

# LAND COURT OF QUEENSLAND

CITATION: *BHP Coal Pty Ltd & Ors v Chief Executive, Department of Environment, Science and Innovation* [2024] QLC 7

PARTIES: **BHP Coal Pty Ltd, QCT Mining Pty. Ltd., Mitsubishi Development Pty Ltd, QCT Investment Pty. Ltd., BHP Queensland Coal Investments Pty Ltd, QCT Resources Pty Ltd, Umal Consolidated Pty Ltd**  
(applicants)

v

**Environment Council of Central Queensland**  
(non-active objector)

and

**Chief Executive, Department of Environment, Science and Innovation**  
(statutory party)

FILE NO: EPA398-23 (EPML00562013)

DIVISION: General Division

PROCEEDING: Hearing of application for mining lease and objection;  
Objection to application for environmental authority

DELIVERED ON: 16 April 2024

DELIVERED AT: Brisbane

HEARD ON: 19 March 2024. Further written submissions 22, 28 March 2024.

HEARD AT: Brisbane

A/PRESIDENT: PG Stilgoe OAM

ORDERS:

- 1. I recommend that the administering authority responsible for the *Environmental Protection Act 1994* approve the application to amend EPML00562013 on the conditions stated in the draft environmental authority contained in Appendix B of these reasons.**
- 2. I direct the Registrar to provide, as soon as practicable, a copy of these orders and the reasons**

**and access to the Land Court e-trial site to the administering authority responsible for the *Environmental Protection Act 1994*.**

CATCHWORDS: ENERGY AND RESOURCES – MINERALS – COURTS OR TRIBUNALS EXERCISING JURISDICTION IN MINING MATTERS – QUEENSLAND – LAND COURT – where there are objections to draft amended environmental authority – where the Court makes recommendations to the administering authority for the EP Act concerning the draft amended environmental authority – where the objections concern climate change and greenhouse gas emissions, impacts to endangered and threatened species, groundwater and surface water impacts, cumulative impacts, and the rehabilitation of the impacted area – whether the Court should recommend the application for an amended environmental authority be approved

ENERGY AND RESOURCES – MINERALS – COURTS OR TRIBUNALS EXERCISING JURISDICTION IN MINING MATTERS – QUEENSLAND – LAND COURT – where the statutory party propose additional conditions be imposed upon the draft amended environmental authority – where the additional conditions require the applicant to develop and publicly report upon a greenhouse gases emissions abatement plan – where the applicant has already committed to a reduction in greenhouse gas emissions – where the statutory party can only impose a condition where it is ‘desirable or necessary’—whether the proposed conditions are desirable or necessary

HUMAN RIGHTS – HUMAN RIGHTS LEGISLATION – Human Rights Act 2019 s 58 – where the Court is acting as a public entity in an administrative capacity – where public entities are required to properly consider human rights relevant to their decisions – where the Court has previously held that greenhouse gas emissions limit the right to life – where no evidence of the limitation upon the right to life was led by the parties – whether the Court can accept its previous findings on greenhouse gas emissions as sufficient to engage the right to life

*Acts Interpretation Act 1954* Sch 1

*Environmental Protection Act 1994* s 37, s 185, s 191, s 203, s 208

*Human Rights Act 2019* s 15, s 16, s 24, s 25, s 26, s 28, s 58

*State Development and Public Works Organisation Act 1971* s 26

*Castles v Secretary, Department of Justice (Vic)* (2010) 28 VR 141 ; [2010] VSC 310, applied

*Certain Children by their Litigation Guardian Sister Marie Brigid Arthur v Minister for Families and Children (No 1)* (2016) 51 VR 473 ; [2016] VSC 796, applied  
*Cement Australia (Exploration) Pty Ltd & Anor v East End Mine Action Group (No 4)* [2021] QLC 22, applied  
*Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7, cited  
*Innes v Electoral Commission of Queensland (No 2)* (2020) 5 QR 623 ; [2020] QSC 293, cited  
*Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors* [2020] QLC 33, applied  
*Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors (No 6)* [2022] QLC 21, distinguished

APPEARANCES: JM Horton KC with A Hellewell (instructed by Herbert Smith Freehills) for the applicants  
 K McAuliffe-Lake (instructed by Litigation Unit, Department of Environment, Science and Innovation) for the statutory party

- [1] In *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors (No 6)*<sup>1</sup> this Court accepted the existence of anthropogenic climate change.<sup>2</sup> That decision may have led to a public expectation that the Court would reject any application for the extraction of fossil fuel, particularly an application for a coal mine. As this decision shows, that is not necessarily the position.
- [2] BHP Coal Pty Ltd, QCT Mining Pty Ltd, Mitsubishi Development Pty Ltd, BHP Queensland Coal Investments Pty Ltd, QCT Resources Pty Ltd and Umal Consolidated Pty Ltd (collectively “BMA”) have been mining high quality metallurgical coal at Caval Ridge, 7 km south of Moranbah, in two pits, Horse Pit and Heyford Pit, since 2014.
- [3] BMA has applied to amend its existing Environmental Authority (EA) to extend the open cut mining activities at Horse Pit, establish an out of pit dump to the north-west of the project site, and to realign various infrastructure from the east to the west of Horse Pit. The statutory party prepared a draft amended EA that allowed the extension.

---

<sup>1</sup> [2022] QLC 21(‘*Waratah*’).

<sup>2</sup> The existence of anthropogenic climate change has been accepted in other Courts and jurisdictions, see the comments of Preston CJ in at *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7, [514] and [525].

- [4] Environment Council of Central Queensland (ECCQ) objected to the draft EA. Therefore, the statutory party referred BMA's application to the Court for an objections decision<sup>3</sup>.
- [5] ECCQ is a non-active objector. It has not provided any evidence to support its objection and it did not provide submissions to the Court.
- [6] The Court must consider each of the matters in s 191 of the *Environmental Protection Act 1994*<sup>4</sup>. BMA and the statutory party largely agree on many of the criteria in s 191 and have provided detailed submissions and evidence to support their positions. In the case of the non-contentious matters, I have read the evidence and the parties' submissions and I agree with their conclusions<sup>5</sup>. In this decision, I will turn my attention to the ECCQ objections, the implications of the *Human Rights Act 2019* and the contested draft greenhouse gas (GHG) emission conditions.

### **The ECCQ objections**

- [7] ECCQ's objections are contained in a letter dated 6 May 2023. They are in narrative form, but BMA has extracted the following topics from that document.

#### *The need for an Environmental Impact Statement*

- [8] A recurring theme in ECCQ's objections is that BMA has wrongly exploited a regulatory loophole which should have required a full Environmental Impact Statement (EIS).
- [9] Section 37 of the EP Act sets out when an EIS process applies. It does not apply to a coordinated project<sup>6</sup>. The original mining lease proposal was a coordinated project,<sup>7</sup> which meant that it was the subject of an EIS process under the *State Development and Public Works Organisation Act 1971*<sup>8</sup>.

---

<sup>3</sup> *Environmental Protection Act 1994* s 185 ('EP Act').

<sup>4</sup> Pursuant to s191(e) of the EP Act, I am required to consider any objection notice for the application.

<sup>5</sup> Appendix A is a summary of the non-contentious s 191 issues, the parties' submissions, and the evidence to support those submissions.

<sup>6</sup> EP Act s 37(1).

<sup>7</sup> BMA.0010.0001.

<sup>8</sup> Section 26(1)(a).

- [10] Katherine Taske is the Environmental Approvals Principal at BHP Coal Pty Ltd. In an affidavit provided to the Court, she sets out the protracted and detailed EIS process that has operated over the existing mine<sup>9</sup>.
- [11] Ms Taske also sets out the process BMA followed for this proposal. It was supported by nine technical reports. An information request from the statutory party generated a further three technical reports. The proposal was subject to public scrutiny. In response to informal requests, BMA provided additional modelling and information<sup>10</sup>.
- [12] I am satisfied that this proposal has been the subject of a rigorous assessment and that the public has been given an adequate opportunity to comment on it. If BMA exploited a regulatory loophole, and I am not satisfied that it did, it did not disadvantage the public and certainly did not reduce the regulatory requirements for BMA.

#### *GHG emissions*

- [13] ECCQ submits that BMA's voluntary declaration of the Scope 1 CH<sub>4</sub> (methane) emissions used a flawed estimate tool and that an updated estimation tool is likely to affect the economic viability of the mine.
- [14] Charles Klaassen has calculated the forecast fugitive emissions (methane and CO<sub>2</sub>) associated with the project based on:
- “Caval Ridge Mine's in-situ methane and carbon dioxide contents as estimated in accordance with measurement method 2 for this source as prescribed in the [*National Greenhouse and Energy Reporting Measurement Determination 2008*]”<sup>11</sup>.
- [15] Mr Klaassen rejects the ECCQ's submission that there will be a material difference between his calculation and any calculation based on an updated tool<sup>12</sup>. He repeated this view in cross examination<sup>13</sup>.

---

<sup>9</sup> Affidavit of Ms Katherine Taske (BMA.0001), para 21 to para 31.

<sup>10</sup> BMA0122; BMA0123.

<sup>11</sup> Affidavit of Mr Charles Klaassen (BMA.0134), para 28 (Note 2).

<sup>12</sup> Ibid para 30(g)-(h).

<sup>13</sup> T1-25, line 30 to line 47; T1-26, line 1 to line 22.

[16] ECCQ has provided no evidence to support its submission. I accept Mr Klaasson's view. I note that Mr Klaasson's estimate of the fugitive methane and CO<sub>2</sub> emissions is less than 3% of the total emissions from the proposal<sup>14</sup>.

*Climate change consequences*

[17] ECCQ submits that, as a general principle, it is no longer appropriate to approve new or expanded coal proposals as they are destructive processes that:

- Produce long term and irreversible environmental and social harms through increasing global temperatures and climate change;
- Are contrary to meeting Australia's emission targets and Queensland's emission targets;
- Will put the regional and global community at further risk of extreme weather by increasing the intensity and frequency of storms, floods, droughts, bushfires, melting of glaciers and sea ice, sea inundation, coral bleaching, and subsequent loss of the Great Barrier Reef; and
- Are likely to result in irreparable damage to our local landscape and wildlife habitats, and our native and iconic flora and fauna of both State and national significance.

[18] Although ECCQ's submissions are somewhat prone to hyperbole, they hold an element of truth. Any extraction, and consumption, of fossil fuel will add to the climate change risks. But as President Kingham noted in *Waratah*:

“... the Court must consider this application on its merits. It is tasked with considering whether this particular Project stacks up economically, environmentally, and socially. In making its recommendations, the Court is acting in an administrative capacity. Unless constrained by the relevant Acts from doing so, it must make its decision with regard to the policy framework that applies to the ultimate decision maker.”<sup>15</sup>

And:

“A project can be consistent and ‘meet’ the requirements of Australia's NDCs and the obligations of the Paris agreement while being contrary to the intent of both. From the perspective of climate change and reduction of global impacts, it is the intent of the Paris Agreement that matters.”<sup>16</sup>

<sup>14</sup> Affidavit of Mr Charles Klaassen (BMA.0134), para 23.

<sup>15</sup> *Waratah*, [691].

<sup>16</sup> *Ibid.* [573].

[19] It is also important to remember that, while the climate change effects on the Torres Strait and coastal Queensland was a factor in President Kingham's decision in *Waratah*, it was not the only factor. President Kingham also referred to the loss of the Bimblebox Refuge<sup>17</sup>, the uncertain social benefits of the mine<sup>18</sup>, and the uncertain economic benefits from the mine<sup>19</sup>.

[20] In the same way, climate change is a factor in my decision, but it is not the only factor.

[21] The average annual CO<sub>2</sub> emissions for the proposal, as a percentage of the current output for Queensland is:<sup>20</sup>

Caval Ridge HPE Project		UOM	Scope 1		Scope 2	Scope 3				All Qld emission sources
			Fuel use	Fugitive	Electricity	Fuel use	Electricity	Rail & port	FIFO fuel	
Av. Annual emissions	Within Qld	Mt CO <sub>2</sub> -e	0.119	0.004	0.035	0.029	0.007	0.006	0.002	0.202
		% of Qld	0.085%	0.003%	0.025%	0.021%	0.005%	0.004%	0.001%	0.145%

[22] BMA has calculated the projected annual GHG emissions against the future carbon budget target within the Queensland Climate Action Plan and the Queensland Energy and Jobs Plan as follows:<sup>21</sup>

Caval Ridge Horse Pit Extension Project in relation to Queensland's emissions reduction targets	UOM	Base year	Latest year	Target years		
		2005	2021	2030	2035	2050
Target reduction on base year net emissions	Mt CO <sub>2</sub> -e	196		30%	75%	100%
Emissions budget (from base year)	Mt CO <sub>2</sub> -e	196	3,012	4,331	4,753	5,096
Actual Qld emissions (from base year)	Mt CO <sub>2</sub> -e	196	2,949			

<sup>17</sup> Ibid [19].

<sup>18</sup> Ibid [37].

<sup>19</sup> Ibid [38].

<sup>20</sup> BMA.0153.002.

<sup>21</sup> BMA.0153.002.

Remaining emissions budget (from latest year)	Mt CO2-e		63	1,382	1,804	2,147
HPE project emissions in Qld (from latest year)	Mt CO2-e			0.07	1.12	6.13
HPE project emissions as proportion of Qld budget	%			0.01%	0.06%	0.29%

[23] BMA has also calculated the projected annual GHG emissions as a percentage of global emissions as follows:<sup>22</sup>

<b>Annual GHG emissions</b>	<b>World</b>	<b>Project scope 1</b>	<b>Project scope 2</b>	<b>Project scope 3</b>	<b>Project total</b>
Mt CO2-e	49,758	0.12	0.03	7.59	7.75
% of global	100%	0.0002%	0.0001%	0.0153%	0.0156%

[24] BMA submits these tables show the projected emissions are a very small percentage of Queensland's emission sources, a very small percentage of Queensland's emission budget targets for 2035 and 2050, and an insignificant percentage of total global emissions.

[25] All of that may be true, but that submission alone is not enough to persuade me that climate change is not a determinative factor in my deliberations.

[26] BMA distinguishes this project from the Waratah proposal in significant ways:

- It points out that this project is a metallurgical coal mine. Metallurgical coal is an integral component in the production of steel. BMA submits that Australia and Queensland will not meet its net zero targets without investment in renewable technologies, all of which require steel for their manufacturing/construction<sup>23</sup>. BMA is one of the highest quality, lowest carbon emission coal producers globally.<sup>24</sup> In contrast, Waratah was a thermal coal mine, which is used to generate electricity.

<sup>22</sup> Affidavit of Mr Charles Klaassen (BMA.0134), para 14.

<sup>23</sup> Affidavit of Mr Brad Prytherch (BMA.0129), para 60 and para 61.

<sup>24</sup> BMA.0136.0013.; BMA.0136.0046.



- BMA, through the BHP Group is taking steps to reduce its operational GHG emissions. Its short-term goal was to maintain its total operational GHG emissions at or below adjusted FY2017 levels by FY2022. BHP's annual report for 2022 states that this target was exceeded with a 15% decrease in BHP's total operational GHG emissions across its operations around the world<sup>25</sup>.
- BHP's medium-term operational GHG emissions reduction target is to reduce its total operational GHG emissions by at least 30% from adjusted FY2020 levels by FY2030. BHP says it is on track to achieve this target with an 11% decrease in its FY2023 total annual operational GHG emissions across its worldwide operations from FY2022 levels and a 32% reduction from adjusted FY2020 levels<sup>26</sup>.
- BHP's long-term operational GHG emissions reduction goal is to achieve net zero total operational GHG emissions by 2050.
- This is not a proposal for a new mine, but an extension of an existing mine.

[27] The statutory party acknowledges the importance of the project coal. It is a “currently irreplaceable product in the form of high-quality coking coal”<sup>27</sup>.

#### *Impacts to endangered and threatened species*

[28] ECCQ submits that the proposal is likely to have a significant impact on listed threatened species, including, but not limited to, the:

- Ornamental Snake (*Denisonia maculate*);
- King Bluegrass (*Dichanthium queenslandicum*);
- Squatter Pigeon (*Geophaps scripta scripta*); and
- Poplar (*bimble*) Box Grassy Woodland on Alluvial Plains.

[29] BMA concedes that the proposal will have an environmental impact because of the need for vegetation clearing, topsoil stripping, and the inherent loss of habitat<sup>28</sup>. It concedes that there will be a 167.84 ha loss of habitat for the Ornamental Snake, a

<sup>25</sup> BMA.0136.0005.

<sup>26</sup> Affidavit of Mr Charles Klaassen (BMA.0134), para 12.

<sup>27</sup> Affidavit of Dr Juliana McCosker, affirmed 9 November 2023 (DES.0001), para 30.

<sup>28</sup> BMA.0117.0054.

23.4 ha loss of habitat for the King Bluegrass and “of concern” regulated vegetation, and an 84.19 ha loss of habitat for connectivity values.<sup>29</sup>

[30] BMA submits that this loss of habitat will be adequately managed to create a beneficial conservation outcome in four ways. Firstly, the amended EA has specific conditions requiring progressive rehabilitation. Secondly, the rehabilitation of the void must result in a landform that is safe, stable, non-polluting and able to achieve a post mining land use on the low walls.

[31] Neither of these proposals is particularly impressive or noteworthy. They are the type of measures I would expect from a responsible miner.

[32] Thirdly, BMA has reduced the size of the out of pit overburden dump.

[33] The fourth factor is that the draft amended EA requires the following environmental offsets:

- 167.84ha of ornamental snake habitat;
- 84.19ha of connectivity areas;
- 12.3ha of king blue grass habitat; and
- 12.3ha of ‘of concern’ regulated vegetation (Regional Ecosystem 11.8.11).

[34] Again, the requirement of environmental offsets is neither impressive nor exceptional. What does set the BMA proposal apart from other proposals is that it has taken active steps to ensure sufficient and appropriate offsets exist through an arrangement with Inderi Station and Croyden Station<sup>30</sup>.

#### *Groundwater and surface water impacts*

[35] ECCQ submits that the proposal will have a significant impact to Horse Creek through a reduction in its catchment area. It submits that this has the potential to affect the Groundwater Dependent Ecosystems and the remnant riparian vegetation. It is not convinced that BMA has conducted sufficient or appropriate testing.

