by the insertion of the bold text shown in underline below:

4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 90 calendar days after the end of the annual period. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form ¹
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 3.2.1	Monitoring of emissions to land	LR1
3.4.2	Vegetation survey comprising biannual photographs at each discharge spigot location	None specified
Table 3.2.1	Cumulative volume of mine dewater discharged <u>to each discharge location, northern and southern ridgeline spigots.</u> ridgeline spigots	
Table 3.2.1	Cumulative volume of mine dewater discharged to Suzie Open Pit	
-	An annual water balance for the premises.	
Table 3.3.1	Process monitoring	
Table 3.4.1	Monitoring of ambient groundwater quality	AGWQ1
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

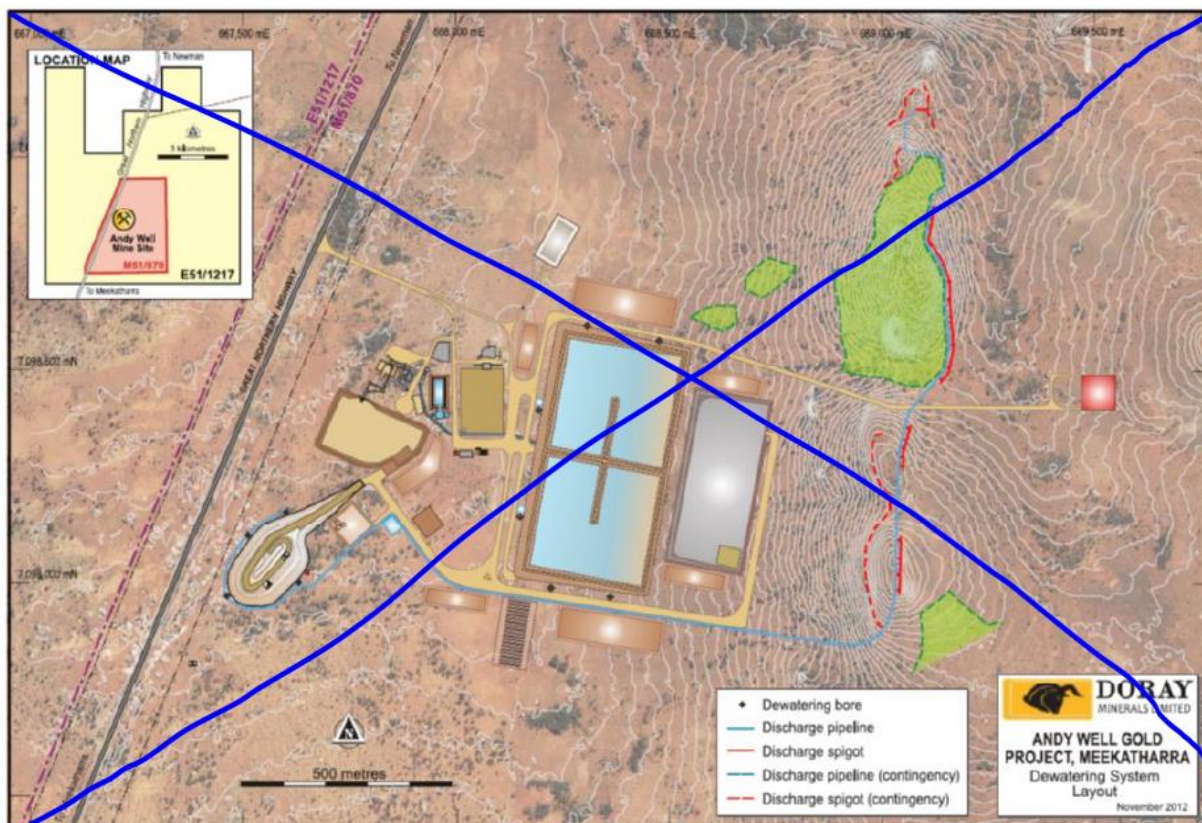
Note 1: Forms are in Schedule 2

10. Condition 4.2.3 of the Licence is amended by the insertion of the bold text shown in underline below:

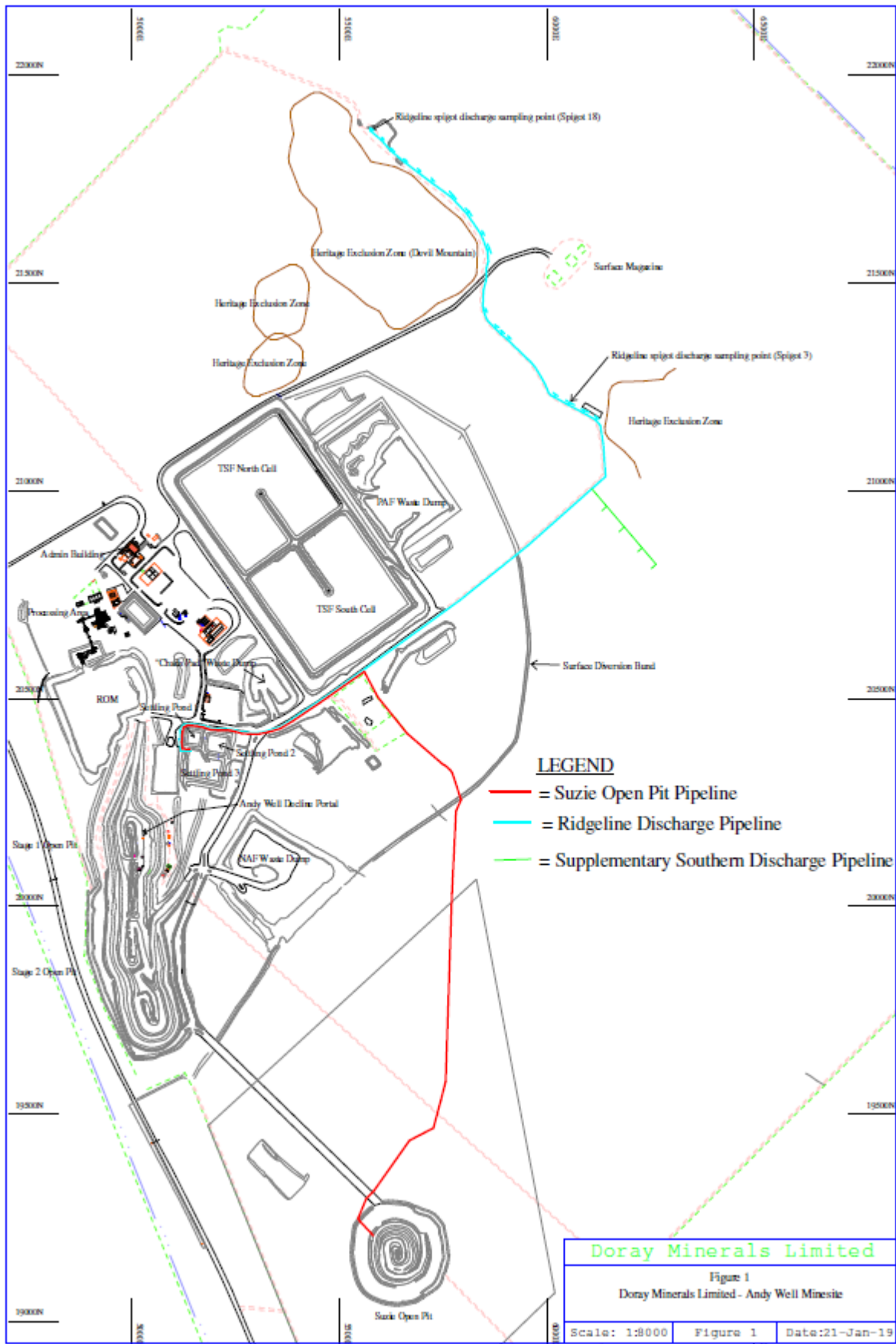
4.2.3 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements				
Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not applicable	Within 14 days of the CEO's request	As received by the Licensee from third parties
<u>1.3.13</u>	<u>Ridgeline pipeline and spigot inspection records, including information on any management actions taken as a result of the inspection</u>	<u>Quarterly</u>	<u>Within 14 days of the end of each quarter</u>	<u>None specified</u>

