

Department of Environment and Science  
Business Centre Coal  
PO Box 3028  
Emerald Qld 4720

By email: [CRMining@des.qld.gov.au](mailto:CRMining@des.qld.gov.au)

6 July 2023

## Submission on the proposed Environmental Authority for the Vulcan South coal mine

Thank you for the opportunity to make this submission on the proposed Environmental Authority (**EA**) and Progressive Rehabilitation and Closure Plan (**PRCP**) for the Vulcan South coal mine (**the Project**).

Environmental Advocacy in Central Queensland (**EnvA**) is a Central Queensland association with an interest in ensuring that all land use is sustainable and does not significantly impact on the environment. We are particularly concerned about the risks associated with coal mining, coal seam gas and climate change.

EnvA believes that opening new or expanding existing coal and gas projects:

- is contrary to meeting Australia's emission targets and Queensland's emission targets,
- is likely to result in irreparable damage to our local landscape and result in stranded assets,
- will put our local community at further risk of extreme weather such as increasing the intensity and frequency of storms, floods, droughts and bushfires,
- will damage our significant coastal resources including our beaches and the Great Barrier Reef through storm surge and increased coral bleaching events,
- will further degrade wildlife habitats of state and national significance through both habitat loss and climate change, and
- rarely take into consideration the views of Traditional Owners and local communities who are concerned about protecting their land from fossil fuel development.

## The Vulcan South coal mine

Queensland Coking Coal Pty Ltd and Qld Coal Aust No.1 Pty Ltd (**the Proponent**) proposes to develop an open cut coal mining development and a smaller highwall mining trial area. The project would be located approximately 33 km south-east of Moranbah, within the Isaac Regional Council in Central Queensland.

The Project Mining Lease Area (MLA 700073) covers an area of approximately 3800 ha and is situated over multiple underlying prerequisite tenures (EPC 1732, 1233 and 1234).

The project disturbance footprint is approximately 1745 ha.

The proposed Project will operate for approximately nine years, including primary rehabilitation works, following a two-year construction period. Approximately 13.5 Mt of ROM coal will be



extracted consisting predominately of hard coking coal (with an incidental thermal secondary product) at a rate of up to 1.95 million tonnes per annum (Mtpa).

The project includes:

- three separate open cut mines identified as Vulcan North, Vulcan Main and Vulcan South,
- a highwall mining trial involving the establishment of four highwall mining benches across a number of hillsides,
- a mine infrastructure area,
- a modular coal handling and preparation plant,
- a rail loop and train load-out facility,
- out-of-pit waste rock dumps,
- ancillary infrastructure including offices, roads and surface water management infrastructure, and
- the realignment of the existing Saraji Road and services infrastructure.

## **Summary of concerns and recommendations**

EnvA recommends that:

- the application for an EIS be refused due to insufficient justification, inappropriate assessment process and the significant environmental impacts this Project will cause.

Alternatively,

- the assessment approach is reconsidered and that you require an EIS for the entire Vulcan Complex project,
- the decision on the Project is delayed until the proponent has referred the Project for assessment under the EPBC Act and a decision is made on the assessment process and any required conditions for the Matilda Pit and ancillary infrastructure, and the Vulcan South components of the Vulcan Complex project,
- the Proponent be required to provide a thorough assessment of the cumulative impacts of remnant vegetation clearing and disturbance on threatened species and communities,
- the Proponent be required outline a more appropriate rehabilitation plan which reinstates critical habitat and movement corridors for all threatened species which will be displaced,
- the Proponent be required to prepare a detailed and justified offset management strategy which adequately compensates the significant loss of threatened species and communities, and the fragmentation of movement corridors prior to any environmental approval,
- the Proponent be required to provide an assessment of their predicted scope 1, 2 and 3 GHG emissions, so that these can be properly assessed given the current policy of the Queensland Government to reduce GHG emissions and develop a draft Greenhouse Gas Abatement Plan that provides best practice mitigation measures for GHG emissions including:
  - Identification of mechanisms, and committing to taking action, to reduce Scope 1 and 2 emissions including a credible plan to achieve zero emissions by 2050,
  - An assessment of the Project's compatibility with the emissions reduction required to meet Queensland and Australia's emissions targets,

- An assessment of the impacts of climate change on all matters of State and National Environmental Significance, and
- A meaningful analysis of the economic, social and environmental cost-benefit of this project to justify the project proceeding given the significant contribution to emissions to accelerating climate change induced weather events.
- the Proponent is required to provide additional information in relation to the impact of the changed surface water flows on the ecological values in the surrounding and downstream areas, and an assessment of the cumulative impact given the numerous other coal mines in proximity.
- the Proponent provides further justification of how this project ‘stacks up’ on environmental, social and economic considerations.