---

<sup>29</sup> Ibid.

<sup>30</sup> Affidavit of Ms Katherine Taske (BMA.0001), para 103.

[36] BMA commissioned a number of reports to consider the proposal's effect on both groundwater and surface water:

- A groundwater assessment report as required by the statutory party. That assessment was subject to peer review by Dr Noel Merrick. He found that the assessment was best practice, and the modelling methodology was “state-of-[the]-art”<sup>31</sup>. He found that the model was fit for purpose, had been conducted to a very high standard and that a rigorous uncertainty analysis offset much of the uncertainty normally inherent in a groundwater model.<sup>32</sup>
- A groundwater contaminant trigger levels report as required by the statutory party<sup>33</sup>. As a result of that report, the statutory party amended the draft EA to include additional monitoring groundwater bores, include trigger levels for new and existing bores, and a requirement to update trigger levels when a specified number of samples became available<sup>34</sup>.
- A two-part assessment of groundwater dependent ecosystems. Those reports concluded that the likely potential impact was small and, therefore, the impact of the proposal was not considered significant<sup>35</sup>. BMA will continue to implement mitigation measures and will develop a groundwater dependent ecosystem monitoring and management plan<sup>36</sup>.
- A full assessment of the surface water impacts for the proposal commissioned by BMA acknowledged that there will be a reduction of the catchment area<sup>37</sup>. The overall reduction of the catchment is around 0.2% which represents a very small overall reduction in the catchment. The report concluded that there are only very minor changes to the occurrences of higher or medium flows, and almost no change to the spell durations when comparing existing catchment to the catchment area reduced by the proposal. It was considered unlikely that the proposal would cause changes to the flow regime that would impact either downstream users or the environment<sup>38</sup>.

<sup>31</sup> BMA.0120.0097; BMA.0120.0099.

<sup>32</sup> Affidavit of Ms Katherine Taske (BMA.0001), para 105 and para 106; BMA.0116.

<sup>33</sup> Affidavit of Ms Katherine Taske (BMA.0001), para 108.

<sup>34</sup> Ibid para 110.

<sup>35</sup> Ibid para 117.

<sup>36</sup> Ibid para 118 to para 119.

<sup>37</sup> Ibid para 123.

<sup>38</sup> Ibid para 124.

### *Rehabilitation and the final void*

- [37] ECCQ submits that the post rehabilitation void will be “massive”<sup>39</sup> and that the water within the void will have toxic salinity within a decade. It is concerned that there may not be an entity with the financial capacity to address any post rehabilitation issues.
- [38] The current EA permits a final void of 545 ha. The final void in the proposal is designed to be 545 ha<sup>40</sup>. BMA states that the void will comply with design criteria and the current EA. A void of 545 ha might be massive, but it is within the contemplation of the current EA and there is no greater area contemplated or sanctioned in the proposal.
- [39] BMA states that the Caval Ridge Progressive Rehabilitation and Closure Plan (PRCP) includes a program for assessing both the background and receiving environments for salinity, residual void water quality predictive modelling and water balance, and groundwater predictive modelling to assess the migration and heights of groundwater and void lake water<sup>41</sup>. It submits that this program will, to the greatest extent possible, mitigate any toxic effect on the void water.
- [40] BMA understands ECCQ’s concerns about other miners walking away from their commitments but points out that it has already committed to a regime of progressive rehabilitation<sup>42</sup> and that the draft EA includes an amended requirement to progressively rehabilitate which identifies minimum areas of progressive rehabilitation for each financial year.

### *Cumulative impacts*

- [41] ECCQ’s objection stated, simply, that it was concerned with the cumulative impacts of all of the above issues from the many mines in the Bowen Basin.
- [42] Ms Taske considered the cumulative impacts on groundwater drawdown on third party bores. In her affidavit she stated that the proposal was assessed in accordance with Independent Expert Scientific Committee requirements, that modelling was

---

<sup>39</sup> BMA.0156.0008.

<sup>40</sup> Affidavit of Ms Katherine Taske (BMA.0001), para 145.

<sup>41</sup> Ibid para 136.

<sup>42</sup> Ibid para 138.

undertaken, and the results of that work indicated that the cumulative impacts are not related to the proposal but come from other existing and approved mines in the area.<sup>43</sup>

- [43] Dr Juliana McCosker considered the possibility of cumulative impacts in the wider context. She agreed with Ms Taske that the proposal did not impact on the ground water drawdown<sup>44</sup>. Dr McCosker considered the cumulative impacts on the threatened species and determined that the environmental authority conditions that will successfully mitigate and manage the impacts for the duration of the project<sup>45</sup>.

## Human Rights

- [44] In making an objections decision, the Court is a public entity acting in an administrative capacity and is therefore subject to s 58(1) of the *Human Rights Act*<sup>46</sup>. The Court has articulated a five-step process in applying human rights<sup>47</sup> and I adopt that approach here.
- [45] BMA and the statutory party agree that the proposal engages both property rights<sup>48</sup> and privacy rights<sup>49</sup> in that it may limit the rights of people living, or conducting businesses, in nearby Moranbah.
- [46] The statutory party submits that the proposal may affect the cultural heritage rights of Aboriginal and Torres Strait Islander Peoples<sup>50</sup> in that the proposal may impact on sites and artifacts which may have cultural significance for First Nations Peoples.
- [47] The statutory party also submits that the GHG emissions and climate change impacts may also engage the right to life<sup>51</sup>, protection of children<sup>52</sup> and recognition and equality before the law<sup>53</sup>.

---

<sup>43</sup> Ibid para 131.

<sup>44</sup> Affidavit of Dr Juliana McCosker, affirmed 9 November 2023 (DES.0001), para 43.

<sup>45</sup> Ibid para 44 to para 45.

<sup>46</sup> *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors* [2020] QLC 33, [92].

<sup>47</sup> *Cement Australia (Exploration) Pty Ltd & Anor v East End Mine Action Group (No 4)* [2021] QLC 22, [55]-[57].

<sup>48</sup> *Human Rights Act 2019* s 24.

<sup>49</sup> Ibid s 25(a).

<sup>50</sup> Ibid s 28.

<sup>51</sup> Ibid s 16.

<sup>52</sup> Ibid s 26(2).

<sup>53</sup> Ibid s 15.

- [48] A person must not be arbitrarily deprived of their property<sup>54</sup>. “Property” is defined as any legal or equitable estate or interest (whether present or future, vested or contingent, or tangible or intangible) in real or personal property of any description (including money), and includes things in action<sup>55</sup>.
- [49] BMA owns the land underlying the proposal. It submits that there is no evidence that any other person’s property rights will be adversely affected by the proposal or that any person’s use or enjoyment of their property will be restricted.
- [50] A person has the right not to have their home unlawfully or arbitrarily interfered with<sup>56</sup>. The possibility of dust, noise, and vibration at residences in and around Moranbah arguably engages this human right.
- [51] The statutory party suggests that the air quality, noise, vibration, and overpressure impacts from the proposal may impact the property rights and privacy rights of Moranbah residents.
- [52] The closest receptor for the current mining activity is 881 Long Pocket Road, 2.2km away from the mining lease and about halfway between the mining activity and Moranbah. That property is already monitored for noise and vibration concerns<sup>57</sup>. There is no evidence that the owner of that property has ever complained about noise, dust or vibration.
- [53] The owner of 881 Long Pocket Road did not lodge an objection. No resident of Moranbah has lodged an objection.
- [54] Brad Prytherch is the general manager at Caval Ridge. He gave evidence that BMA has a very detailed dust control system, a trigger action response plan and that BMA takes its obligations under the current conditions very seriously<sup>58</sup>. Although the proposal will take mining a little further to the north, Mr Prytherch did not think that the proposal would take the mining activity closer to Moranbah<sup>59</sup>.
- [55] I am satisfied that property rights and privacy rights will not be engaged.

---

<sup>54</sup> Ibid 24(2).

<sup>55</sup> *Acts Interpretation Act 1954* (Qld) Sch 1.

<sup>56</sup> *Human Rights Act 2019* s 25(a).

<sup>57</sup> BMA.0114.0018.

<sup>58</sup> T1-32, line 30 to line 36.

<sup>59</sup> T1-33, line 5 to line 12.

- [56] If I am wrong and those rights are engaged, I am satisfied that any limitation is procedurally appropriate and proportional: the EP Act requires a consideration of the public interest, the EA conditions are a balance between the impacts of the proposal and the rights of others.
- [57] BMA makes no comment about the right to life, protection of children and recognition and equality before the law. The statutory party reserved its position on these human rights pending the evidence adduced at the hearing but thought it unlikely that these rights would be engaged.
- [58] There was no evidence at the hearing that addressed, or raised, these rights.
- [59] It is unlawful for a public entity, when making a decision, to fail to give proper consideration to a human right relevant to a decision<sup>60</sup>.
- [60] Ryan J, in *Innes v Electoral Commission of Queensland (No 2)*, said:  
 “it is not necessary for an identifiable individual to be affected in order for a human right to be engaged so as to trigger the obligations imposed on public entities by s 58(1). A *potential* effect on the rights of a class of persons is sufficient.”<sup>61</sup>
- [61] The obligation for a public entity to properly consider rights stems beyond the common law requirement of those involved in public administration to take into account relevant considerations<sup>62</sup>. Rather, the consideration should involve the Court seriously turning its mind to the possible impact of the decision on human rights and the implications thereof for the affected person, as well as the countervailing interests or obligations identified<sup>63</sup>.
- [62] In *Waratah*, President Kingham identified that:  
 “...the limitation to the right to life would arise from the combustion emissions from the Project coal. The continued accretion of GHGs in the atmosphere will, among other things, cause increasingly adverse impacts to the environment, including people in Queensland. These include increased fatalities in Queensland due to bushfires and bushfire smoke, heat waves, mosquito borne diseases, floods and cyclones.”<sup>64</sup>

<sup>60</sup> *Human Rights Act 2019* s 58(1)(b).

<sup>61</sup> (2020) 5 QR 623, 683 [291].

<sup>62</sup> *Certain Children by their Litigation Guardian Sister Marie Brigid Arthur v Minister for Families and Children (No 1)* (2016) 51 VR 473, 507 [183]-[184] citing *Bare v Independent Broad-based Anti-Corruption Commission* (2015) 48 VR 129, 218.

<sup>63</sup> *Castles v Secretary, Department of Justice (Vic)* (2010) 28 VR 141, 184.

<sup>64</sup> *Waratah* [1488].

And:

“The evidence presents a clear and pressing threat to the right to life that is now experienced by people in Queensland and will only be exacerbated by increasing emissions, to which the Project would make a material contribution.”<sup>65</sup>

- [63] It does not matter that I was not presented with the same evidence about climate change effects as was provided in *Waratah*. The evidence in that case was accepted by all relevant experts and President Kingham’s conclusions have not been the subject of any successful challenge. This Court has identified a potential threat to human rights in any activity that involves increasing GHG emissions. This proposal will increase GHG emissions, albeit to a very small degree. The right to life, protection of children and recognition and equality before the law are engaged and the evidence suggests that they will be limited by the proposal. I must, therefore, balance the importance of the purpose of the limitation against the importance of the proposal.
- [64] BMA submits that there will be substantial economic benefits to the local communities and the Queensland economy. It has referred me to the BHP and BMA’s Community Contribution Report for FY 2022<sup>66</sup> as evidence of BMA’s significant financial contribution to Commonwealth revenue through taxes<sup>67</sup>, to the Queensland government through royalties<sup>68</sup> and payroll tax,<sup>69</sup> and to regional Councils through rates<sup>70</sup>. The report details BMA’s supplier spending<sup>71</sup>, wages bill for Queensland employees<sup>72</sup> and its community engagement programs.<sup>73</sup> Not all of these benefits can be attributed to the proposal, but BMA points out that the proposal will extend the economic benefits in the region by about 20 years.
- [65] BMA has undertaken a cultural heritage study<sup>74</sup> which identified matters of cultural significance, possible threats, and mitigation measures. It has a cultural heritage management plan in place. It is already consulting with the traditional owners, storing artifacts of significance, and taking care to avoid, where possible, areas of cultural

---

<sup>65</sup> Ibid [1505].  
<sup>66</sup> BMA.0132.0006.  
<sup>67</sup> \$1.1billion.  
<sup>68</sup> \$3.1 billion.  
<sup>69</sup> \$103 million.  
<sup>70</sup> \$38 million.  
<sup>71</sup> \$6.8 billion.  
<sup>72</sup> \$1.534 billion.  
<sup>73</sup> \$13.7 million.  
<sup>74</sup> BMA.0031.



importance. I am satisfied that any limitation on cultural heritage rights is appropriate and proportional.

[66] I have already identified that there will be a need for metallurgical coal for some years to come and that the proposal is a source of high-quality metallurgical coal (unlike Waratah, which sought to mine thermal coal)<sup>75</sup>. Unlike Waratah, the economic benefits are identified, and BMA does not propose to impinge on an area of ecological significance.

[67] As before, I am satisfied that any limitation on human rights is procedurally appropriate and proportional: the EP Act requires a consideration of the public interest, the EA conditions are a balance between the impacts of the proposal and the rights of others.

### **The proposed GHG conditions**

[68] The statutory party may only impose a condition on a draft EA if it considers the condition is necessary or desirable<sup>76</sup>.

[69] If a draft EA condition requires a statement of compliance, the condition must also state the compliance criteria<sup>77</sup> and the supporting information that must be provided to demonstrate compliance<sup>78</sup>.

[70] The statutory party proposes three conditions that address GHG. Condition B22 requires BMA to develop a GHG abatement plan prior to the commencement of activities. The plan must include:

- An inventory of projected annual Scope 1 and Scope 2 emissions;
- The intended objectives, measures, and performance standards to avoid and mitigate GHG emissions to ensure consistency with the latest version of the Queensland Climate Action Plan and relevant Queensland target requirements;
- A process for regularly reviewing, assessing, and implementing new technologies to identify opportunities to further reduce GHG emissions and energy use and progressively improve energy efficiency; and

---

<sup>75</sup> *Waratah* [21], [650].

<sup>76</sup> EP Act s 203(1).

<sup>77</sup> EP Act s 208(2)(a).

<sup>78</sup> EP Act s 208(2)(c).

- A program for annual monitoring, auditing, and reporting on GHG emissions and the success of measures to avoid and mitigate GHG emissions.

- [71] Condition B23 requires that the results of the reports required in B22 must be made publicly available on the statutory party's website (the DESI website) and any other website it requests.
- [72] Condition B24 requires BMA to review the effectiveness of the GHG abatement plan every two years and to update it as required.
- [73] Condition B25 requires BMA to comply with its own GHG abatement plan.
- [74] These conditions were not included in the original draft EA because the statutory party was sure that BMA would take the necessary action to reduce operational GHG emissions<sup>79</sup> and that there was sufficient commitment to the reduction of GHG so that a condition was not appropriate<sup>80</sup>.
- [75] It cannot be said that these conditions are necessary. They do not impose any limits on GHG emissions. They do not regulate the mitigation of GHG emissions. There is no benchmark against which the statutory party can assess success or failure.
- [76] The question, then, is whether these conditions are desirable. "Desirable" is not defined in the EP Act and it has no technical meaning. One of its definitions is "advisable"<sup>81</sup>. Another is "pleasing, excellent or fine"<sup>82</sup>.
- [77] Given my comments about whether these conditions are necessary, I am not persuaded that they satisfy the less onerous test of "advisable". The conditions advise no one and, in their present form, give very little guidance to either the statutory party or BMA.
- [78] Whether a set of conditions is "pleasing, excellent or fine" depends on context and from which perspective the question is viewed. Dr McCosker's justification for a "desirable" set of conditions is twofold. Firstly, that it is a way of demonstrating and improving public confidence in the fact that BMA is going to reduce its emissions<sup>83</sup>.

---

<sup>79</sup> T1-35, line 29 to line 31.

<sup>80</sup> T1-35, line 33 to line 35; T1-36, line 10 to line 12.

<sup>81</sup> *Macquarie Dictionary* (3<sup>rd</sup> ed, 1997) 'desirable' (def 3).

<sup>82</sup> *Ibid* (def 1).

<sup>83</sup> T1-36, line 6 to line 8, line 34 to line 37.

Secondly, because it will be difficult for the public to find the reports generated by these conditions on the DESI website, BMA should bear the responsibility of publishing those reports<sup>84</sup>.

[79] In short, it seems to me that inclusion of these GHG conditions is a form of window dressing – the statutory party can say that it considered the impact of GHG emissions, that it has ensured BMA’s commitment to a reduction of GHG emissions, and it has enabled the data surrounding BMA’s commitment to be publicly available.

[80] In fact, the conditions do nothing to ensure the reduction of GHG emissions. BMA points out that it has already made that commitment publicly<sup>85</sup> and that its maximum emissions are already proscribed by a limit on the annual extraction of run of mine coal thorough Condition A3. Because there is no measurable benchmark for compliance, I suspect that the conditions give very little comfort to members of the public.

[81] In its Climate Transition Action Plan<sup>86</sup> BMA’s commitment went far beyond what is required in these proposed conditions. It has already committed to a range of measures aimed at transparency and climate policy engagement. It says<sup>87</sup>:

- Feedback and commentary related to climate change are increasingly a part of all of [its] routine investor engagements, including results roadshows with the CEO and CFO, and the Chair’s investor engagement meetings. A summary of this feedback is provided to the Board.
- [It has] been reporting in line with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations since the recommendations were released in 2017. For example, the BHP Climate Change Report 2020 aligns with the TCFD’s themes of Governance, Strategy, Risk Management, and Metrics and Targets. [The] Vice President of Sustainability and Climate Change, Dr Fiona Wild, has been a member of the Task Force since its inception in 2015.

---

<sup>84</sup> T1-38, line 6 to line 11.

<sup>85</sup> Affidavit of Mr Charles Klaassen (BMA.0134), para 12.

<sup>86</sup> BMA.0151.

<sup>87</sup> BMA.0151.0022.

- [82] The statutory party may consider the conditions desirable to meet the expectations of the public in the post *Waratah* world, but they are not desirable in a general sense because they do not enhance the regulatory framework for the proposal.