11. The Licence is amended by the deletion of the crossed out map below in Schedule 1 Map of emission points.



12. The Licence is amendment by the insertion of the map below in Schedule 1 Map of Emission Points.



Appendix 1: Key documents

	Document title	In text ref	Availability
1	Amendment Form – Andy Well Mining_L8698_2012 Amendments, 13 / 02/ 2019, Including attachments	Application	DWER records (A1764789)
2	Letter RE: Doray Minerals Limited/ Andy Well Mining Pty Ltd – L8698 Licence Amendment – Additional Information. Rod Jacobs, Doray Mineral Limited, 25 February 2019	Application	DWER records (DWERDT137616)
3	Andy Well Gold Project, Dewatering Discharge – Flora and Vegetation Survey, Prepared for Doray Minerals Limited, Ref: T18021, Terratree, February 2019	Terratree, 2019	DWER records (A1764787)
4	Andy Well Gold Project, Dewatering Discharge Environmental Management Plan, Rev 1.3, February 2019	EMP, Feb 2019	DWER records (A1764980)
5	ANZECC (2000) Australian and New Zealand Water Quality Guidelines for Fresh and Marine Water Quality	ANZECC 2000	Accessed at www.agriculture.gov.au/water/quality/guidelines/volume-1
6	Mattiske Consulting (2011) Flora and Vegetation of the Andy Well Survey Area, Mattiske Consulting Pty Ltd, June 2011.	Mattiske, 2011	Provided by Applicant
7	DWER, February 2017. <i>Guidance Statement: Risk Assessments</i> . Department of Water and Environment Regulation, Perth.	-	accessed at www.dwer.wa.gov.au