Further background and grounds for our specific concerns and recommendations are outlined below.

### **Assessment process**

This is a coal proposal which is evidently using the loopholes in the Queensland assessment processes to avoid proper environmental scrutiny.

The Proponent, is progressively expanding the Vulcan Coal Complex in steps which the Department of Environment and Science (DES) has decided do not meet the Queensland government guidelines to require an EIS based on the triggers listed in Appendix B to the [Criteria for environmental impact statements for resource projects under the Environmental Protection Act 1994 \(EP Act\)](#).

EnvA is of the strongest view that this proposal must be either refused, or at least required to do a thorough environmental and social impact assessment, and prepare an Environmental Impact Statement (**EIS**).

The Vulcan Complex project has been separated into three separate projects:

#### Vulcan Coal Mine

In 2021, the Queensland Government granted a mining lease to Vulcan Coal Mine to produce 1.95 Mtpa of coal, without requiring an EIS.

The Proponent was granted an EA under the EP Act by the Queensland government without the Proponent required to prepare an EIS. EnvA assumes that this was because the volume of coal to be extracted was under the threshold of extracting more than 2 Mtpa.

This mine was referred and assessed under the EPBC Act and was approved with conditions by the former government’s Environment Minister Sussan Ley. Minister Ley [published a statement of reasons](#) for making her decision to approve the project. The statement of reasons says the project will result in the clearance of over 200 hectares of koala habitat and adversely affect habitat critical to the survival of the species. Habitat fragmentation, direct mortality and vehicle collisions were identified as impacts.

Minister Ley approved the project on the condition that the Proponent make a payment of \$35,000 to fund a Bowen Basin Koala conservation program. Other conditions put in place to mitigate impacts on koalas prohibit the Proponent from clearing outside of the project area and require the establishment of a koala habitat offset area. These conditions are unlikely to contribute any meaningful conservation outcomes for the species that would balance the loss of habitat from the coal mine.

### Vulcan Coal Mine Matilda Pit and ancillary infrastructure

The proposed project is to add a coal handling and preparation plant, train load-out facility, dedicated rail loop, a small open pit on ML700060. Ancillary infrastructure will also be required, which includes product stockpiles, updated water management infrastructure, access roads and several minor amendments to existing infrastructure layouts.

This proposed mine extension footprint will cover approximately 93 ha of the 407.46 ha mining lease area. The Proponent acknowledges that this mine expansion may change the magnitude of impacts to Matters of National Environmental Significance (MNES), specifically identifying listed threatened species and communities and hence has referred the project for assessment under the EPBC Act.

The Department of Climate Change, Energy the Environment and Water (DCCEEW) is currently assessing this project as a controlled action by preliminary documentation with further information required.

At this same time, the Queensland government recently approved the amendment of the Environmental Authority (EA0002912) and the Progressive Rehabilitation and Closure Plan (PRCP) for the Vulcan Coal Mine to accommodate the infrastructure proposal.

### Vulcan South Coal mine

In 2022, a mining lease application (MLA 700073) and EA (A-EA-NEW-100265025) for the Vulcan South coal mine was lodged. The Proponent plans to produce 13.5 million tonnes of ROM coal at a rate of 1.95 Mtpa. The DES made the decision that this mine was not required to produce an EIS which EnvA assumes the decision was based on 1.95 Mtpa being just under the 2Mtpa threshold.

DES requested further information from the proponent including an explanation on the degree to which the Vulcan South Project (VSP) and the Vulcan Complex Project (VCP) are integrated [also referred to as the Vulcan Coal Mine]. A greater description of the relatedness and integration of the VSP and VCP was requested. Further, the justification is required as to why the applicant considered the VSP and VCP as separate projects, requiring separate environmental authorities.

The [response from the proponent](#) was that “Vulcan South (VS) and Vulcan Coal Mine (VCM) are independent projects, approximately 10km apart. VS construction is planned to be completed at a similar time to the cessation of activities at VCM. If there is an opportunity to commence the highwall trial during the VS construction period, ROM coal extracted from the trial may be handled through the VCM infrastructure. Dependant on timing, personnel, plant and equipment, may be transferred from VCM to VS”.