## Conclusion

- [83] There is no doubt that this decision will dismay many who are vitally concerned with GHG emissions and global warming.
- [84] But, as I have already identified, the Court's task is to balance competing needs and considerations. This proposal is an extension of an existing mine. The proponents are experienced mine operators who have publicly committed to a reduction in GHG emissions. The coal that will be mined in this proposal is high quality metallurgical coal, which is still required for the production of steel, a vital component in any project to transition to renewal energy. The damage to ecological sensitive areas is limited and BMA has secured offsets. The various studies show minimal impact on groundwater and surface water.
- [85] In this particular case, the balance of competing needs and considerations favours a recommendation that the draft EA be granted.

## Orders

1. **I recommend that the administering authority responsible for the Environmental Protection Act 1994 approve the application to amend EPML00562013 on the conditions stated in the draft environmental authority contained in Appendix B of these reasons.**
2. **I direct the Registrar to provide, as soon as practicable, a copy of these orders and the reasons and access to the Land Court e-trial site to the administering authority responsible for the *Environmental Protection Act 1994*.**

## APPENDIX A

EP Acts 191 Criteria	
<i>Section 191(a) – the application</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [32] to [35].
<i>Section 191(b) - any response given for an information request</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [36] to [43].
<i>Section 191(c) - any standard conditions for the relevant activity or authority</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [44] to [46].
<i>Section 191(d) - any draft environmental authority or draft PRCP schedule for the application</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [47] to [48]. [BMA.0131] – Draft Environmental Authority. [DES.0001] – Affidavit of Dr Juliana McCosker, [12] to [14] & Exhibit JCM-08. [DES.0002] - Affidavit of Dr Juliana McCosker, [4] to [6] & Exhibit JCM-09.
<i>Section 191(f) - any relevant regulatory requirement</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [52] to [53]. [BMA.0110] Environmental Authority Amendment Supporting Information Document, Section 2 – Regulatory Considerations.
<i>Section 191 (h) - the status of any application under the Mineral Resources Act for each relevant mining tenure</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [81] to [82].
The Standard Criteria (s 191(g))	
<i>Standard Criteria (a) - the principles of environmental policy as set out in the Intergovernmental Agreement on the Environment, including:</i>	<p><u>Precautionary Principle</u></p> <p>[BMA.0001] – Affidavit of Ms Katherine Taske, [56]. [DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 91).</p> <p><u>Intergenerational Equity</u></p> <p>[BMA.0001] – Affidavit of Ms Katherine Taske, [57] to [58]. [DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 91). [BMA.0120] – Request for information response.</p> <p><u>Conservation of biological diversity and ecological integrity</u></p>

<ul style="list-style-type: none"> <li>- <i>The precautionary principle;</i></li> <li>- <i>Intergenerational equity; and</i></li> <li>- <i>conservation of biological diversity and ecological integrity</i></li> </ul>	<p>[BMA.0001] – Affidavit of Ms Katherine Taske, [59] to [60].</p> <p>[BMA0129] – Affidavit of Mr Brad Prytherch [32] – [44].</p> <p>[DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (pages 91 to 92).</p>
<p><i>Standard Criteria (b) - Government plans, standards, agreements and requirements about environmental protection and ecologically sustainable development</i></p>	<p>[BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.2.</p> <p>[BMA.0001] – Affidavit of Ms Katherine Taske, [61] to [62].</p> <p>[BMA.0011] – <i>Environment Protection and Biodiversity Conservation Act 1999</i> referral decision.</p> <p>The statutory party submitted that several other policy documents ought to also be considered:</p> <ul style="list-style-type: none"> <li>- the Queensland Energy and Jobs Plan 2019;</li> <li>- the Queensland Climate Action Plan 2020-2030; and</li> <li>- the Under2 Coalition Memorandum of Understanding which allows subnational governments to highlight their work to reduce GHG emissions.</li> </ul>
<p><i>Standard Criteria (c) - Any relevant EIS, assessment or report</i></p>	<p>[BMA.0001] – Affidavit of Ms Katherine Taske, [63] to [64].</p> <p>[BMA.0011] – <i>Environment Protection and Biodiversity Conservation Act 1999</i> referral decision.</p> <p>[BMA.0012] - [BMA.0097] – Environmental Impact Statement and appendices, supplementary Environmental Impact Statement and appendices, and supporting expert reports.</p> <p>[BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.3.</p> <p>[DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (pages 91 to 92).</p> <p>The statutory party submits that the following documents were also considered by the delegate:</p> <ul style="list-style-type: none"> <li>- [BMA.0153] – Letter to DESI (02.02.2024);</li> </ul>

	<ul style="list-style-type: none"> <li>- [BMA.0154] – Calculations Prepared by Mr Klaassen (2 Feb 2024); and</li> <li>- [BMA.0155] – Golder GeoChemical Void Water Quality Report.</li> </ul>
<i>Standard Criteria (d) - The character, resilience and values of the receiving environment</i>	<p>[BMA.0001] – Affidavit of Ms Katherine Taske, [65] to [67].</p> <p>[BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.4.</p> <p>[DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 92).</p>
<i>Standard Criteria (f) - all submissions made by the applicant and submitters</i>	<p>[BMA.0001] – Affidavit of Ms Katherine Taske, [68] to [69].</p> <p>[BMA.0007] – Objection Request Referral.</p> <p>[BMA.0156] – Objector Submissions.</p>
<i>Standard Criteria (g) - Best practice environmental management for activities</i>	<p>[BMA.0001] – Affidavit of Ms Katherine Taske, [70] to [71].</p> <p>[BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.7.</p> <p>[DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 92).</p>
<i>Standard Criteria (h) - the financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) as they would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument</i>	<p>[BMA.0001] – Affidavit of Ms Katherine Taske, [72] to [73].</p> <p>[BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.7.</p> <p>[DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (pages 92 to 93).</p>
<i>Standard Criteria (i) - the public interest</i>	<p>[BMA.0001] – Affidavit of Ms Katherine Taske, [74] to [75].</p> <p>[BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.8.</p> <p>[BMA.0129] – Affidavit of Mr Brad Prytherch, [18], [37], and [39] – [44].</p> <p>[BMA.0132] – BHP and BMA's Community Contribution Report (pages 6 and 8).</p>

	[DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 93).
<i>Standard Criteria (j) any relevant site management plan</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [76] to [77]. [BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.9. [DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 93).
<i>Standard Criteria (k) any relevant integrated environmental management system or proposed integrated environmental management system</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [78] to [79]. [BMA.0110] – Environmental Authority Amendment Supporting Information Document, Section 4.3.10. [DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 93).
<i>Standard Criteria (l) - any other matter prescribed under a regulation</i>	[BMA.0001] – Affidavit of Ms Katherine Taske, [80] [DES.0001] – Affidavit of Dr Juliana McCosker, Exhibit JMC-04 (page 93).



## **APPENDIX B**

# Permit

*Environmental Protection Act 1994*

## Environmental authority EPML00562013

*This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.*

**Environmental authority number: EPML00562013**

**Environmental authority takes effect on**

**Environmental authority holder(s)**

Name(s)	Registered address
BHP COAL PTY LTD	Level 14, 480 Queen Street BRISBANE CITY QLD 4000 Australia
QCT INVESTMENT PTY. LTD.	Level 16 480 Queen Street BRISBANE CITY QLD 4000 Australia
Umal Consolidated Pty Ltd	Level 14, 480 Queen Street BRISBANE CITY QLD 4000
Mitsubishi Development Pty Ltd	Level 16, 480 Queen Street BRISBANE CITY QLD 4000
QCT MINING PTY. LTD.	Level 16 480 Queen Street BRISBANE CITY QLD 4000 Australia
QCT Resources Pty Limited	Level 16, 480 Queen Street BRISBANE CITY QLD 4000
BHP Queensland Coal Investments Pty Ltd	Level 14, 480 Queen Street BRISBANE CITY QLD 4000

## Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML1775, ML70403
Ancillary 08 - Chemical Storage 1: Storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a)	ML1775, ML70403, ML70462
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML1775, ML70403, ML70462
Ancillary 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and	ML1775, ML70403, ML70462

Department of Environment and Science

Environmentally relevant activity/activities	Location(s)
sorting, dismantling, baling or temporarily storing- (c) category 2 regulated waste	
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML1775, ML70403, ML70462

### Additional information for applicants

#### Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

#### Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website [www.qld.gov.au](http://www.qld.gov.au), using the search term 'duty to notify'.

#### Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

**Delegate**

Department of Environment and Science  
Delegate of the administering authority  
*Environmental Protection Act 1994*

**Enquiries:**

Business Centre (Coal)  
Department of Environment and  
Science PO Box 3028  
EMERALD QLD 4720  
Phone: (07) 4987 9320  
Email: CRMining@des.qld.gov.au

**Date Issued:**

**Obligations under the *Environmental Protection Act 1994***

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

**Conditions of environmental authority**

Schedule A: General	
Condition number	Condition
A1	This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
A2	<u>In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Appendix 1 – Approved Caval Ridge Mine Disturbance Extent attached to this environmental authority.</u>
A3	<u>The environmental authority holder is approved to extract coal at a maximum rate of 15 million tonnes per year (Mtpa) of run of mine (ROM) coal in accordance with this environmental authority.</u>
A4	<p><b>Prevent and /or minimise likelihood of environmental harm</b></p> <p>In carrying out the environmentally relevant activities, the environmental authority holder must take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this environmental authority.</p>
A5	<p><b>Maintenance of measures, plant and equipment</b></p> <p>The environmental authority holder must ensure:</p> <ul style="list-style-type: none"> <li>a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed;</li> <li>a) that such measures, plant and equipment are maintained in a proper condition;</li> <li>b) that such measures, plant and equipment are operated in a proper manner; and</li> <li>c) that all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.</li> </ul>
A6	<p><b>Monitoring and records</b></p> <p>Except where specified otherwise in another condition of this environmental authority, all monitoring records and reports required by this environmental authority must be kept for a period of not less than <b>five (5) years</b>.</p>
A7	Monitoring and determinations required under any condition of this environmental authority must be conducted by an appropriately qualified person(s).

A8	Upon request from the administering authority, copies of monitoring results, records, registers, management plans and reports required by the conditions of this environmental authority must be made available and provided to the administering authority within <b>ten (10) business days</b> or an alternative timeframe agreed between the administering authority and the environmental authority holder.
A9	<p><b>Notification of emergencies, incidents and exceptions</b></p> <p>The environmental authority holder must notify the administering authority by written notification within <b>twenty-four (24) hours</b> after becoming aware of any emergency or incident that results in the release of contaminants not in accordance, or reasonably expected to be not in accordance, with the conditions of this environmental authority.</p>
A10	<p>Within <b>ten (10) business days</b> following the initial notification under condition <b>A7</b>, or the receipt of monitoring results associated with the notification made under condition <b>A7</b>, whichever is the latter, the environmental authority holder must provide further written advice to the administering authority, including the following:</p> <ul style="list-style-type: none"> <li>a) results and interpretation of any samples taken and analysed;</li> <li>b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and</li> <li>c) proposed actions to prevent a recurrence of the emergency or incident.</li> </ul>
A11	<p><b>Complaints</b></p> <p>The environmental authority holder must record all environmental complaints received about the mining activities, including:</p> <ul style="list-style-type: none"> <li>a) name, address and contact number for of the complainant;</li> <li>b) time and date of complaint;</li> <li>c) reasons for the complaint;</li> <li>d) investigations undertaken;</li> <li>e) conclusions formed;</li> <li>f) actions taken to resolve the complaint, including the use of appropriate dispute resolution if required;</li> <li>g) any abatement measures implemented; and</li> <li>h) person responsible for resolving the complaint.</li> </ul>
A12	<p>A register of alternative arrangements must be established and maintained by the environmental authority holder. The register must include:</p> <ul style="list-style-type: none"> <li>a) the location to which the alternative arrangement applies;</li> <li>b) the period of the alternative arrangement;</li> <li>c) details about the particular environmental nuisance impact or impacts the arrangement is for; and</li> <li>d) details about the mitigation measures, where relevant.</li> </ul>

A13	<p><b>Monitoring on request</b></p> <p>When requested by the administering authority, the environmental authority holder must investigate any nuisance, or contaminant release, or environmental harm, or complaint that is neither frivolous nor vexatious in the opinion of the authorised person, by:</p> <ul style="list-style-type: none"> <li>a) undertaking the monitoring specified by the administering authority;</li> <li>b) undertaking the monitoring in the timeframe nominated or agreed to by the administering authority;</li> <li>c) completing an analysis and interpretation of the monitoring results; and</li> <li>d) implementing abatement measures, where required.</li> </ul>
A14	<p>The results of the investigation undertaken in accordance with condition <b>A11</b> must be provided to the administering authority within <b>twenty (20) business days</b> of completion of the monitoring timeframe in accordance with condition <b>A11(b)</b>, or a longer timeframe agreed to by the administering authority.</p>
A15	<p><u>The environmental authority holder must notify the administering authority on commencement of Horse Pit Extension activities.</u></p>



Schedule B: Air	
Condition number	Condition
B1	<p><b>Odour nuisance</b></p> <p>The release of noxious or offensive odour or any other noxious or offensive airborne contaminant resulting from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place.</p>
B2	<p>If the administering authority determines odour released from the mining activities to constitute an environmental nuisance, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance.</p>
B3	<p><b><u>Dust nuisance-Air Emissions</u></b></p> <p>The release of dust or particulate matter or both resulting from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place.</p>
<b><u>B4</u></b>	<p>Dust generated by the mining activities must not cause any of the <b>following</b> air quality objectives <b>specified in Table B1</b> to be exceeded at a sensitive place or commercial place.:</p> <p>a) a level of deposited dust, measured as total insoluble matter, of 120 milligrams per square metre per day based on a monthly average; and</p> <p>a) a concentration of total particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time.</p>
B5	<p>Air emissions for a sensitive place or commercial place must be measured</p> <p>a) At that place; or</p> <p>b) At the monitoring location representative of the of the sensitive place or commercial place</p>
B6	<p><del>The environmental authority holder must take all reasonable and practical measures to meet the objective of the concentration of particulate matter generated by the mining activities with an aerodynamic diameter of less than 10 micrometres (PM10), of 50 micrograms per cubic metre (50µg/m<sup>3</sup>) suspended in the atmosphere over a 24 hour averaging time at any sensitive place or commercial place.</del></p> <p><u>The environmental authority holder must ensure that the concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) generated by the mining activities does not exceed 50µg/m<sup>3</sup> suspended in the atmosphere over a 24 hour averaging time at any sensitive place or commercial place.</u></p>

B7	<u>The environmental authority holder must ensure when a PM10 level of 50µg/m<sup>3</sup> over a 24 hour averaging period at any sensitive or commercial place is measured, the concentration of PM10 generated by the mining activity does not exceed 30µg/m<sup>3</sup> over a 24 hour averaging period at the sensitive or commercial place.</u>
B8	<u>The environmental authority holder must develop a Trigger Action Response Plan (TARP) that ensures compliance with conditions B6 and B7.</u>
B9	<u>The environmental authority holder must develop a Trigger Action Response Plan (TARP) that ensures compliance with conditions B6 and B7.</u>
B10	<u>The environmental authority holder will determine suitable escalating alarm thresholds specifically relating to implementation of the TARP for condition B7.</u>
B11	<u>By 30 June 2024 the escalating alarm levels determined in accordance with condition B10<sup>9</sup> must be submitted to the department for review and the environmental authority holder must address any comments made by the department.</u>
B12	<u>Following compliance with conditions B9 – B11 the TARP must be implemented.</u>
B13	<u>The TARP required by condition B8 must be reviewed by 30 June each calendar year by an appropriately qualified person and any recommendations implemented into the TARP.</u>
B14	<u>The environmental authority holder must ensure and be able to demonstrate that in complying with conditions B6 – B7 (inclusive) the dust abatement measures specified in the Trigger Action Response Plan have been undertaken for the relevant alarm level and documented in the Dust Control System.</u>
B15	<p>An Air Emissions Management Plan must be developed by an appropriately qualified person and implemented by 30 June 2024. The Air Emissions Management Plan must incorporate a program for continuous improvement for the management of dust and particulate matter resulting from the mining activities with respect to, but not limited to:</p> <ul style="list-style-type: none"> <li>a) the collection of air quality and meteorological data at locations and using the monitoring methods described in <b>Table B1 -Air quality limits and monitoring requirements</b> at all locations specified in <b>Table B2 -Dust and Particulate Matter Monitoring Locations</b>;</li> <li>b) a system to identify adverse meteorological conditions likely to produce elevated levels of dust including PM10 at a sensitive place or commercial place due to the mining activities; and</li> <li>c) a dust and particulate matter control strategy which activates a timely implementation of management control actions.</li> </ul>
B16	<u>The Air Emissions Management Plan required by condition B15 must be reviewed by 30 June each calendar year by an appropriately qualified person and any recommendations implemented into the TARP.</u>

<u>B17</u>	Where monitoring identifies instances where a concentration specified in condition <b>B6 -B7</b> or <b>Table B1</b> is exceeded at any sensitive place or commercial place, the environmental authority holder must report to the administering authority within <b>fourteen (14) days</b> : a) the air quality data at the sensitive place or commercial place; b) a description of meteorological conditions recorded in accordance with <b>Table B1 Air quality limits and monitoring requirements</b> and <b>Table B2 Dust and Particulate Matter Monitoring Locations</b> occurring at the time; c) the air quality data upwind of the mining activities (if known); d) <u>measures taken to reduce dust generated by the mining activities and</u> <u>d)e)the contribution of the mining activities to the PM10 concentration at the sensitive or commercial place.</u>
<u>B18</u>	<u>If the monitoring required by condition A13 is undertaken for over one month, then monthly interim reports should be provided to the administering authority.</u>
<u>B19</u>	<u>Air quality monitoring data must be made publicly available in real time online on the environmental authority holders website.</u>
<u>B2089</u>	<u>The format of the information to be made available in accordance with condition B19 must be provided to the administering authority for approval within 6 months of commencement of the Horse Pit Extension activities.</u>
<u>B21</u>	<u>The environmental authority holder must implement the requirements of condition B19 within twelve (12) months of Horse Pit Extension activities commencing.</u>

Air Quality Determination	Monitoring Method to be used
PM10	Real time monitoring of the 24 hour average using the following method: <i>Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size selective inlet—Gravimetric method; or</i> <i>Australian Standard AS3580.9.7 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Dichotomous sampler (PM10, Coarse PM and PM2.5)—Gravimetric method; or</i> <i>Australian Standard AS3580.9.8 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 continuous direct mass method using a tapered element oscillating microbalance analyser; or</i> <i>Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric method; or</i> <i>Australian Standard AS3580.9.11 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 beta attenuation monitors.</i>
TSP	<i>Australian Standard AS3580.9.3 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method; or</i>

	<i>Any alternative method of monitoring TSP that may be permitted by the Air Quality Sampling Manual as published from time to time by the administering authority.</i>
Dust Deposition	<i>Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter—Gravimetric method.</i>
Meteorological data (including but not limited to wind speed and direction, humidity, temperature and precipitation)	<i>Australian Standard AS2923-1987 Ambient air—Guide for measurement of horizontal wind for air quality applications; or An alternative method approved by the administering authority.</i>
Siting of monitoring equipment	<i>Australian Standard AS3580.1.1 Methods for sampling and analysis of ambient air—Guide to siting air monitoring equipment.</i>

**Table B1 – Air quality limits and monitoring requirements**

<b>Monitoring Location</b>	<b>Air Quality Indicator</b>	<b>Frequency</b>	<b>Air Quality Limit</b>	<b>Monitoring Method</b>
All sites specified in Table B2	PM <sub>10</sub>	Continuous	50µg/m <sup>3</sup> (24-hr avg)  When condition B7 is triggered 30µg/ m <sup>3</sup> (24-hr avg)	AS/NZS 3580.9.6:2015 AS/NZS3580.9.7:2009 AS3580.9.8:2022 AS358.9.9:2017 AS/NZS35801.9.11:2022
	TSP	Continuous	90µg/m <sup>3</sup>	AS/NZS 3580.9.3:2015
	Dust deposition	Continuous	120 mg/m <sup>2</sup> /day	AS/NZS3580.10.1:2003
	Wind speed and direction, Temperature, Precipitation, Relative humidity	Continuous	N/A	AS/NZS 3850.14:2014

**Table B2 -Dust and Particulate Matter Monitoring Locations**

<b>Monitoring Point</b>	<b>Receiving Area</b>	<b>Easting (GDA64)</b>	<b>Northing (GDA64)</b>	<b>Monitoring Description</b>
Site 2	Moranbah Township	607996	7562934	PM10, TSP, Dust Deposition, Met Station
Site 4	Moranbah Access Road north of CVM	609014	7562276	Dust Deposition
Site 5	Long Pocket Road	603130	7560336	Dust Deposition
Site 6	Long Pocket Road	605679	7561154	PM10, TSP, Dust Deposition, Met Station

Site 7	Moranbah Access Road north of site	609780	7561142	Dust Deposition
Site 8	Moranbah Airport	610852	7559679	PM10, Dust Deposition, Met Station
Site 9	Moranbah Access Road, east of site	611743	7558056	Dust Deposition
Site 10	Hornery Homestead	612320	7557349	Dust Deposition
Site 11	Peak Downs Highway near intersection with Dysart Moranbah Road	612299	7554887	Dust Deposition
Site 13	East of mine on Dysart Moranbah Road	614439	7552791	PM10, TSP, Dust Deposition, Met Station
Site 14	West of CHPP	608729	7550026	Dust Deposition, Met Station
Site 15	West of mine, just south of Peak Downs Highway	608001	7547068	PM10, TSP, Dust Deposition, Met Station

Schedule C: Noise and Vibration	
Condition number	Condition
C1	<p><b>Noise nuisance</b></p> <p>Noise from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place.</p>
C2	<p>Noise is not considered an environmental nuisance under condition <b>C1</b> if monitoring shows that noise does not exceed the limits in <b>Table C1 (Noise Limits)</b>, at any sensitive place or commercial place.</p>
C3	<p><b>Noise monitoring</b></p> <p>Noise monitoring, undertaken in accordance with condition <b>A11</b>, must comply with the most recent version of the administering authority's <i>Noise Measurement Manual</i>, and must include the following descriptors, characteristics and conditions:</p> <ul style="list-style-type: none"> <li>a) <math>L_{Aeq, adj, 15 mins}</math> (external);</li> <li>b) <math>L_{A1, adj, 15 mins}</math> (internal, or a measured external noise level and calculation of corresponding internal noise level);</li> <li>c) the level and frequency of occurrence of impulsive or tonal noise;</li> <li>d) atmospheric conditions including wind speed and direction;</li> <li>e) effects due to extraneous factors such as traffic noise; and</li> <li>f) location, date and time of recording.</li> </ul>
C4	<p>If monitoring, undertaken in accordance with condition <b>A11</b>, indicates exceedance of the relevant limits in <b>Table C1 (Noise Limits)</b>, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance.</p>

**Table C1 (Noise Limits)**

Noise Level dB(A)	Monday to Sunday (including public holidays)		
	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
<b>Sensitive Place</b>			
$L_{Aeq, adj, 15 mins}^1$	$RBL^3 + 5$	$RBL^3 + 5$	$RBL^3 + 5$
$L_{A1, adj, 15 mins}^2$	45	45	45

**NOTES:**

1 External noise limit

2 Internal noise limit

3 Rated Background Level (RBL) as defined in the administering authority's Planning for Noise Control Guideline

C5	<p><b>Vibration nuisance</b></p> <p>Vibration from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place.</p>
C6	<p>Vibration is not considered an environmental nuisance under condition <b>C5</b> if monitoring shows that vibration does not exceed the limits specified in <b>Table C2 (Vibration Limits)</b>.</p>
C7	<p><b>Airblast overpressure nuisance</b></p> <p>The airblast overpressure level from blasting operations on the mining leases must not cause an environmental nuisance, at any sensitive place or commercial place.</p>
C8	<p>Airblast overpressure is not considered an environmental nuisance under condition <b>C7</b> if monitoring shows that airblast overpressure does not exceed the levels specified in <b>Table C3 (Airblast Overpressure Level)</b>.</p>
C9	<p><b>Vibration and/or airblast overpressure monitoring</b></p> <p>Vibration and/or airblast overpressure monitoring, undertaken in accordance with condition <b>A11</b>, must comply with the most recent version of the administering authority's <i>Noise Measurement Manual</i>, and must include the following descriptors, characteristics and conditions:</p> <ul style="list-style-type: none"> <li>a) location of the blast(s) within the mining area (including which bench level);</li> <li>b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and</li> <li>c) location, date and time of recording.</li> </ul>
C10	<p>If monitoring, undertaken in accordance with condition <b>A11</b>, indicates exceedance of the relevant limits in <b>Table C2 (Vibration Limits)</b> or <b>Table C3 (Airblast Overpressure Level)</b>, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance.</p>

**Table C2 (Vibration Limits)**

Location	Vibration Measured
Sensitive place or commercial place	<p>Peak particle velocity (mm/s)</p> <p>For vibrations of more than 35 Hz – no more than 25 mm/s ground vibration</p> <p>For vibrations of no more than 35 Hz – no more than 10 mm/s ground vibration</p>

**Table C3 (Airblast Overpressure Level)**

Location	Airblast Overpressure Measured
Sensitive place or commercial place	<p>115 dB (Linear peak) for four (4) out of five (5) consecutive blasts regardless of the interval between blasts, and not greater than 120 dB (Linear peak) at any time.</p>

Schedule D: Waste	
Condition number	Condition
D1	<p><b>Waste management</b></p> <p>A Waste Management Plan must be developed by an appropriately qualified person and implemented. The Waste Management Plan must include, but is not limited to:</p> <ul style="list-style-type: none"> <li>a) a description of the mining activities that may generate waste;</li> <li>b) a description of all waste activities being carried out;</li> <li>c) the location/s (including GPS coordinates) of where all waste activities are, or have been, carried out, including: <ul style="list-style-type: none"> <li>i. the type of waste disposed of, treated, or reprocessed; and</li> <li>ii. the volume of waste disposed of, treated, or reprocessed;</li> </ul> </li> <li>d) identification of the potential risks to the environment from all waste activities carried out;</li> <li>e) control measures to be implemented to minimise the potential for environmental harm associated with the carrying out of the waste activities, including but not limited to: <ul style="list-style-type: none"> <li>i. segregation of the wastes;</li> <li>ii. storage of the wastes;</li> <li>iii. transport of the wastes; and</li> <li>iv. monitoring and reporting matters concerning the wastes;</li> </ul> </li> <li>f) how the waste will be managed in accordance with the waste management hierarchy (that is, avoid, reuse, recycling, energy recovery, disposal);</li> <li>g) the hazardous characteristics of the wastes generated including disposal procedures for hazardous wastes;</li> <li>h) procedures for reprocessing waste in accordance with condition <b>D4</b>;</li> <li>i) procedures for managing accidents, spills and other incidents;</li> <li>j) the indicators or other criteria on which the performance of the waste management plan will be assessed; and</li> <li>k) staff training.</li> </ul>
D2	<p>The environmental authority holder must submit the Waste Management Plan required by condition <b>D1</b> to the administering authority prior to commencing a new process, or varying an existing process, for reprocessing any waste.</p>
D3	<p><b>Waste receipt</b></p> <p>The only waste permitted to be received is:</p> <ul style="list-style-type: none"> <li>a) the types of waste specified in conditions <b>D5</b> to <b>D7</b> (inclusive); and</li> <li>b) sewage and sludge for treatment in accordance with <b>Schedule H: Sewage Treatment</b>; and</li> <li>c) from a BHP Billiton Mitsui Coal (BMC) or BHP Mitsubishi Alliance (BMA) site in Queensland.</li> </ul>



D4	<p>Waste reprocessing</p> <p>The only waste permitted to be reprocessed is:</p> <ul style="list-style-type: none"> <li>a) spoil or overburden;</li> <li>b) vegetation;</li> <li>c) water or sediment containing hydrocarbons;</li> <li>d) fuels, oils, lubricants and coolants;</li> <li>e) bulk rubber;</li> <li>f) inert waste;</li> <li>g) poly-pipe and other plastic;</li> <li>h) fibreglass;</li> <li>i) treated and untreated timber; and</li> <li>j) asphalt.</li> </ul>
D5	<p>Unless otherwise specified in conditions <b>D6</b> and <b>D7</b>, waste, other than spoil or overburden or vegetation removed as part of the mining activity, must not be disposed of within the mining leases listed on this environmental authority and must be taken to a facility that is lawfully allowed to accept such waste under the provisions of the <i>Environmental Protection Act 1994</i>.</p>
D6	<p>The following types of waste are permitted to be disposed of within the specified features for the waste type:</p> <ul style="list-style-type: none"> <li>a) rejects: <ul style="list-style-type: none"> <li>i. in spoil emplacements.</li> </ul> </li> </ul>
D7	<p>The following types of waste are permitted to be disposed of within the mining leases listed on this environmental authority:</p> <ul style="list-style-type: none"> <li>a) bulk rubber;</li> <li>b) inert waste;</li> <li>c) poly-pipe and other plastic;</li> <li>d) fibreglass;</li> <li>e) treated and untreated timber;</li> <li>f) asphalt; and</li> <li>g) asbestos.</li> </ul> <p>These types of waste may be disposed of:</p> <ul style="list-style-type: none"> <li>a) in pits or voids;</li> <li>b) in spoil emplacements; and</li> <li>c) left in-situ below ground level.</li> </ul>

Schedule E: Land	
Condition number	Condition
E1	<b>Topsoil</b> Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.
E2	A topsoil inventory, which identifies the topsoil requirements for rehabilitation and availability of suitable topsoil on site, must be provided with any Estimated Rehabilitation Cost application.
E3	<b>Rehabilitation landform criteria</b> Unless otherwise permitted under the conditions of this environmental authority, all areas significantly disturbed by mining activities must be rehabilitated in accordance with <b>Table E1 (Rehabilitation Requirements)</b> .

**Table E1 (Rehabilitation Requirements)**

Post Mining Land Use	Goal	Objective	Indicator	Acceptance Criteria
Cattle grazing	Safe to humans and wildlife	Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use	Hazard assessment	No significant difference
	Stable	Rehabilitation is geotechnically stable	Factor of safety	≥1.5
		Rehabilitation is erosionally stable	Extent, slope gradient and groundcover	1. Groundcover >50% 2. 70% of slopes ≤20%
	Non-polluting	Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters	pH EC Turbidity	Not significantly different to upstream values
		Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater	EC	Not significantly different to: (a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or, (b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines.
	Able to sustain the agreed post-mining land use	Rehabilitation is suitable for sustainable cattle grazing	Land suitability assessment for cattle grazing	Land suitability class ≤3 or not different from pre-mining class if ≥4. Assessment completed in accordance with <i>LSA Framework for Open-Cut Coal Mine Rehabilitation 2018 (A rule-set for land suitability assessment of sustainable beef cattle grazing on land rehabilitated after open-cut coal mining in the Bowen Basin Queensland)</i> unless otherwise agreed in writing between the administering authority and the environmental authority holder.

Post Mining Land Use	Goal	Objective	Indicator	Acceptance Criteria
			Leucaena stem density	<250 stems >2m height per ha (1 per 40m <sup>2</sup> ), mean total area
Dryland cropping	Safe to humans and wildlife	Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use	Hazard assessment	No significant difference
	Stable	Rehabilitation is geotechnically stable	Factor of safety	≥1.5
		Rehabilitation is erosionally stable	Percentage of cultivation at >1% slope gradient with functional contour banks	100% of rehabilitated areas
	Non-polluting	Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters	pH EC Turbidity	Not significantly different to upstream values
		Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater	EC	Not significantly different to: (a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or, (b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines.
	Able to sustain the agreed post-mining land use	Rehabilitation is suitable for sustainable dryland cropping	Land suitability assessment for dryland cropping	Land suitability class ≤3 or not different from pre-mining class if ≥4. Assessment completed in accordance with the <i>Regional Land Suitability Frameworks for Queensland 2013</i> unless otherwise agreed in writing between the administering authority and the environmental authority holder.
Woodland habitat	Safe to humans and wildlife	Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use	Hazard assessment	No significant difference
	Stable	Rehabilitation is geotechnically stable	Factor of safety	≥1.5 unless an alternative is justified by an appropriately qualified person
		Rehabilitation is erosionally stable	Groundcover (steep slopes, >15%)	80%
			Groundcover (lesser slopes, ≤15%)	50%
	Non-polluting	Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters	pH EC Turbidity	Not significantly different to upstream values
		Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater	EC	Not significantly different to: (a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or,

Post Mining Land Use	Goal	Objective	Indicator	Acceptance Criteria
				(b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines.
	Able to sustain the agreed post-mining land use	Native bushland characteristics	Species richness Trees Shrubs Grasses	≥2 ≥3 ≥4
			Tree canopy cover	≥16%
Water Storage	Safe to humans and wildlife	Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use	Hazard assessment	No significant difference
	Stable	Rehabilitation is geotechnically stable	Factor of Safety	≥1.5
		Rehabilitation is erosionally stable (banks and immediate surrounds)	Groundcover	>50%
	Non-polluting	Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters	pH EC Turbidity	Not significantly different to upstream values
		Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater	EC	Not significantly different to: (a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or, (b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines.
	Able to sustain the agreed post-mining land use	Rehabilitation retains water that is a potential resource for cattle grazing, with quality according to ANZECC guidelines version October 2000	TDS Calcium Magnesium Nitrate Nitrite Sulphate	≤5,000mg/L ≤1,000mg/L ≤2,000mg/L ≤400mg/L ≤30mg/L ≤1,000mg/L
Watercourse	Safe to humans and wildlife	Safety hazards are not significantly different to surrounding unmined landscapes subject to the same land use	Hazard assessment	No significant difference
	Stable	Rehabilitation is erosionally stable	Geomorphic index (IDC method)	Greater or equal to upstream or downstream values.
	Non-polluting	Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters	pH EC Turbidity	Not significantly different to upstream values
	Able to sustain the agreed post-	Riparian vegetation	Riparian vegetation index (IDC method)	Greater or equal to upstream or downstream values.