It appears from the information provided that the Proponent has again applied for the approval for the ancillary infrastructure is to be transferred to the Vulcan South Project. Alternatively, they are applying for a duplication of the ancillary infrastructure.

Irrespective of whether this is a project that is using the coal volume threshold to avoid addressing the assessment processes that the Department of Environment and Science is using in splitting the project into separate components, or if it is a genuinely stand-alone project, the provided information indicates that there will be significant impacts on matters of national and state environmental significance which have not been adequately assessed.

For example, the [supporting information for the EA application](#) states that over 1000ha of koala habitat and over 70ha of greater glider habitat will be cleared. Other threatened species that either occur or are likely to occur on the site include the ornamental snake, squatter pigeon, short-beaked echidna, northern quoll, white-throated needletail and rufous fantail will be impacted.

EnvA also notes that this project has not yet been referred for assessment under the EPBC Act which is essential given that the first two components of the 'Vulcan Complex' project have been referred, and this third component impacting on a far greater area of threatened ecosystems and species as identified in the request for further information response. We understand that the proponent will refer the project for federal assessment, but it appears that the Proponent is again attempting to secure or significantly progress the lax Queensland government approval process before referring it for assessment under the EPBC Act.

### The Vulcan Complex as a whole

To the Queensland government, the Proponent presents these as three separate resource projects, despite presenting them as a single Vulcan Complex project on their [website](#). This results in the avoidance of an EIS because of the manner in which DES applies the EIS thresholds in the EP Act.

Sections 143 and 228 of the EP Act describe the circumstances under which a resource activity must or may be assessed by EIS. The EP Act requires that the standard criteria must be considered when making this decision about whether to require an EIS. The Guideline then seeks to provide assistance to the decision makers in discharging that duty.

The Guideline expressly states that the triggers (or the EIS thresholds set at 2 million tonnes of coal per year) at Appendix B should not be treated as the determining factor when making decisions about whether an EIS should be required.

The Guideline also states that "Any application for a resource project that appears to be seeking to avoid an EIS through a staged development would be closely examined and, consistent with the standard criteria (Appendix A), an EIS may be required for the entire project, even though none of the individual stages would trigger an EIS by themselves."

It is clear to EnvA that the Proponent is using loopholes in the Queensland Government's assessment process. It is also clear that the Queensland government is not appropriately considering the standard criteria when making decisions about whether an EIS is required. The DES could require an EIS for the entire project, however the DES has chosen not to apply a basic level of environmental scrutiny and instead allowed the Proponent to avoid scrutiny through its staged development of the project.

### **Recommendation**

EnvA recommends that you reconsider the assessment approach and require an EIS for the entire project. Alternatively, the decision on the Project must be delayed until the proponent has referred the Project for assessment under the EPBC Act and a decision is made on the assessment process and any required conditions for the Matilda Pit and ancillary infrastructure, and the Vulcan South components of the Vulcan Complex project.

### **Terrestrial ecology**

The area proposed to be directly disturbed by the Project is 1745ha, primarily comprising development of the Project's open-cut mining area, subsidence from the highwall mining trial, and the mine infrastructure.

This level of disturbance will result in significant impacts on the terrestrial ecology of the site through a combination of direct impacts, fragmentation and loss of habitat quality through disturbance, subsidence and changes to the water table.

### Vegetation

The Proponent has identified 11 regional ecosystems across the study area of which two are listed as 'endangered' and one is listed as 'of concern' under the EPBC Act.

Specifically, vegetation communities listed as Matters of National Environmental Significance within the Project area were:

- 124.0 ha of “Brigalow (*Acacia harpophylla* dominant and co-dominant)” (RE 11.3.1, 11.4.8 and 11.4.9),
- 25.7 ha of “Poplar Box Grassy Woodland on Alluvial Plains” (RE 11.3.2), and
- 1.3 ha of “Semi-evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions” (RE 11.10.8).

In addition, seven of the regional ecosystems are Matters of State Environmental Significance which lie within the Project Area:

- 146.2 ha of **endangered** regional ecosystems (11.4.8 and 11.4.9),
- 96.7 ha of **of concern** regional ecosystems (11.3.2 and 11.10.8),
- 34.2 ha of regrowth **endangered** and **of concern** ecosystems (11.32 and 11.4.9)
- 267.4 ha of riparian vegetation (REs 11.3.2, 11.3.7, 11.3.25, 11.3.27b, 11.4.8, 11.5.3, 11.5.9b, 11.9.2, 11.10.1, 11.10.3 and 11.10.8)

These vegetation communities have been subject to historic clearing for agriculture and mining. The cumulative impacts of the removal of threatened vegetation communities must be considered clearly inappropriate.