Post Mining Land Use	Goal	Objective	Indicator	Acceptance Criteria
	mining land use			

E4	<u>The environmental authority holder must establish a minimum area of progressive rehabilitation of 80ha by the end of FY24, 90ha by the end of FY25 and 100ha by the end of each subsequent financial year until the end of mining activities.</u>
<u>E5</u>	<u>The progressive rehabilitation established in accordance with <b>condition E4</b> must comprise the completion of landform reshaping, topsoiling, amelioration and seeding.</u>
<u>E6</u>	<u>Residual void design</u> <u>Residual voids must comply with the design criteria specified in Table E2.</u>
E7	<p><b>Residual void studies</b></p> <ul style="list-style-type: none"> <li>a) the environmental authority holder must prepare a revised residual void model for approval by the administering authority during the fifth year after commencement of operation;</li> <li>b) the model in a) must be subject to review each subsequent <b>five (5) years</b> while the mine continues to operate;</li> <li>c) any amendment to the approved residual void model that may arise from the reviews in a) or b) must be based on any significant changes to groundwater characteristics or other data considered relevant by the administering authority that becomes available from the groundwater monitoring program; and</li> <li>d) notwithstanding obligations under a), b) and c), the environmental authority holder must undertake residual void water balance modelling during mine closure planning, in consultation with the administering authority, to ensure assumptions regarding surface water runoff and groundwater ingress are suitable for the site.</li> </ul>

E8	<p><b>Residual void outcome</b></p> <p>Complete an investigation into residual voids and submit a report to the administering authority proposing acceptance criteria and landform design criteria for departmental review and comment. On acceptance of the criteria proposed in the Residual Void Management Plan, the criteria must be specified in the environmental authority.</p> <p>The investigation must at a minimum include the following:</p> <ul style="list-style-type: none"> <li>a) a study of options available for minimising final void area and volume;</li> <li>b) develop design criteria for rehabilitation of final voids;</li> <li>c) a void hydrology study, addressing the long-term water balance in the voids, connections to groundwater resources and water quality parameters in the long term;</li> <li>d) a study of the measures to protect the residual voids, uncompacted overburden and workings from the “probable maximum flood” level based on the Bureau of Meteorology’s “probable maximum precipitation” forecast for the locality;</li> <li>e) a pit wall stability study, considering the effects of long-term erosion and weathering of the pit wall and the effects of significant hydrological events;</li> <li>f) a study of void capability to support native flora and fauna; and</li> <li>g) a proposal/s for end of mine void rehabilitation success criteria and final void areas and volumes.</li> </ul> <p>These studies will be undertaken during the life of the mine, and will include detailed research and modelling.</p>
E9	<p><b>Rehabilitation Monitoring Program</b></p> <p>Once rehabilitation has commenced, the environmental authority holder must conduct a Rehabilitation Monitoring Program at an interval no greater than <b>two (2) years</b>, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation program.</p>
E10	<p>The Rehabilitation Monitoring Program must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder.</p>
E11	<p>The Rehabilitation Monitoring Program must be included in the annual return and updated with each subsequent annual return, describing:</p> <ul style="list-style-type: none"> <li>a) how the rehabilitation objectives will be achieved; and</li> <li>b) verification of rehabilitation success.</li> </ul>

E12	<p><b>Post Closure Management Plan</b></p> <p>A Post Closure Management Plan for the site must be prepared at least <b>eighteen (18) months</b> prior to the final coal processing on site and implemented for a nominal period of:</p> <ul style="list-style-type: none"> <li>a) at least <b>thirty (30) years</b> following final coal processing on site; or</li> <li>b) a shorter period if the site is proven to be geotechnically and geochemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm.</li> </ul>
E13	<p>The Post Closure Management Plan must include the following elements:</p> <ul style="list-style-type: none"> <li>d) operation and maintenance of: <ul style="list-style-type: none"> <li>1. wastewater collection and reticulation systems;</li> <li>2. wastewater treatment systems;</li> <li>3. the groundwater monitoring network;</li> <li>4. final cover systems; and</li> <li>5. vegetative cover.</li> </ul> </li> <li>e) monitoring of: <ul style="list-style-type: none"> <li>1. surface water quality;</li> <li>2. groundwater quality;</li> <li>3. seepage rates;</li> <li>4. erosion rates;</li> <li>5. the integrity and effectiveness of final cover systems; and</li> <li>6. the health and resilience of native vegetation cover.</li> </ul> </li> </ul>



E14	<p><b>Mining waste management</b></p> <p>A Mining Waste Management Plan together with the certification by an appropriately qualified person must be developed and implemented during the continuation of the environmental authority. The Mining Waste Management Plan must at a minimum include:</p> <ul style="list-style-type: none"> <li>a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following contaminants: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Net Acid Producing Potential (NAPP), Total Sulfur (S), Chromium Reducible Sulfur (Scr), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulfate (SO<sub>4</sub>);</li> <li>b) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal;</li> <li>c) the availability or leachability of metals from the mining waste;</li> <li>d) quantity of potentially acid forming (PAF) mining waste;</li> <li>e) review potential impacts of PAF mining waste on the success of proposed rehabilitation methods;</li> <li>f) management actions for mining waste that has been identified as having a high availability or leachability of metals in accordance with condition <b>E13</b>;</li> <li>g) management actions for mining waste that has been defined as PAF;</li> <li>h) identification of environmental impacts and potential environmental impacts;</li> <li>i) control measures for routine operations to minimise likelihood of environmental harm;</li> <li>j) contingency plans and emergency procedures for non-routine situations; and</li> <li>k) periodic review of environmental performance and continual improvement.</li> </ul>
E15	<p><b>Acid mine drainage and leachate management</b></p> <p>Subject to the release limits defined in <b>Schedule F: Water</b>, all reasonable and practicable measures must be implemented to prevent hazardous leachate being directly or indirectly released or likely to be released as a result of the mining activity to the environment</p>
E16	<p><b>Preventing contaminant release to land</b></p> <p>Contaminants must not be released to land in manner that constitutes a nuisance, material harm or serious environmental harm.</p>
E17	<p><b>Storage and handling of chemicals and flammable or combustible liquids</b></p> <p>All chemicals and flammable or combustible liquids must be stored and handled in accordance with the most recent version of an Australian Standard where such is applicable. Where no relevant Australian Standard exists, store such materials within an effective on-site containment system.</p>

E18	<p><b>Infrastructure</b></p> <p>All infrastructure, constructed by or for the environmental authority holder during the mining activities including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post mining landowner/ landholder.</p> <p><i>NOTE: This is not applicable where the landowner/ landholder is also the environmental authority holder.</i></p>
E19	<p><b>Exploration</b></p> <p>The environmental authority holder must rehabilitate in accordance with this environmental authority, any disturbance from mining activities which were undertaken under:</p> <ul style="list-style-type: none"> <li>a) this environmental authority; or</li> <li>b) any other environmental authority that applied to the land that is the subject of this environmental authority.</li> </ul>
E20	<p><b>Flora and fauna</b></p> <p>A qualified spotter catcher is to be engaged to work ahead of the site clearing works at the commencement of the vegetation clearing activity.</p>
E21	<p>The environmental authority holder must develop and implement a watercourse revegetation plan for all creek diversions including but not limited to:</p> <ul style="list-style-type: none"> <li>a) establishing benchmarks for vegetation condition in watercourses and riparian areas;</li> <li>b) describe how and when the revegetation objectives will be achieved;</li> <li>c) undertake ecological monitoring of aquatic ecology to ensure that the aquatic ecological values are maintained or enhanced;</li> <li>d) describe performance monitoring and reporting arrangements; and</li> <li>e) contingency actions should objectives not be achieved.</li> </ul>
E22	<p>The watercourse revegetation plan must be submitted to the administering authority prior to the commencement of any creek diversions.</p>
E23	<p><b><u>Biodiversity Offsets</u></b></p> <p><u>Significant residual impacts to prescribed environmental matters are not authorised under this environmental authority or the Environmental Offsets Act 2014, unless the impact is specified in Table E3 – Authorised significant residual impacts to prescribed environmental matters.</u></p>
E24	<p><u>Records demonstrating that each impact to a prescribed environmental matters did not, or is not likely to result in a significant residual impact to that matter must be:</u></p> <ul style="list-style-type: none"> <li><u>a) completed by an appropriately qualified person; and</u></li> <li><u>b) kept for the life of the environmental authority.</u></li> </ul>

E25	<u>An environmental offset made in accordance with the Environmental Offsets Act 2014 and Queensland Environmental Offset Policy, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in Table E3 – Authorised significant residual impacts to prescribed environmental matters.</u>
E26	<u>The notice of election for the environmental offset required by condition E25, if applicable, must be provided to the administering authority no less than three months before the proposed commencement of the significant residual impacts for which the environmental offset is required.</u>
E27	<u>Impacts to Matters of State Environmental Significance (MSES) are not permitted on areas shown in Appendix 1 as Restricted Surface Disturbance Authorised.</u>

**Table E2 (Residual Void Design Criteria)**

<u>Void Identification</u>	<u>Highwall Criteria</u>	<u>Low Wall Criteria</u>	<u>Void Maximum surface area (ha)</u>
<u>Horse Pit</u>	<u>Average slope is 75% when measured from highwall toe to crest</u>  <u>Must be safe stable and non polluting</u>	<u>Maximum 30% slopes above natural ground level</u>	<u>545</u>  <u>Must be safe, stable and non polluting</u>
		<u>Must be safe, stable, non polluting and achieve a post mining land use above natural ground level in accordance with condition E3</u>	
		<u>Below natural ground level to 10m above water level</u>  <u>Safe and stable landform</u>  <u>Average slope 38% below water equilibrium level</u>	
<u>Heyford Pit</u>	<u>Must be safe stable and non polluting</u>	<u>Must be safe, stable, non polluting and achieve a post mining land use above natural ground level in accordance with condition E3</u>	<u>Must be safe stable and non polluting</u>

**Table E3 (Authorised significant residual impacts to prescribed environmental matters)**

Prescribed Environmental Matter	Maximum extent of impact	Offset Required	Location
<u>Connectivity Areas</u>	<u>84.19ha</u>	<u>Yes</u>	<u>In accordance with Appendix 2 – Location of Authorised Significant Residual Impacts</u>
<u>Regulated Vegetation</u>			
<u>RE 11.8.11</u>	<u>12.3ha</u>	<u>Yes</u>	<u>In accordance with Appendix 2 – Location of Authorised Significant Residual Impacts</u>
<u>Endangered Wildlife</u>			
<u><i>D. queenslandicum</i> (King Blue Grass)</u>	<u>12.3ha</u>	<u>Yes</u>	<u>In accordance with Appendix 2 – Location of Authorised Significant Residual Impacts</u>
<u>Vulnerable Wildlife</u>			
<u>Ornamental Snake Habitat</u>	<u>167.84ha</u>	<u>Yes</u>	<u>In accordance with Appendix 2 – Location of Authorised Significant Residual Impacts</u>

Schedule F: Water	
Condition number	Condition
F1	<p><b>Contaminant Release</b></p> <p>Contaminants that will or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the mining activities, except as permitted under the conditions of this environmental authority.</p>
F2	<p>Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in <b>Table F1 (Mine Affected Water Release Points)</b>.</p>

**Table F1 (Mine Affected Water Release Points)**

Release Point (RP)	Easting (GDA64)	Northing (GDA64)	Mine Affected Water Source and Location	Monitoring Point	Receiving Waters Description
RP1	612170	7550109	12N Dam	Discharge Point	Cherwell Creek

F3	<p>The release of mine affected water to waters in accordance with condition <b>F2</b> must not exceed the release limits stated in <b>Table F2 (Mine Affected Water Release Limits)</b> when measured at the monitoring points specified in <b>Table F1 (Mine Affected Water Release Points)</b> for each quality characteristic.</p>
----	--

**Table F2 (Mine Affected Water Release Limits)**

Quality Characteristic	Release Limit	Monitoring Frequency
Electrical Conductivity (µS/cm)	10,000	<p>Real time telemetry for EC and pH with grab samples at commencement and weekly thereafter when safe to do so and access permits.</p> <p>Daily grab samples if telemetry not available. (The first sample must be taken as soon as practicable following commencement of release)</p>
pH (pH units)	6.5 (minimum) 9.5 (maximum)	

F4	<p>The release of mine affected water to waters from the release points must be monitored at the locations specified in <b>Table F1 (Mine Affected Water Release Points)</b> for each quality characteristic and at the frequency specified in <b>Table F2 (Mine Affected Water Release Limits)</b> and <b>Table F3 (Release Contaminant Trigger Investigation Levels)</b>.</p> <p><i>NOTE: the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition F4 is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.</i></p>
----	--

**Table F3 (Release Contaminant Trigger Investigation Levels)**

Quality Characteristic	Trigger Level (µg/L)	Comment of Trigger Level	Monitoring Frequency
Aluminium	1200	For aquatic ecosystem protection (Interim trigger)	As soon as possible after commencement of active release, when safe access permits, and weekly thereafter.
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline	
Boron	370	For aquatic ecosystem protection, based on SMD guideline	
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline	
Cobalt	90	For aquatic ecosystem protection, based on low reliability guideline	
Copper	3	For aquatic ecosystem protection, based on LOR for ICPMS	
Iron	830	For aquatic ecosystem protection, based on low reliability guideline	
Lead	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Manganese	1900	For aquatic ecosystem protection, based on SMD guideline	
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS	
Molybdenum	34	For aquatic ecosystem protection, based on low reliability guideline	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	
Zinc	8	For aquatic ecosystem protection, based on SMD guideline	
Selenium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Silver	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Vanadium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Ammonia	900	For aquatic ecosystem protection, based on SMD guideline	
Nitrate	1100	For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN	
Total Nitrogen	500	For aquatic ecosystem protection, based on Isaac River Sub-basin Environmental Values and Water Quality Objectives (September 2011)	
Total Phosphorus	50	For aquatic ecosystem protection, based on Isaac River Sub-basin Environmental Values and Water Quality Objectives (September 2011)	
Petroleum hydrocarbons (C6-C9)	20	For aquatic ecosystem protection, based on LOR	
Petroleum hydrocarbons (C10-C36)	100	For aquatic ecosystem protection, based on LOR	
Fluoride	2000	Protection of livestock and short term irrigation guideline	

**NOTES:**

1. *All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.*
3. *SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).*
4. *LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.*

F5	<p>If quality characteristics of the release exceed any of the trigger levels specified in <b>Table F3 (Release Contaminant Trigger Investigation Levels)</b> during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in <b>Table F3 (Release Contaminant Trigger Investigation Levels)</b> and:</p> <ol style="list-style-type: none"> <li>(1) where the trigger values are not exceeded then no action is to be taken; or</li> <li>(2) where the downstream results exceed the trigger values specified in <b>Table F3 (Release Contaminant Trigger Investigation Levels)</b> for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and; <ol style="list-style-type: none"> <li>(a) if the result is less than the background monitoring site data, then no action is to be taken; or</li> <li>(b) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: <ol style="list-style-type: none"> <li>i. details of the investigations carried out; and</li> <li>ii. actions taken to prevent environmental harm.</li> </ol> </li> </ol> </li> </ol> <p><i>NOTE: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with condition F5(2)(b), no further reporting is required for subsequent trigger events for that quality characteristic.</i></p>
F6	<p>If an exceedance in accordance with condition <b>F5(2)(b)</b> is identified, the environmental authority holder must notify the administering authority within <b>twenty-four (24) hours</b> of receiving the result.</p>
F7	<p><b>Mine Affected Water Release Events</b></p> <p>The environmental authority holder must ensure a stream flow gauging station(s) is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in <b>Table F4 (Mine Affected Water Release During Flow Events)</b>.</p>
F8	<p>The release of mine affected water to waters must only take place during periods of natural flow events specified as minimum flow in <b>Table F4 (Mine Affected Water Release During Flow Events)</b> for the release point(s) specified in <b>Table F1 (Mine Affected Water Release Points)</b>. All flow criteria listed in <b>Table F4 (Mine Affected Water Release During Flow Events)</b> for both local receiving waterways and the Isaac River must be met for the duration of any release of mine affected water.</p>
F9	<p>The release of mine affected water must not exceed the 80<sup>th</sup> percentile value of 2000 µS/cm when measured at the monitoring points specified in <b>Table F6 (Receiving Water Upstream Background Sites and Down Stream Monitoring Points)</b> during the release influence period.</p> <p><i>NOTE: Release influence period is the period during which the downstream monitoring points are influenced by mine affected water releases and includes both the duration of release and any lag time between the release point/s and downstream monitoring points.</i></p>
F10	<p>The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in <b>Table F1 (Mine Affected Water Release Points)</b>.</p>



F11	Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.
-----	---

**Table F4 (Mine Affected Water Release During Flow Events)**

Receiving waters	Release Point (RP)	Gauging Station	Gauging Station Easting (GDA64)	Gauging Station Northing (GDA64)	Receiving Water Flow Criteria for Discharge <sup>#</sup> (m <sup>3</sup> /s)	Receiving Water Flow Recording Frequency <sup>^</sup>
Cherwell Creek	RP1	Upper Cherwell Creek	610277	7546803	≥0.5 m <sup>3</sup> /s	Daily during discharge
Isaac River	RP1	Isaac River Deverill*	642119	7548391	≥3 m <sup>3</sup> /s	Continuous (minimum daily) during discharge

\* Low flow releases provide for releases on the tail end of a natural flow event. The low flow release window commences the moment the natural flow recedes below the flow trigger and spans a period of 28 days only.

F12	<p><b>Notification of release event</b></p> <p>The environmental authority holder must notify the administering authority via WaTERS as soon as practicable and no later than <b>twenty-four (24) hours</b> after commencing to release mine affected water to the receiving environment. The release commencement notification must include the submission of written advice to the administering authority of the following information:</p> <ul style="list-style-type: none"> <li>a) release commencement date and time;</li> <li>b) expected release cessation date and time;</li> <li>c) release point(s);</li> <li>d) release rate;</li> <li>e) receiving water(s) including the natural flow rate; and</li> <li>f) any details (including available data) regarding likely impacts on the receiving water(s).</li> </ul>
F13	<p>The environmental authority holder must notify the administering authority via WaTERS as soon as practicable and no later than <b>twenty-four (24) hours</b> after cessation of a release event notified under condition <b>F12</b>. The release cessation notification must include the submission of written advice to the administering authority of the following information:</p> <ul style="list-style-type: none"> <li>a) release cessation date and time;</li> <li>b) receiving water(s) including the natural flow rate; and</li> <li>c) volume of water released.</li> </ul> <p><i>NOTE: Successive or intermittent releases occurring within <b>twenty-four (24) hours</b> of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with conditions <b>F12</b> and <b>F13</b> and <b>F14</b>, provided the relevant details of the release are included within the notification provided in accordance with conditions <b>F12</b> and <b>F13</b> and <b>F14</b>.</i></p>

F14	<p>Within <b>twenty-eight (28) days</b> of notification under condition <b>F13</b>, the environmental authority holder must provide the administering authority via WaTERS the following information in writing:</p> <ul style="list-style-type: none"> <li>a) confirmation of: <ul style="list-style-type: none"> <li>a) the release commencement date and time;</li> <li>b) the release cessation date and time;</li> <li>c) receiving water(s) including the natural flow rate;</li> <li>d) volume of water released;</li> </ul> </li> <li>b) all in-situ and laboratory water quality monitoring results;</li> <li>c) details regarding the compliance of the release with the conditions of <b>Schedule F: Water</b> of this environmental authority (i.e. contamination limits, natural flow, discharge volume);</li> <li>d) whether the release of water resulted in any impacts to the receiving environment; and</li> <li>e) any other matter(s) pertinent to the water release event.</li> </ul>
F15	<p><b>Notification of release event exceedance</b></p> <p>If the release limits defined in <b>Table F2 (Mine Affected Water Release Limits)</b> are exceeded, the environmental authority holder must notify the administering authority within <b>twenty-four (24) hours</b> of receiving the results.</p>
F16	<p>The environmental authority holder must, within <b>twenty-eight (28) days</b> of the notification provided in accordance with condition <b>F15</b>, provide a report to the administering authority via WaTERS detailing:</p> <ul style="list-style-type: none"> <li>a) the reason for the release;</li> <li>b) the location of the release;</li> <li>c) the total volume of the release and which (if any) part of this volume was non-compliant;</li> <li>d) the total duration of the release and which (if any) part of this period was non-compliant;</li> <li>e) all water quality monitoring results;</li> <li>f) any general observations;</li> <li>g) all calculations; and</li> <li>h) any other matters pertinent to the water release event.</li> </ul>
F17	<p><b>Receiving Environment Monitoring and Contaminant Trigger Levels</b></p> <p>The quality of the receiving waters must be monitored at the locations specified in <b>Table F6 (Receiving Water Upstream Background and Downstream Monitoring Points)</b> for each quality characteristic and at the monitoring frequency stated in <b>Table F5 (Receiving Waters Contaminant Trigger Levels)</b> and <b>Table F3 (Release Contaminant Trigger Investigation Levels)</b>.</p>