### Fauna

This Project will have some impact on many native fauna species through the loss and fragmentation of important habitat. Of significance is the impact to the habitat of conservation significant species including:

- 107.5 ha of ornamental snake (*Denisonia maculata*) habitat,
- 71.1 ha of greater glider (*Petauroides volans*) habitat,
- 1023.6 ha of koala (*Phascolarctos cinereus*) habitat,
- 1,400 ha of squatter pigeon (*Geophaps scripta scripta*), and
- 190.4 ha of northern quoll (*Dasyurus hallucatus*) habitat.

The Bowen Basin has a highly cleared and fragmented environment. It is therefore critical to acknowledge the high functional significance of all vegetation on the project site, including non-remnant and regrowth vegetation that provides linkages for wildlife movement between areas of remnant vegetation.

### Cumulative impacts on threatened species and communities

The pre-clearing cover for the Isaac-Comet Downs subregion is estimated at approximately 2,693,397 ha compared to 574,501 ha of remnant vegetation (Accad *et al.* 2021). 78.7% of vegetation cover has already been cleared in this Brigalow Belt subregion which means that any habitat clearing and disturbance is highly likely to impact on threatened species and ecosystems.

The Proponent acknowledges that the Project adjoins several existing coal mines, but determines that clearing of over 1000 ha of habitat will not cause any cumulative impacts. The assessment of the cumulative impacts on threatened species and communities is amazingly pathetic as are the proposed mitigation measures outlined in table 5.3 of the Terrestrial Ecological Assessment.

In the last two years, the koala and greater glider have been reclassified from vulnerable to endangered, largely due to the loss and fragmentation of habitat, and the impacts of climate change and the consequent severe weather and fire events. With less than 574,500 hectares of fragmented remnant vegetation in the Isaac-Comet Downs subregion, along with the contribution of this Project to greenhouse gas emissions (see emissions section below), a more thorough assessment of the cumulative impacts is required before even more of our Queensland ecosystems and species are added to the endangered list, or worse, they make the extinct list.

## Recommendation

That the Project be rejected on the basis of that the Project is clearly unacceptable in respect to the direct and cumulative impacts on threatened species and communities. In the alternative, the Proponent must be required to provide a thorough assessment of the cumulative impacts of remnant vegetation clearing and disturbance and outline a more appropriate rehabilitation plan which reinstates critical habitat and movement corridors.

## Offsets

Twenty-six species of plants and animals listed as threatened species under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) were flagged by database searches as being potentially present in the region. The following four matters of national environmental significance (MNES) were detected during surveys of the site are likely to experience significant residual impacts from the project:

- 124.0 ha of “Brigalow (*Acacia harpophylla* dominant and co-dominant)”;
- 1023.6 ha of koala (*Phascolarctos cinereus*) habitat
- 1,400 ha of squatter pigeon (*Geophaps scripta scripta*); and
- 71.1 ha of greater glider (*Petauroides volans*) habitat.

Additional impacts on the ornamental Snake and Northern Quoll are possible but not likely. Neither species was recorded on site, and the habitat present is suboptimal for both species. It is proposed that environmental offsets are to be provided in accordance with the EPBC Act Environmental Offsets Policy 2012 for each of the above four matters prior to the commencement of Vulcan South.

The significant biodiversity impacts are proposed to be dealt with through offsets as set out in the [‘MNES Biodiversity Offsets Strategy’](#).

For Matters of State Environmental Significance, the proponent has identified the following matters that will be impacted by the Project and subject to offsets in accordance with Queensland’s *Environmental Offsets Act 2014*:

- 25.6 ha of the of concern regional ecosystem, 11.3.2;
- 58.3 ha of regional ecosystems 11.3.25, 11.5.3, 11.5.9b, 11.9.2, 11.10.1 and 11.10.3 located within a defined distance from the defining banks of a relevant watercourse;
- Short-beaked echidna (*Tachyglossus aculeatus*);
- Glossy black cockatoo (*Calyptorhynchus lathami*); and
- Common death adder (*Acanthophis antarcticus*)

EnvA is concerned that no offset area has been proposed for the project. The Proponent has only outlined various criteria that it must adhere to when picking a suitable offset location but is yet to outline any specific actions or areas for which this will take place.