F18	<p>If quality characteristic(s) of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in <b>Table F5 (Receiving Waters Contaminant Trigger Levels)</b> during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and:</p> <ol style="list-style-type: none"> <li>(1) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or</li> <li>(2) where the downstream results exceed the upstream results, complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: <ol style="list-style-type: none"> <li>(a) details of the investigations carried out; and</li> <li>(b) actions taken to prevent environmental harm.</li> </ol> </li> </ol> <p><i>NOTE: Where an exceedance of a trigger level has occurred and is being investigated in accordance with F18(2) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.</i></p>
-----	---

**Table F5 (Receiving Waters Contaminant Trigger Levels)**

Quality Characteristic	Trigger Level	Monitoring Frequency
pH (pH units)	6.5 to 9.0 (Isaac River Seloh Nolem Downstream, or backup monitoring point)	Real time telemetry for EC and pH with grab samples at commencement and weekly thereafter when safe to do so and access permits.  Daily grab samples if telemetry not available. (The first sample must be taken as soon as practicable following the commencement of the release influence period at the downstream monitoring point)
Electrical Conductivity (µS/cm)	2000 (Isaac River Seloh Nolem Downstream, or backup monitoring point)	
Sulphate (SO <sub>4</sub> <sup>2-</sup> ) (mg/L)	1000 (Isaac River Seloh Nolem Downstream, or backup monitoring point)	Commencement of release and thereafter weekly during release when safe to do so and access permits. (The first sample must be taken as soon as practicable following the commencement of the release influence period at the downstream monitoring point)

**Table F6 (Receiving Waters Upstream Background and Downstream Monitoring Points)**

Monitoring Point (MP)	Receiving Waters Location Description	Easting (GDA64)	Northing (GDA64)
<b>Upstream Background Monitoring Points</b>			
UMP1	Cherwell Creek at upstream gauging station	610019	7547042
<b>Downstream Monitoring Points</b>			
DMP1	Isaac River Seloh Nolem Downstream (SNDS)	652796	7528240
<b>Backup when primary MPs are out of order - Downstream Monitoring Point for Quality</b>			
DMP2	Isaac River Seloh Nolem Upstream (Backup to SNDS)	652226	7532210
DMP3	Isaac River, Downstream of Cherwell Confluence (Backup to SNDS)	627677	7556452

DMP4	Isaac River Deverill Monitoring Station (Backup to SNDS)	642119	7548391
------	--	--------	---------

F19	<p>The overflow of mine affected water to receiving waters is permitted provided that:</p> <ul style="list-style-type: none"> <li>a) monitoring is conducted at the locations detailed within <b>Table F7 (Monitoring Locations for Overflow Releases)</b>;</li> <li>b) the dams are operated in accordance with their design as per the Mine Water Management System required by condition <b>F28</b>; and</li> <li>c) where the results exceed the trigger limits specified in <b>Table F8 (Receiving Waters Contaminant Trigger Levels for Overflow Releases)</b>, an investigation is completed into the potential for environmental harm to occur and a written report is provided to the administering authority in the next annual return of the overflow event outlining: <ul style="list-style-type: none"> <li>a) details of the investigation carried out; and</li> <li>b) actions taken to prevent environmental harm.</li> </ul> </li> </ul> <p><i>NOTE: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with F19(c) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.</i></p>
-----	---

**Table F7 (Monitoring Locations for Overflow Releases)**

Monitoring Point (MP)	Receiving Waters Location Description	Overflow Point	Easting (GDA64)	Northing (GDA64)
<b>Manual Sampling Points</b>				
DMP5	Nine Mile Creek	MIA Dam 1 Spillway and MIA Dam 2 Spillway	610959	7549756
DMP6	Caval Creek, Caval Road	MIA Dam 4 Spillway and MIA Dam 5 Spillway	610335	7550553
<b>Real Time Telemetry Points</b>				
DMP7	Cherwell Creek Middle	MIA Dam 1 Spillway and MIA Dam 2 Spillway	612438	7549750
DMP8	Cherwell Creek, Dysart Road Bridge	MIA Dam 4 Spillway and MIA Dam 5 Spillway	617832	7550980

**Table F8 (Receiving Waters Contaminant Trigger Levels for Overflow Releases)**

Quality Characteristic	Trigger Level	Monitoring Frequency
pH (pH units)	6.5 to 9.0	<p>Real time telemetry for EC and pH with manual samples at commencement and weekly thereafter when safe to do so and access permits.</p> <p>Daily manual samples if telemetry not available. (The first sample must be taken as soon as practicable following commencement of overflow).</p>
Electrical Conductivity (µS/cm)	2000	

F20	<p><b>Receiving Environment Monitoring Program (REMP)</b></p> <p>The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site.</p> <p>For the purposes of the REMP, the receiving environment is the waters of the Cherwell Creek and connected or surrounding waterways within <b>ten (10) kilometres</b> downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.</p>
F21	<p>A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administering authority upon request.</p>
F22	<p>A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions <b>F20</b> and <b>F21</b> must be prepared annually. This report must include the following:</p> <ul style="list-style-type: none"> <li>a) an assessment of background reference water quality;</li> <li>b) the condition of downstream water quality compared against water quality objectives; and</li> <li>c) the suitability of current discharge limits to protect downstream environmental values.</li> </ul>
F23	<p><b>Water reuse</b></p> <p>Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party).</p>

F24	<p><b>Annual water monitoring reporting</b></p> <p>The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return:</p> <ul style="list-style-type: none"> <li>a) the date on which the sample was taken;</li> <li>b) the time at which the sample was taken;</li> <li>c) the monitoring point at which the sample was taken;</li> <li>d) the measured or estimated daily quantity of mine affected water released from all release points;</li> <li>e) the release flow rate at the time of sampling for each release point;</li> <li>f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and</li> <li>g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.</li> </ul>
F25	<p><b>Water Management Plan</b></p> <p>A Water Management Plan must be developed by an appropriately qualified person(s) and implemented for all mining activities.</p>
F26	<p><b>Stormwater and water sediment controls</b></p> <p>An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.</p>
F27	<p>Stormwater, other than mine affected water, is permitted to be released to waters from:</p> <ul style="list-style-type: none"> <li>a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition <b>F26</b>; and</li> <li>b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with condition <b>F25</b>, for the purpose of ensuring water does not become mine affected water.</li> </ul>

F28	<p><b>Mine Water Management System</b></p> <p>The environmental authority holder must implement to the satisfaction of the administering authority, an integrated Mine Water Management System (MWMS) which shall as a minimum address:</p> <ul style="list-style-type: none"> <li>a) runoff from all mine areas and catchments draining into the MWMS, including runoff into mine pits;</li> <li>b) transfer of mine water between storages;</li> <li>c) mine water demands, including the reuse of mine water in plant operations and dust suppression;</li> <li>d) all mine water process inputs and losses, including evaporation losses and losses or recycling of extracted water from belt filter press;</li> <li>e) water quality;</li> <li>f) design storage allowance for the adequate containment of contaminated runoff and pump-out of pits during wet seasons;</li> <li>g) controlled discharges to remain compliant with all environmental authority conditions;</li> <li>h) uncontrolled discharges from the MWMS to the receiving environment; and</li> <li>i) annual updating of the water balance model with mine monitoring data including: <ul style="list-style-type: none"> <li>a) rainfall;</li> <li>b) actual dam volumes;</li> <li>c) raw water demand;</li> <li>d) water quality;</li> <li>e) actual storage capacity of dams;</li> <li>f) mine water transfer operations;</li> <li>g) controlled releases; and</li> <li>h) quality and quantity of uncontrolled releases.</li> </ul> </li> </ul>
RR1	<p>Conditions F20 to F22 do not apply if the environmental authority holder is a participant of the FRREMP.</p>
RR2	<p>The environmental authority holder must notify the administering authority in a written statement within twenty (20) business days of ceasing to be a participant of the FRREMP. The written statement must detail how the environmental authority holder is going to fulfil the requirements of conditions F20 to F22.</p>

Schedule G: Structures	
Condition number	Condition
G1	<p><b>Assessment of consequence category</b></p> <p>The consequence category of any structure must be assessed by a suitably qualified and experienced person, in accordance with the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i>, at the following times:</p> <ul style="list-style-type: none"> <li>a) prior to the design and construction of the structure, if it is not an existing structure; or</li> <li>b) prior to any change in its purpose or the nature of its stored contents.</li> </ul>
G2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
G3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i> .
G4	<p><b>Design and construction of a regulated structure</b></p> <p>Conditions <b>G5</b> to <b>G9</b> inclusive do not apply to existing structures.</p> <p><i>NOTE: Construction of a dam includes modification of an existing dam – see definitions.</i></p>
G5	<p>All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i>.</p> <p><i>NOTE: Certification of design and construction may be undertaken by different persons.</i></p>
G6	Construction of a regulated structure is prohibited unless the environmental authority holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this environmental authority.
G7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i> , and must be recorded in the Register of Regulated Structures.



G8	<p>Regulated structures must:</p> <ul style="list-style-type: none"> <li>a) be designed and constructed in accordance with and conform to the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i>;</li> <li>b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: <ul style="list-style-type: none"> <li>a) floodwaters from entering the regulated dam from any watercourse or drainage line; and</li> <li>b) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.</li> </ul> </li> <li>c) for regulated dams associated with a failure to contain – seepage, have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.</li> </ul>
G9	<p>Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:</p> <ul style="list-style-type: none"> <li>a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and</li> <li>b) construction of the regulated structure is in accordance with the design plan.</li> </ul>
G10	<p><b>Operation of a regulated structure</b></p> <p>Operation of a regulated structure, except for an existing structure, is prohibited unless the environmental authority holder has submitted to the administering authority:</p> <ul style="list-style-type: none"> <li>a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition <b>G6</b>;</li> <li>b) a set of 'as constructed' drawings and specifications;</li> <li>c) certification of those 'as constructed drawings and specifications' in accordance with condition <b>G9</b>;</li> <li>d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan;</li> <li>e) the requirements of this environmental authority relating to the construction of the regulated structure have been met;</li> <li>f) the environmental authority holder has entered the details, required under this environmental authority, into the Register of Regulated Structures; and</li> <li>g) there is a current operational plan for the regulated structures.</li> </ul>

G11	<p>For existing structures that are regulated structures:</p> <p>a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the environmental authority holder must submit to the administering authority within <b>twelve (12) months</b> of the commencement of this condition a copy of the certified system design plan including that structure; and</p> <p>b) there must be a current operational plan for the existing structures.</p>
G12	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
G13	<p><b>Mandatory Reporting Level</b></p> <p>Conditions <b>G14</b> to <b>G17</b> inclusive only apply to regulated structures which have not been certified as low consequence category for 'failure to contain – overtopping'.</p>
G14	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that, during routine inspections of that dam, it is clearly observable.
G15	The environmental authority holder must, as soon as practical and within <b>forty-eight (48) hours</b> of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
G16	The environmental authority holder must immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
G17	The environmental authority holder must record any changes to the MRL in the Register of Regulated Structures.
G18	<p><b>Design Storage Allowance</b></p> <p>The environmental authority holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to <b>1 July</b> of each year.</p>
G19	By <b>1 November</b> of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
G20	The environmental authority holder must notify the administering authority as soon as possible and within <b>forty-eight (48) hours</b> of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on <b>1 November</b> of any year.

G21	The environmental authority holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on <b>1 November</b> of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
G22	<b>Annual inspection report</b>  Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G23	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
G24	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i> .
G25	The environmental authority holder must: a) within <b>twenty (20) business days</b> of receipt of the annual inspection report, provide to the administering authority: a) the recommendations section of the annual inspection report; and b) if applicable, any actions being taken in response to those recommendations; and b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the environmental authority holder, provide this to the administering authority within <b>ten (10) business days</b> of receipt of the request.
G26	<b>Transfer arrangements</b>  The environmental authority holder must provide a copy of any reports, documentation and certifications prepared under this environmental authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

G27	<p><b>Decommissioning and rehabilitation</b></p> <p>Dams must not be abandoned but be either:</p> <ul style="list-style-type: none"> <li>a) decommissioned and rehabilitated to achieve compliance with condition <b>G28</b>; or</li> <li>b) be left in-situ for a beneficial use(s) provided that: <ul style="list-style-type: none"> <li>c) it no longer contains contaminants that will migrate into the environment; and</li> <li>d) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and</li> <li>e) the administering authority, the environmental authority holder and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).</li> </ul> </li> </ul>
G28	<p>After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria:</p> <ul style="list-style-type: none"> <li>a) the landform is safe for humans and fauna;</li> <li>b) the landform is stable with no subsidence or erosion gullies for at least three (3) years;</li> <li>c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated</li> <li>d) not allowing for acid mine drainage; or</li> <li>e) there is no ongoing contamination to waters (including groundwater);</li> <li>f) rehabilitation is undertaken in a manner such that any actual or potential acid sulphate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the <i>Instructions for the treatment and management of acid sulfate soils (2001)</i>;</li> <li>g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class;</li> <li>h) for land that is not being cultivated by the landholder: <ul style="list-style-type: none"> <li>a) groundcover, that is not a declared pest species is established and self-sustaining</li> <li>b) vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and</li> <li>c) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the mining activity(ies).</li> </ul> </li> <li>i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within 3 months of mining activities being completed.</li> </ul>
G29	<p><b>Register of Regulated Structures</b></p> <p>A Register of Regulated Structures must be established and maintained by the environmental authority holder for each regulated structure.</p>
G30	<p>The environmental authority holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated structure is submitted to the administering authority.</p>

G31	The environmental authority holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition <b>G10</b> and <b>G11</b> has been achieved.
G32	The environmental authority holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
G33	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the environmental authority holder, or their delegate, as being accurate and correct.
G34	The environmental authority holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.
G35	<p><b>Transitional arrangements</b></p> <p>All existing structures that have not been assessed in accordance with either, the Manual or the former <i>Manual for Assessing Hazard Categories and Hydraulic Performance of Dams</i>, must be assessed and certified in accordance with the Manual within <b>six (6) months</b> of amendment of the environmental authority adopting this schedule.</p>
G36	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in <b>Table G1 (Transitional Requirements for Existing Structures)</b> , depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
G37	<p><b>Table G1 (Transitional Requirements for Existing Structures)</b> ceases to apply for a structure once any of the following events has occurred:</p> <ul style="list-style-type: none"> <li>a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or</li> <li>b) it has been decommissioned; or</li> <li>c) it has been certified as no longer being assessed as a regulated structure.</li> </ul>
G38	Certification of the transitional assessment required by <b>G35</b> and <b>G36</b> (as applicable) must be provided to the administering authority within <b>six (6) months</b> of amendment of the environmental authority adopting this schedule.

**Table G1 (Transitional Requirements for Existing Structures)**

<b>Transition period required for existing structures to achieve the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)</i></b>			
<b>Compliance with Criteria</b>	<b>High</b>	<b>Significant</b>	<b>Low</b>
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70% to ≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50 to ≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing)	Within 5 years or as per compliance requirements (e.g. TEP timing)	Review consequence assessment every 5 years.

Schedule H: Sewage Treatment	
Condition number	Condition
H1	<p><b>Treated sewage effluent</b></p> <p>The cumulative total daily peak design capacity of the sewage treatment plant/s must not exceed 1500 equivalent persons (EP). Small package plants and/or septic systems, each with a daily peak design capacity less than 21EP, are not included in the cumulative total daily peak design capacity.</p>
H2	<p>Treated sewage effluent must not be directly released from the sewage treatment plant/s to any waters.</p> <p><i>Note: 'waters' does not include structures associated with the mine affected water management system.</i></p>
H3	<p>Treated sewage effluent may be:</p> <ul style="list-style-type: none"> <li>a) released to the mine affected water management system for mixing with other mine affected water;</li> <li>b) released to land via a sub-surface infiltration trench;</li> <li>c) irrigated or sprayed for dust suppression or firefighting or evaporation; or</li> <li>d) removed as waste.</li> </ul>
H4	<p>Treated sewage effluent that is released in accordance with condition <b>H3(a)</b> and has mixed with other mine affected water must be managed as mine affected water in accordance with the conditions of this environmental authority.</p>
H5	<p>Treated sewage effluent that is released in accordance with condition <b>H3(b)</b> or <b>H3(c)</b> must be carried out in a manner such that:</p> <ul style="list-style-type: none"> <li>a) vegetation is not damaged;</li> <li>b) there is no surface ponding of effluent; and</li> <li>c) there is no run-off of treated sewage effluent to waters.</li> </ul>
H6	<p>Treated sewage effluent released in accordance with condition <b>H3(a)</b> or <b>H3(b)</b> or <b>H3(c)</b> from any sewage treatment plant that has a daily peak design capacity of greater than 21EP must be monitored:</p> <ul style="list-style-type: none"> <li>a) at the point where the treated sewage effluent is released from the sewage treatment plant/s;</li> <li>b) for the quality characteristics specified in <b>Table H1 (Treated Sewage Effluent Monitoring Requirements)</b>; and</li> <li>c) at the frequency specified in <b>Table H1 (Treated Sewage Effluent Monitoring Requirements)</b>.</li> </ul>

**Table H1 (Treated Sewage Effluent Contaminant Release Limits)**

Quality Characteristic	Units	Monitoring Frequency
5-day Biochemical Oxygen Demand (uninhibited)	mg/L	Monthly
pH	pH units	Monthly
Thermotolerant coliforms	Colonies per 100mL	Monthly
Total nitrogen	mg/L	Monthly
Total phosphorus	mg/L	Monthly

H7	<p>If treated sewage effluent is being released in accordance with condition <b>H3(c)</b>:</p> <ul style="list-style-type: none"> <li>a) the results of monitoring in accordance with condition <b>H6</b> must not exceed the release limits specified in <b>Table H2 (Treated Sewage Effluent Contaminant Release Limits)</b>; and</li> <li>b) the release must not cause spray drift or over spray to any sensitive place or commercial place.</li> </ul>
H8	<p>If the release limits specified in <b>Table H2 (Treated Sewage Effluent Contaminant Release Limits)</b> are exceeded in accordance with condition <b>H7(a)</b>, the environmental authority holder must notify the administering authority in accordance with conditions <b>A7</b> and <b>A8</b>.</p>

**Table H2 (Treated Sewage Effluent Contaminant Release Limits)**

Quality Characteristic	Release Limit	Units	Limit Type
5-day Biochemical Oxygen Demand (uninhibited)	50	mg/L	Maximum
pH	6.0 to 9.0	pH units	Range
Thermotolerant coliforms, based on the average of a minimum number of five samples collected	1000	Colonies per 100mL	Maximum



Schedule I: Groundwater	
Condition number	Condition
I1	<p><b>Groundwater</b></p> <p>The holder of this environmental authority must not release contaminants to groundwater.</p>
I2	<p><b>Groundwater Monitoring and Management Program</b></p> <p>A Groundwater Monitoring and Management Program must be:</p> <ul style="list-style-type: none"> <li>a) developed by an appropriately qualified person; and</li> <li>b) implemented by the environmental authority holder for all stages of mining activities.</li> </ul>
I3	<p>The Groundwater Monitoring and Management Program required by condition <b>I2</b> must:</p> <ul style="list-style-type: none"> <li>a) identify potential groundwater impacts due to the mining activities;</li> <li>b) include a site conceptual groundwater model;</li> <li>c) describe the sampling and monitoring methodology;</li> <li>d) detail an appropriate quality assurance and quality control program;</li> <li>e) provide the process for notifying the administering authority and investigating exceedances in accordance with conditions <b>I4-I5</b>.</li> </ul>
I4	<p><b>Groundwater monitoring</b></p> <p>Groundwater quality and standing water levels must be monitored:</p> <ul style="list-style-type: none"> <li>a) at the locations and at the frequencies specified in <b>Table I1 – Groundwater Monitoring Locations and Frequency</b>; and</li> <li>b) for the quality characteristics specified in <b>Table I2 – Groundwater Trigger Levels</b>.</li> </ul>
I5	<p>If the groundwater contaminant trigger levels defined in <b>Table I2 (Groundwater Trigger Levels)</b> are exceeded on three (3) consecutive monitoring occasions, the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within <b>twenty (20) business days</b> of receiving the analysis results.</p>

I6	<p>The Groundwater Monitoring and Management Program must be reviewed by <b>31 November 2023</b>, and thereafter every <b>two (2) years</b>, by an appropriately qualified person. The review report must:</p> <ul style="list-style-type: none"> <li>a) analyse the results of groundwater monitoring to: <ul style="list-style-type: none"> <li>i. describe any impacts to groundwater levels and groundwater quality due to the mining activity;</li> <li>ii. determine trends in groundwater levels and groundwater quality;</li> </ul> </li> <li>b) assess the adequacy of the Groundwater Monitoring and Management Program; and</li> <li>c) provide recommendations to the environmental authority holder to address the findings of parts (a) and (b) of the review.</li> </ul>
I7	<p>Within <b>twenty (20) business days</b> of receiving the review report, required by condition <b>I6</b>, the environmental authority holder must provide to the administering authority:</p> <ul style="list-style-type: none"> <li>a) the review report;</li> <li>b) if applicable, any actions being taken by the environmental authority holder to address the recommendations of the review report; and</li> <li>c) if action is not being taken to address a recommendation, the environmental authority holder must provide justification for not taking action.</li> </ul>
I8	<p>Annual groundwater monitoring data must be submitted to the administering authority via WaTERS by 30 September each calendar year.</p>
I9	<p><b>Bore construction</b></p> <p>The construction, management, maintenance and decommissioning of groundwater monitoring bores must be undertaken in a manner that:</p> <ul style="list-style-type: none"> <li>a) prevents contaminants entering the groundwater;</li> <li>b) ensures the integrity of the bores to obtain representative groundwater samples from the target aquifer; and</li> <li>c) maintains the hydrogeological environment within the aquifer.</li> </ul>
<u>I10</u>	<p><u>The environmental authority holder will determine interim groundwater trigger values for inclusion in Table I2 (Groundwater Trigger Values) to replace all TBC values when a data set of 8 samples becomes available and supply them to the department via an amendment application.</u></p>

**Table I1 (Groundwater Monitoring Locations and Frequency)**

Monitoring Location	Aquifer Type	Easting (GDA64)	Northing (GDA64)	Monitoring Frequency
<b>Interpretation Bores</b>				
PZ08-S	Alluvial	611411	7549709	Quarterly
<b>Compliance Bores</b>				
PZ01	Permian	609841	7560145	Annually
PZ04	Permian	610731	7555326	Annually
PZ07-D	Permian	612465	7550704	Annually
PZ09	Permian	614326	7548822	Annually
PZ11-D	Permian	616791	7547600	Annually
PZ12-D	Permian	610712	7557219	Annually
PZ12-S	Permian	610721	7557164	Annually
MB19CVM09A	Alluvium	612448	7550698	Annually
MB19CVM02P	Permian	611424	7549705	Annually
<a href="#">MB19CVM07T</a>	<a href="#">Tertiary Basalt</a>	<a href="#">611464</a>	<a href="#">7552357</a>	<a href="#">Quarterly</a>
<a href="#">MB19CVM08P</a>	<a href="#">MCM Coal – H Seam</a>	<a href="#">611465</a>	<a href="#">7552346</a>	<a href="#">Quarterly</a>
<a href="#">MB20CVM01A</a>	<a href="#">Alluvium</a>	<a href="#">609915</a>	<a href="#">7560272</a>	<a href="#">Quarterly</a>
<a href="#">MB20CVM04T</a>	<a href="#">Tertiary Basalt</a>	<a href="#">608193</a>	<a href="#">7559651</a>	<a href="#">Quarterly</a>
<a href="#">MB20CVM05P</a>	<a href="#">MCM Coal - D Seam</a>	<a href="#">608198</a>	<a href="#">7559646</a>	<a href="#">Quarterly</a>
<a href="#">MB20CVM06A</a>	<a href="#">Tertiary</a>	<a href="#">610802</a>	<a href="#">7548890</a>	<a href="#">Quarterly</a>
<a href="#">CVMMB16_01</a>	<a href="#">Tertiary</a>	<a href="#">611144</a>	<a href="#">7558320</a>	<a href="#">Quarterly</a>
<a href="#">CVMMB16_02</a>	<a href="#">MCM Coal – H Seam</a>	<a href="#">611135</a>	<a href="#">7558315</a>	<a href="#">Quarterly</a>
<a href="#">CVMPB07_02</a>	<a href="#">MCM Coal - _ Seam</a>	<a href="#">609915</a>	<a href="#">7560272</a>	<a href="#">Quarterly</a>

### Table I2 (Groundwater Trigger Levels)

Quality																	
Characteristic	Units	PZ08-S	PZ01	PZ04	PZ07-D	PZ09	PZ11-D	PZ12-S	PZ12-D	MB19 CVM09A	MB20 CVM01A	MB19 CVM07T	MB20 CVM04T	MB20 CVM06A	MB20 CVM05P		
Groundwater Level	RL	Monitored for interpretative reasons only – no triggers apply				Fluctuations in excess of 2m per year excluding changes from				pumping of licenced bores							
	pH units		6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.3-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.3-8.5	6.5-8.5		
	µS/cm		18,410-17,950	16,560-16,440	16,000	21,180-20,570	16,000	16,000 <sup>+</sup>	16,000 <sup>+</sup>	8,910	8,910	8,910	12,510	22,990	20,020		
	mg/L		610-625	494-507	1,280-1300				398-418	318	318	318	456	2,110 <sup>+</sup>	892 <sup>+</sup>		
	mg/L			0.24-0.19						0.055	0.055	0.055	0.055	0.055 <sup>+</sup>	0.055 <sup>+</sup>		
	mg/L									0.009	0.009	0.009	0.009	0.009	0.009 <sup>+</sup>		
	mg/L		0.013	0.013 <sup>+</sup>	0.013	0.013	0.013	0.013 <sup>+</sup>	0.013 <sup>+</sup>	0.013	0.013	0.013	0.013	0.013	0.013 <sup>+</sup>		
	mg/L		0.90-0.83	11-8.5	1.6-1.4				1.2	0.70	0.70	1.6	10 <sup>+</sup>	1.5 <sup>+</sup>			
	mg/L									0.0006	0.0006	0.0006	0.0006	0.0006 <sup>+</sup>	0.0006 <sup>+</sup>		
	mg/L		0.034	0.034 <sup>+</sup>	0.034	0.034	0.034	0.034 <sup>+</sup>	0.034 <sup>+</sup>	0.034	0.034	0.034	0.034	0.034 <sup>+</sup>	0.034 <sup>+</sup>		
	mg/L		0.011	0.011 <sup>+</sup>	0.011	0.011	0.011	0.011 <sup>+</sup>	0.011 <sup>+</sup>	0.011	0.011	0.011	0.011	0.011 <sup>+</sup>	0.011 <sup>+</sup>		
	mg/L									0.001	0.001	0.001	0.001	0.001 <sup>+</sup>	0.001 <sup>+</sup>		
	µg/L										20	20	20	20	20 <sup>+</sup>	20 <sup>+</sup>	
	µg/L		100	100	100	100	100	100	100		100	100	100	100	100 <sup>+</sup>	100 <sup>+</sup>	
of 71																	
Department of Environment and Science																	
76																	

Quality Characteristic	Units	Trigger Levels			
		MB19CVM08P	CVMMB16_01	CVMMB16_02	CVMMB07_02
Groundwater Level	RL	Fluctuations in excess of 2m per year excluding changes from pumping of licenced bores			
pH	pH units	TBC*			
EC	µS/cm				
Sulphate	mg/L				
Dissolved Aluminium	mg/L				
Dissolved Antimony	mg/L				
Dissolved Arsenic	mg/L				
Dissolved Iron	mg/L				
Dissolved Mercury	mg/L				
Dissolved Molybdenum	mg/L				
Dissolved Selenium	mg/L				
Dissolved Silver	mg/L				
Total recoverable hydrocarbons C6-C10	µg/L				
Total recoverable hydrocarbons >C10-C40	µg/L				

NOTES:

1. Fewer than the recommended 18 data points have been used to derive these trigger levels, therefore the adopted trigger levels are considered as interim and may require subsequent revision.

*\* Trigger levels have not been developed as there are fewer than 8 data points available. Trigger levels will be developed once a dataset of >8 samples is available.*

**END OF CONDITIONS**

## Definitions

Key terms and/or phrases used in this document are defined in this section. Environmental authority holders should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

**Acceptance criteria** means the measures by which the actions implemented to rehabilitate the land are deemed to be complete. The acceptance criteria indicate the success of the rehabilitation outcome or remediation of areas which have been significantly been disturbed by the mining activities. Acceptance criteria may include information regarding:

- a) vegetation establishment, survival and succession;
- b) vegetation productivity, sustained growth and structure development;
- c) fauna colonisation and habitat development;
- d) ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- e) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- f) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- g) resilience of vegetation to disease, insect attack, drought and fire; and
- h) vegetation water use and effects on ground water levels and catchment yields.

**Acid mine drainage (AMD)** means any contaminated discharge emanating from a mining operation formed through a series of chemical and biological reaction, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining activity.

**Acid rock drainage** means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining activity.

**Administering authority** is the agency or department that administers the environmental authority provisions under the *Environmental Protection Act 1994*.

**Airblast overpressure** means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dBL).

**Alternative arrangement** in relation to a sensitive place or a commercial place, means:

- a) A written agreement:
  - i. between the environmental authority holder and a third party;
  - ii. that identifies a particular type(s) of environmental nuisance;
  - iii. about the way in which the particular environmental nuisance impact(s) will be dealt with;
  - iv. at a particular location; and
  - v. for a defined period of time.
- b) An alternative arrangement must make clear to the third party that by entering in to the agreement that:
  - i. their place will be excluded as a sensitive place or commercial place; and
  - ii. the consequences of exclusion as a sensitive place or commercial place.

Note: An alternative arrangement may include, but is not limited to, details of the nuisance abatement measures to be implemented, provision of alternative accommodation, or agreement between the parties that the location will not be considered a sensitive place or commercial place for the purposes of the Environmental Authority, for the duration of the alternative arrangement. The written agreement may be in any form, with some examples being a lease, or an agistment, or a conduct and compensation agreement under the *Mineral Resources Act 1989*.

**Annual exceedance probability or AEP** means the probability that at least one event in excess of a particular magnitude will occur in any given year.

**Annual inspection report** means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan):

- a) against recommendations contained in previous annual inspections reports;
- b) against recognised dam safety deficiency indicators;
- c) for changes in circumstances potentially leading to a change in consequence category;
- d) for conformance with the conditions of this authority;
- e) for conformance with the 'as constructed' drawings;
- f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems); and
- g) for evidence of conformance with the current operational plan.

**ANZECC** means the Australian and New Zealand Guidelines for Fresh Marine Water Quality 2000

**Appropriately qualified person** means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods or literature.

**Assessed or assessment** by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

- a) exactly what has been assessed and the precise nature of that determination;
- b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

**Associated works** in relation to a dam, means:

- a) operations of any kind and all things constructed, erected or installed for that dam; and
- b) any land used for those operations.

**Authority** means an environmental authority or a development approval.

**Bed and banks** for a waters, river, creek, stream, lake, lagoon, pond, swamp, wetland or dam means land over which the water of the waters, lake, lagoon, pond, swamp, wetland or dam normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed and banks that is from time to time covered by floodwater.

**Beneficial use** in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

- a) of benefit to that owner in that it adds real value to their business or to the general community;
- b) in accordance with relevant provisions of the *Environmental Protection Act 1994*;
- c) sustainable by virtue of written undertakings given by that owner to maintain that dam; and
- d) the transfer and use have been approved or authorised under any relevant legislation.

**Biosolids** means the treated and stabilised solids from sewage.

**Blasting** means the use of explosive materials to fracture:

- a) rock, coal and other minerals for later recovery; or
- b) structural components or other items to facilitate removal from a site or for reuse.

**Bulk rubber** means tyres, conveyor belt, and other similar rubber waste.

**Certification** in relation to regulated structures, means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* or this environmental authority, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

**Certifying, certify or certified** have a corresponding meaning as 'certification' in relation to regulated structures.



**Chemical** means:

- a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994 (Commonwealth)*; or
- b) a dangerous good under the dangerous goods code; or
- c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 1997*; or
- d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or
- e) any substance used as, or intended for use as:
  - i. a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or
  - ii. a surface active agent, including, for example, soap or related detergent; or
  - iii. a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or
  - iv. a fertiliser for agricultural, horticultural or garden use; or
- f) a substance used for, or intended for use for:
  - i. mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
  - ii. manufacture of plastic or synthetic rubber.

**Commercial place** means:

- a) A work place that is used as:
  - i. an office; or
  - ii. a place of business; or
  - iii. a place used for commercial purposes.
- b) Despite paragraph (a), the following places are not commercial places:
  - i. subject to paragraph (c), a place that is the subject of an alternative arrangement; or
  - ii. places that are part of the mining activity; or
  - iii. employees accommodation or public roads; or
  - iv. a property owned or leased by one or more of the environmental authority holders, or a related company, whether or not it is subject to an alternative arrangement.
- c) A place that is the subject of a current alternative arrangement in relation to a particular type(s) of environmental nuisance, is not a commercial place for the purposes of that type(s) of environmental nuisance, however remains a commercial place for the purpose of other types of environmental nuisances.

**Consequence** in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

**Consequence category** means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*.

**Construction or constructed** in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

**Contaminate** means to render impure by contact or mixture.

**Contaminated** means the substance has come into contact with a contaminant.

**Contaminant** can be

- a) a gas, liquid or solid; or
- b) an odour; or
- c) an organism (whether alive or dead), including a virus; or
- d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
- e) a combination of contaminants.

**Control measure** means any action or activity that can be used to prevent or eliminate a hazard or reduce it to an acceptable level.

**Dam** means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

**Dam crest volume** means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).

**Design plan** is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

**Design storage allowance or DSA** means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

**Designer** for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

**Disturbance** of land includes:

- a) compacting, removing, covering, exposing or stockpiling of earth;
- b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;
- c) carrying out mining within a watercourse, waterway, wetland or lake;
- d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;
- e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be removed after the mining activity has ceased; or
- f) releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of disturbance:

- a) areas off lease (e.g. roads or tracks which provide access to the mining lease);
- b) areas previously disturbed which have achieved the rehabilitation outcomes;
- c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be left by agreement with the landowner; or
- e) disturbance that pre-existed the grant of the tenure.

**Dwelling** means any of the following structures or vehicles that is principally used as a residence:

- a) a house, unit, motel, nursing home or other building or part of a building; or
- b) a caravan, mobile home or other vehicle or structure on land; or
- c) a water craft in a marina.

**Effluent** means treated waste water released from sewage treatment plants.

**Emergency action plan** means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to downstream communities and the implementation of protection measures. The plan must require dam owners to annually update contact.

**End of pipe** means the location at which water is released to waters or land.

**Environmental authority** means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

**Environmental authority holder** means the holder of this environmental authority.

Environmental offset has the meaning in section 7 of the *Environmental Offsets Act 2014*.

**Environmentally relevant activity** means an environmentally relevant activity as defined under section 18 of the *Environmental Protection Act 1994*.

**EPBC** means the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

**ERC decision** means a decision made by the administering authority under section 300 of the *Environmental Protection Act 1994* about the estimated rehabilitation cost for a resource activity.

**ERC period** for the estimated rehabilitation cost for a resource activity, means:

- a) if a PRCP schedule applies for the activity, the period of between 1 and 5 years stated in the application for an ERC decision under section 298(2)(b); or
- b) if the activity is a petroleum activity that is an ineligible ERA, other than a petroleum activity to which a plan of operations applies, or the activity relates to a 1923 Act petroleum tenure granted under the *Petroleum Act 1923*, the period of between 1 and 5 years stated in the ERC decision about the estimated rehabilitation cost; or
- c) if a plan of operations applies for the activities, the plan period for the plan of operations; or
- d) otherwise, the total period during which the resource activity is likely to be carried out under the environmental authority for the activity.