Offsets are typically of minimal success, short duration, and certainly do not address the cumulative impacts from the loss and disturbance of habitat in areas such as the Bowen Basin.

## Recommendation

That the Proponent is required to prepare a detailed and justified offset management strategy which adequately compensates the significant loss of threatened species and communities, and the fragmentation of movement corridors prior to any environmental approval.



## Greenhouse gas emissions and climate change

There is no mention of GHG emissions, including scope 1, 2 or 3 carbon dioxide and methane emissions in the assessment documentation lodged by the Proponent, meaning the impact of GHG emissions have not been considered by the Proponent and cannot therefore be assessed properly by DES.

It is estimated that the Project would produce an average of at 2.59 million tonne of carbon dioxide (CO<sub>2-e</sub>) greenhouse gas (GHG) emissions over the life of the mine.<sup>1</sup>

### The impact of GHG emissions in Queensland

For the Queensland Government to achieve their GHG emission reduction targets, the government has stated that approximately 2.5Mt CO<sub>2-e</sub> annually must be cut from Queensland's emission output before 2030. This equates to a remaining total carbon budget of 20Mt, or an annual reduction of 312,500t CO<sub>2-e</sub> every year between 2023 and 2030.

The approval of the Project would account for over 2.59 million tonnes of Queensland's entire remaining emissions budget for the 2030 target.

The emissions from the project would be inconsistent with the Queensland and Federal emissions reductions targets and Australia's nationally determined contribution under the Paris Agreement and is contrary to the public interest.

The Queensland Government accepts the science of climate change and supports the Paris Agreement.<sup>3</sup>

The accretion of GHGs in the atmosphere as a result of human activities has already caused changes in the climate system with tangible impacts, including in Queensland:<sup>2</sup>

- exacerbation of heatwaves;
- long-term increase in extreme fire weather and length of the fire season;
- changes in rainfall patterns resulting in severe flooding events;
- mass bleaching of the Great Barrier Reef; and
- worsening drought conditions.

As discussed above, 2.5Mt CO<sub>2-e</sub> must be cut from Queensland's annual emissions inventory between now and 2030.<sup>3</sup>

In the *Waratah Coal land court* decision<sup>4</sup>, it was found that the impacts of climate change in Queensland are already felt, for example as follows:

*"In Queensland, there have been more heatwaves, a long-term increase in extreme fire weather, increased likelihood and severity of heavy rainfall, mass coral bleaching of the Great Barrier Reef, increased ocean acidity, sea level rises along coast and islands, and worsening drought conditions."*

Of particular importance to this Project is the disproportionate cost that the Queensland community will experience due to increased GHG emissions.

The relationship between GHG emissions and climate change in Australia was recognised in the 2021 State of the Environment Report, which stated that:

*"Warming of the Australian climate, and associated changes in the climate system, are*

---

<sup>1</sup> Determined using an estimate of for Scope 3 emissions is coal volume x 0.192 (coking coal) = total Co2e

<sup>2</sup> Ian Cresswell, Terri Janke and Emma Johnston, *Australia State of the Environment Report 2021: Overview* (2021) 82-93.

<sup>3</sup> Queensland Climate Action Plan - Underway and still to do' (last updated 27 April 2023) <<https://www.des.qld.gov.au/climateaction/theplan/qld-climate-action-plan>>.

<sup>4</sup> *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors* (No 6) [2022] QLC 21 [615].



*driven by increased concentrations of greenhouse gases in the atmosphere. Changes to the climate are inevitable, based on greenhouse gases that have already been emitted, but further changes in the second half of the 21st century will depend on the level of future global emissions.”<sup>5</sup>*

The economic benefit of any development is also vulnerable to climate change impacts itself, including the risk that it may not be able to operate at optimal levels for its full expected lifespan due to factors including increased frequency of extreme weather events and changes to water availability as a result of prolonged droughts. The risks of any fossil fuel based-development’s assets becoming stranded will likely continue to increase throughout the development’s lifespan as a result of global policies and international action on climate change.

The financial, legal, and fiscal risks and costs of climate change have also been well articulated. Further emissions of GHGs into the atmosphere will cause financial, legal, and fiscal risks and costs, which must be set off against any economic benefits of any development that will further contribute to the accretion of GHGs into the atmosphere.

### **The impacts of the continued accretion of GHG emissions in the atmosphere**

The scientific consensus is clear that expansion of fossil fuel production must be stopped in order to reduce global GHG emissions and avoid the potentially catastrophic impacts of unmitigated global warming and climate change.<sup>6</sup>

197 countries, including Australia, agreed under the Paris Agreement to limit ‘the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.’<sup>7</sup>

The Paris Agreement also recognises (our emphasis) ‘the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge.’

To meet a 2°C carbon budget, a very rapid phase out of all fossil fuel usage globally is required by 2050 at the latest. The 1.5°C budget is smaller, requiring an even more rapid global phase out of fossil fuel usage.

In May 2021, the International Energy Agency (IEA) called for an end to new fossil fuel investments in order to achieve Net-Zero emissions by 2050 in alignment with the aims of the Paris agreement, stating “*If governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now – from this year.*”<sup>7</sup> (Faith Birol, IEA Executive Director). The IEA’s *Net Zero by 2050* report concluded that “*there is no need for investment in new fossil fuel supply*” under a Net-Zero by 2050 scenario.<sup>8</sup>

Since February 2021, United Nations Secretary General Antonio Guterres has repeatedly called for the cancellation of all new coal projects globally,<sup>9</sup> stating that existing coal use must be phased out in the OECD by 2030, and in the rest of the world by 2040 in order to achieve the aims of the Paris climate agreement.<sup>10</sup>

### **Recommendation**

EnvA recommends that the Proponent provides an assessment of their predicted scope 1, 2 and 3 GHG emissions, so that these can be properly assessed given the current policy of the Queensland Government to reduce GHG emissions. Further the Proponent should develop a draft Greenhouse Gas Abatement Plan that provides best practice mitigation measures for GHG

---

<sup>5</sup> Ian Cresswell, Terri Janke and Emma Johnston, *Australia State of the Environment Report 2021: Overview* (2021) .

<sup>6</sup> UN Environment Programme, *Production Gap Report 2020* (Report, 2 December 2020); Intergovernmental Panel on Climate Change, *Climate Change 2022: Mitigation of Climate Change – Technical Summary* (Report, 2022) 52.

<sup>7</sup> UN Framework Convention on Climate Change, Adoption of the Paris Agreement, 21<sup>st</sup> Conference of the Parties, Paris (2015) art 2(1)(a).

emissions including:

- Identification of mechanisms, and committing to taking action, to reduce Scope 1 and 2 emissions including a credible plan to achieve zero emissions by 2050,
- An assessment of the Project's compatibility with the emissions reduction required to meet Queensland and Australia's emissions targets,
- An assessment of the impacts of climate change on all matters of State and National Environmental Significance, and
- A meaningful analysis of the economic, social and environmental cost-benefit of this project to justify the project proceeding given the significant contribution to emissions to accelerating climate change induced weather events.

## **Ground and Surface Water**

The Project is located within the Isaac River sub-basin of the greater Fitzroy Basin and in the headwaters of the Boomerang, Hughes, Barrett and Harrow Creek catchments. The confluence of Boomerang and Hughes Creek occurs approximately 10 km to the east of the Project. There is the potential to impact to all the environmental values reliant on creek water if the hydrology of the streams will be impacted.

Water usage for the Project, which is estimated to be 1,250 ML per annum, will be met by the following:

- the existing pipeline supply;
- trucking in of water, including recycled water, from off-site sources; and
- an expression of interest in unallocated groundwater that may be available in local nonalluvial aquifers.

In order to meet this demand, the Proponent states that it would source water from an external supplier or via water sharing with other mines, however, there is no evidence that this amount of water is available, or whether or not it would impact on other water users if utilised for this Project (Section 2.9, Supporting Information). In times of drought, most mines in the region are likely to be short of water so water sharing is unlikely to be viable when most needed. It is unacceptable for the Proponent to speak in generalisations about how they intend to use unallocated groundwater supplies, excess water sources should be preserved for other uses in the Basin area, such as for agriculture.

Overall, it is difficult to ascertain accurately the impacts to surface and groundwater because the Vulcan Complex Project has been assessed in a fractured nature, consisting of three separate assessments of the mine, the Vulcan Complex, Vulcan North and the current Vulcan South Project.