**Estimated rehabilitation cost (ERC)** for a resource activity, see section 300(2) of the *Environmental Protection Act 1994*.

**Existing authority** has the meaning in section 94 of the *Environmental Offsets Act 2014*.

**Existing structure** means a structure that was in existence prior to 24 October 2014.

**Extreme storm storage** means a storm storage allowance determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority.

**Floodwater** means water overflowing, or that has overflowed, from waters, river, creek, stream, lake, pond, wetland or dam onto or over riparian land that is not submerged when the watercourse or lake flows between or is contained within its bed and banks.

**Flowable substance** means matter or a mixture of materials that can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

**Foreseeable future** is the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptable probability of failure before that time.

**General waste** means waste other than regulated waste.

**Hazardous waste** means a substance, whether liquid, solid or gaseous that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm.

**Holder**, for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

**Hydraulic performance** means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*.

**Inert waste** means bricks, pavers, ceramics, concrete, glass, steel, or similar waste that does not biodegrade or decompose.

**Infrastructure** means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include other facilities required for the long-term management of mining impacts or the protection of potential resources. Such other facilities include dams, waste rock dumps, voids, or ore stockpiles and buildings as well as other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the mining leases or the background land owner.

**L<sub>Aeq</sub>, adj, 15 mins** means the A-weighted sound pressure level of a continuous steady sound (adjusted for tonal character) that within a 15 minute period has the same mean square sound pressure of a sound that varies with time.

**L<sub>A1</sub>, adj, 15 mins** means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 15-minute measurement period, using Fast response.

**Lake** includes:

- a) lagoon, swamp or other natural collection of water, whether permanent or intermittent; and
- b) the bed and banks and any other element confining or containing the water.

**Land** in the "land schedule" of this document means land excluding waters and the atmosphere.

**Land use** describes the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

**Landfill** means land used as a waste disposal site for lawfully putting solid waste on the land.

**Levee** means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

**Low consequence dam** means any dam that is not a high or significant consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014)* (EM635).

**Mandatory reporting level or MRL** means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014)* (EM635) published by the administering authority.

**Manual** means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014)* (EM635) published by the administering authority.

**Matters of state environmental significance or MSES** has the meaning in schedule 2 of the *Environmental Offsets Regulation 2014*.

**Maximum extent of impact** means the total, cumulative, residual extent and duration of impact to a prescribed environmental matter that will occur over a project's life after all reasonable avoidance and reasonable on-site mitigation measures have been, or will be, undertaken.

**mbgl** means metres below ground level.

**Mechanically reprocessing waste** includes mechanically crushing, milling, grinding, shredding or sorting waste, whether or not for the purpose of recycling the waste.

**mg/L** means milligrams per litre.

**Mine affected water** means the following types of water:

- a) means the following types of water:
  - i. pit water, tailings dam water, processing plant water;
  - ii. water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity;
  - iii. rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;
  - iv. groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
  - v. groundwater from the mine's dewatering activities; or
  - vi. a mix of mine affected water (under any of paragraphs i to v) and other water.
- b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:
  - i. land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or
  - ii. land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:
    - a. areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site;
    - b. evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff; or
  - iii. both.

**Mineral** means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes:

- a) clay if mined for use for its ceramic properties, kaolin and bentonite;
- b) foundry sand;
- c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil there from;
- d) limestone if mined for use for its chemical properties;
- e) marble;
- f) mineral oil or gas extracted or produced from shale or coal by in situ processes;
- g) peat;
- h) salt including brine;
- i) shale from which mineral oil may be extracted or produced;
- j) silica, including silica sand, if mined for use for its chemical properties; or
- k) rock mined in block or slab form for building or monumental purposes;

But does not include:

- a) living matter;
- b) petroleum within the meaning of the *Petroleum Act 1923*;
- c) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form; or
- d) water.

**Mining activities** means the activities:

- a) authorised as per the definition in section 110 of the *Environmental Protection Act 1994*; and
- b) all environmentally relevant activities authorised under this environmental authority.

**Minor Infrastructure** means low impact infrastructure ancillary to mining activities including culverts, monitoring bores, disturbance for rehabilitation activities; low impact telecommunication infrastructure, electricity infrastructure, fences, environmental monitoring infrastructure, pipelines, access tracks and roads for light vehicles, constructed and operated for the purpose of the mining activities.

**Modification or modifying** (see definition of 'construction').

**Natural flow** means the flow of water through waters caused by nature.

**Notice of election** has the meaning in section 18(2) of the *Environmental Offsets Act 2014*.

**Noxious** means harmful or injurious to health or physical wellbeing.

**Offensive** means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

**Operational plan** includes:

- a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance); and
- b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

**Overflow** is the flow of water via dam spillways to receiving waters from dams containing water that is deemed to be mine affected water.

**Peak particle velocity or ppv** means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mm/s).

**Prescribed environmental matters** has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significant listed in schedule 2 of the *Environmental Offsets Regulation 2014*.

**Protected area** means

- a) a protected area under the *Nature Conservation Act 1992*; or
- b) a marine park under the *Marine Parks Act 1992*; or
- c) a World Heritage Area.

**Progressive rehabilitation** means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

**Receiving environment**, in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

- a) a watercourse;
- b) groundwater;
- c) land; and
- d) sediments.

**Receiving waters** means the waters into which this environmental authority authorises releases of mine affected water.

**Reference site (or analogue site)** may reflect the original location, adjacent area or another area where rehabilitation success has been completed for a similar biodiversity. Details of the reference site may be as photographs, computer generated images and vegetation models etc.



**Register of Regulated Structures** includes:

- a) date of entry in the register;
- b) name of the dam, its purpose and intended/actual contents;
- c) the consequence category of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*;
- d) dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
- e) name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;
- f) for the regulated dam, other than in relation to any levees –
  - i. the dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
  - ii. coordinates (latitude and longitude in GDA64) within five metres at any point from the outside of the dam including its storage area
  - iii. dam crest volume (megalitres);
  - iv. spillway crest level (metres AHD).
  - v. maximum operating level (metres AHD);
  - vi. storage rating table of stored volume versus level (metres AHD);
  - vii. design storage allowance (megalitres) and associated level of the dam (metres AHD);
  - viii. mandatory reporting level (metres AHD);
- g) the design plan title and reference relevant to the dam;
- h) the date construction was certified as compliant with the design plan;
- i) the name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
- j) details of the composition and construction of any liner;
- k) the system for the detection of any leakage through the floor and sides of the dam;
- l) dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
- m) dates when recommendations and actions arising from the annual inspection were provided to the administering authority; and
- n) dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

**Regulated dam** means any dam in the significant or high consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority.

**Regulated structure** includes land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

**Regulated waste** is defined in the *Environmental Protection Regulation 2008*.

**Rehabilitation** means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

**Rejects** means:

- a) breaker rejects; or
- b) coarse rejects; or
- c) mid/fine size rejects; or
- d) tailings that have been dewatered; or
- e) any combination of rejects (under any of paragraphs a to d).

**Reprocessing** includes

- a) recycling; or
- b) mechanical treatment; or
- c) thermal treatment; or
- d) biological treatment; or
- e) chemical treatment.

**Representative** means a sample set that covers the variance in monitoring or other data due to either natural changes or operational phases of the mining activities.

**Residual void** means an open pit resulting from the removal of ore and/or waste rock that will remain following the cessation of all mining activities and completion of rehabilitation processes.

**Resource activity** is an activity that involves

- a) a geothermal activity; or
- b) a GHG storage activity; or
- c) a mining activity; or
- d) a petroleum activity.

**Restricted Surface Disturbance Area** means disturbance is restricted to minor infrastructure and exploration activities in the area.

**Saline drainage** is the movement of waters, contaminated with salt(s), as a result of the mining activity.

**Scheme fund** means the scheme fund established under section 24 of the *Mineral and Energy Resources (Financial Provisioning) Act 2018*.

**Self-sustaining** means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

**Sensitive place** means:

- a) Any of the following:
  - i. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
  - ii. a motel, hotel or hostel; or
  - iii. an educational institution; or
  - iv. a medical centre or hospital; or
  - v. a protected area; or
  - vi. a public park or gardens.
- b) Despite paragraph (a), the following places are not sensitive places:
  - i. subject to paragraph (c), a place that is the subject of an alternative arrangement; or
  - ii. a mining camp (i.e. accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority), whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the environmental authority holders for the mining project, or a related company; or
  - iii. a property owned or leased by one or more of the environmental authority holders, or a related company, whether or not it is subject to an alternative arrangement.
- c) A place that is the subject of a current alternative arrangement in relation to a particular type(s) of environmental nuisance, is not a sensitive place for the purposes of that type(s) of environmental nuisance, however remains a sensitive place for the purpose of other types of environmental nuisances.

**Sewage** means the used water of persons to be treated at a sewage treatment plant.

**Significant residual impact** has the meaning in section 8 of the *Environmental Offsets Act 2014*.

**Spillway** means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges from the dam, normally under flood conditions or in anticipation of flood conditions.

**Stable** in relation to land, means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.

**Stormwater** means all surface water runoff from rainfall.

**Structure** means dam or levee.

Sub surface disturbance means the excavation below natural ground level for the removal of overburden and coal and does not mean excavation associated with water management infrastructure or other infrastructure.

**Suitably qualified and experienced person** in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- a) for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- b) for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

Surface disturbance means all disturbance, including excavation associated with water management structures or other infrastructure, other than sub – surface disturbance.

**System design plan** means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

**Tailings** means fines from mineral processing that have not been dewatered.

**The Act** means the *Environmental Protection Act 1994*.

**Void** means any constructed, open excavation in the ground.

**Waste** as defined in section 13 of the *Environmental Protection Act 1994*.

**Waste activities** means receiving, storing, disposing, treating, or reprocessing wastes, and does not include composting.

**Waste and resource management hierarchy** has the meaning given by section 9 of the *Waste Reduction and Recycling Act 2011*.

**Water quality** means the chemical, physical and biological condition of water.

**Watercourse** has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means a river, creek or stream in which water flows permanently or intermittently:

- a) in a natural channel, whether artificially improved or not; or
- b) in an artificial channel that has changed the course of the watercourse.

Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

**Waters** includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

**WaTERS** means the Water Tracking and Electronic Reporting System.

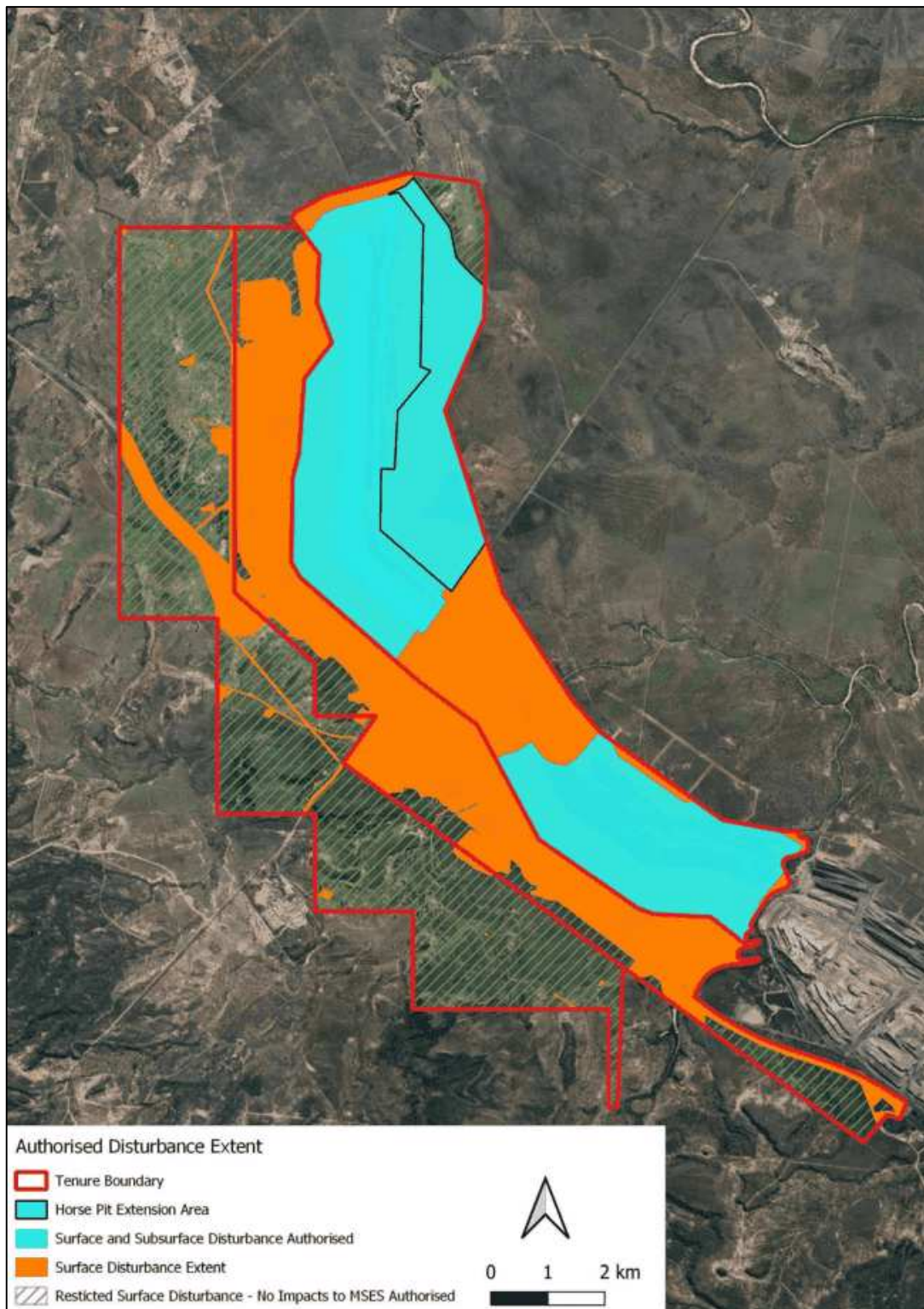
**Wet season** means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination, this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

**µg/L** means micrograms per litre.

**µS/cm** means microsiemens per centimetre.

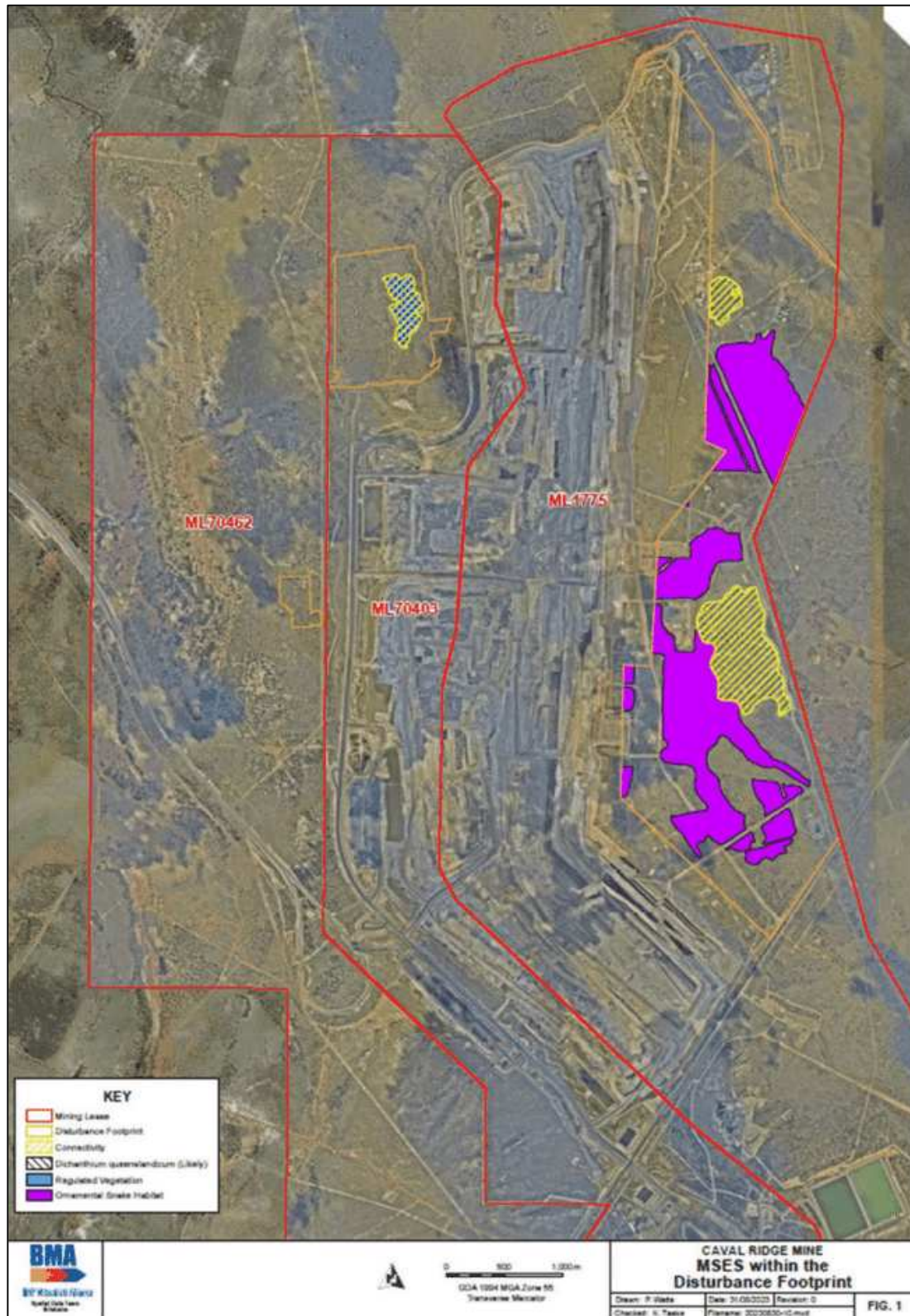
**END OF DEFINITIONS**

Appendix 1 –Approved Caval Ridge Mine Disturbance Extent





Appendix 2 – Location of Authorised Significant Residual Impacts



**END OF ENVIRONMENTAL AUTHORITY**