The Project involves open cut mining resulting in the following impacts to surface water:

- erosion and sedimentation;
- uncontrolled water releases;
- mine drainage from waste rock emplacements;
- final rehabilitated pit landform seepage and overflow; and
- litter, waste and spills.

No impacts to GDEs are acknowledged within 1km from the Project due to a lack of connectivity between surface and groundwater systems (Section 5.2.3). However, these are neither plotted in figures, nor are the potential impacts of subsidence on them adequately explored. It is concluded that there is no valid aquatic or terrestrial GDEs within the maximum drawdown zones and impacts on GDEs are considered very unlikely. However, even a subsidence of 10 m would be sufficient to kill most trees, as vegetation relies on moisture within the top ~10 m.

Sediment water contamination (runoff from spoil and incomplete rehabilitated areas) will be managed in accordance with the site Erosion and Sediment Control Plan (**ESCP**). The proposed monitoring regime of water quality in the storages and sediment dams is also inadequate. More frequent monitoring is warranted and should be included in the ESCP. The risks to groundwater include dewatering of bores and potential direct or indirect drawdown of aquifers including the Isaac River alluvium. These impacts will disproportionately impact agricultural uses on the land, as was discussed in the nearby Olive Downs Project, Winchester South and Peak Downs projects because of the implications on farming activities in the Bowen Basin area that relies upon groundwater from the Isaac River.

It has been widely shown that groundwater can play an important role in supporting the riparian ecosystems even in ephemeral rivers, and a more detailed investigation of combined surface water groundwater impacts is merited.<sup>8</sup> Cumulative impacts to groundwater are only cursorily assessed, in that the risk of offsite release of mine affected water has been categorised as 'low risk' on the basis that there will be a less than 0.2% increase on groundwater drawdown due to the Project compared to the effects of historical mining in the Isaac River catchment (section 5.1.1).

This assessment does not allow for an accurate indication of the true impacts to groundwater in the Bowen Basin region because it does not account for any interconnectedness between the groundwater system. Nor does it consider the fractured assessment process for the Vulcan Mine Complex and the associated cumulative impacts of the project in its entirety. However, the overall changes to groundwater flow, groundwater quality, and regional hydrogeology are not discussed in any detail. It is insufficient to refer to other mining operations in the region and attribute the cumulative impacts to them without acknowledging the additional cumulative role of the Project in disrupting local hydrology, in particular the impacts to the Vulcan Complex in its entirety (Vulcan Main and Vulcan South pits) are not considered.

### **Recommendation**

That the Proponent is required to provide additional information in relation to the impact of the changed surface water flows on the ecological values in the surrounding and downstream areas, and an assessment of the cumulative impact given the numerous other coal mines in proximity.

### **Social and Economic Impacts**

The Proponent falls short in adequately addressing the possible social impacts and lacks evidence that the Project's negative social effects have been avoided or reduced. This inadequacy arises from the Proponents' failure to consider the social costs of exacerbating climate change and its failure to offer strategies to mitigate the Project's climate-related impacts.

This mine will add to global climate change, which is already affecting Central Queensland in the form of increased temperatures. This risks the health of all people in our region, especially outdoor workers and those who have underlying health issues. Those emissions will impact on the health of Queenslanders regardless of where the coal is burned.

Further, the Proponent fails to acknowledge the social impacts of the Project's role in increasing the emissions reduction burden placed on other sectors of Queensland's economy. The cost of emitting greenhouse gases, regardless of where the coal is burned, will impact on Queenslanders.

The Project stands to make a material and avoidable contribution to climate change, which will, in turn, have a variety of serious adverse consequences for Queensland's communities, industries and ecosystems<sup>9</sup>.

---

<sup>8</sup> Ian Cresswell, Terri Janke and Emma Johnston, Australia State of the Environment Report 2021: Overview (2021) 16.

<sup>9</sup> <https://www.theguardian.com/environment/2018/mar/25/hemmed-in-by-big-coal-bad-feeling-is-constantly-hanging-over-us>

The [Queensland Government's position](#) is that "Coal projects in Queensland will continue to be supported as long as they stack up economically, environmentally, and socially". Each project must proceed on its own merits, based on demand and economic viability, and meet the highest environmental and community standards. The application for the Project does not provide a reasonable assessment on which to base a decision that the mine 'stacks up'.

Thank you for the opportunity to make a submission on the environmental authority application for Vulcan South.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Coral Rowston', written in a cursive style.

**Dr Coral Rowston**

Director

Environmental Advocacy in Central Queensland