

SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>9006</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety (QFRS – Central Region)</b>	RELEVANT EIS SECTION	

## DETAILS OF THE ISSUE

### Queensland Ambulance Service (QAS)

- The project has the potential to increase Queensland Ambulance Service (QAS) demand in an area with limited response capacity and lengthy response times, as well as the potential to increase the usage of the helicopter based service and fixed wing aircraft
- The project will require mitigation strategies around the provision of emergency care on site, on-going consultation and information, around the project status and emergency access to ensure a timely and appropriate QAS response
- QAS should be notified of planned exercises, either practical or tabletop, for attendance and participation by QAS, and
- The QAS would seek an opportunity to meet with the Principle, regarding a proposal for the possible formulation and introduction of a Contract for the provision of dedicated paramedical services on site during the construction period and when mine is fully operational.

## PROPONENT RESPONSE

Waratah Coal welcomes the opportunity to discuss on-site emergency strategies with the QAS. Looking at the broader community, the Coordinator-General, in the evaluation of the Alpha Coal Project EIS, has tasked the proponent to:

1. Collaborate with Queensland Health to develop health service related mitigation strategies to address any impacts on the demands on current regional health services provided by Queensland Health, and
2. Provide a fully equipped ambulance and funding to the Barcaldine Regional Council for five years throughout construction and operations, to cover the costs of two paramedics to operate the ambulance (negotiating cost recovery arrangements with other proponents through the Galilee Basin CSIA Roundtable).

As discussed in the *SIMP*, Section 6.1 (refer to *Appendices – Volume 2* of this SEIS), Waratah Coal will welcome the opportunity to participate in the development of health and emergency service strategies for the Alpha area, and will provide financial support as required. However, Waratah Coal is concerned that inadequate attention has been given to emergency response and recommends that strategies for emergency air response be considered. Such a strategy could include fixed wing and/or rotary options, based in Alpha (or possibly centres such as Rockhampton), and would provide services for the mine workforces and local communities (not restricted only to Alpha). Clearly, targeted consultation would be required in developing such a strategy, and at this stage, would benefit from a coordinated approach between various proponents, as recommended by the Coordinator-General.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

<b>SUBMITTER No.</b>	<b>251</b>	<b>ISSUE REFERENCE:</b>	<b>9007 / 4071</b>
<b>SUBMITTER TYPE</b>	Government	<b>TOR CATEGORY</b>	<b>Hazard &amp; Risk</b>
<b>NAME</b>	<b>Dept of Community Safety (QFRS – Central Region)</b>	<b>RELEVANT EIS SECTION</b>	EIS – Accommodation

## DETAILS OF THE ISSUE

### EIS – Accommodation

The majority of the construction and operational workforce, consisting of 2500 mine and rail construction personnel, will be accommodated at the mine accommodation facilities, with approximately 28 employees based in Alpha township. This is a significant increase in population for the area and may result in an increase in QFRS responses to structural fires and emergency incidents.

The accommodation camp will be required to have an Emergency Management Plan to deal with any risks and hazardous situations that may be encountered and, along with QFRS response capabilities to this site, any situation must be able to be effectively managed.

### PROPONENT RESPONSE

Waratah Coal welcomes the opportunity of consulting with the QFRS during the preparation of emergency response procedures.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

<b>SUBMITTER No.</b>	<b>251</b>	<b>ISSUE REFERENCE:</b>	<b>9008 / 4081</b>
<b>SUBMITTER TYPE</b>	Government	<b>TOR CATEGORY</b>	<b>Hazard &amp; Risk</b>
<b>NAME</b>	<b>Dept of Community Safety (QFRS – Central Region)</b>	<b>RELEVANT EIS SECTION</b>	EIS – Risk Assessment

## DETAILS OF THE ISSUE

### EIS – Risk Assessment

As stated in Table 1 – Legislative Framework, the *Fire and Rescue Service Act 1990*, is an applicable Act related to this project and that emergency response procedures will be developed in consultation with the Emergency Services and other related Government Agencies.

QFRS will provide advice and guidance on areas pertaining to emergency response and emergency management during this consultation stage.

### PROPONENT RESPONSE

Waratah Coal welcomes the opportunity of consulting with the QFRS during the preparation of emergency response procedures.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>9009</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety (QFRS – Central Region)</b>	RELEVANT EIS SECTION	

## DETAILS OF THE ISSUE

### Queensland Fire and Rescue Service (QFRS) – State Community Safety Operations

QFRS maintains several prescribed functions under the *Fire and Rescue Service Act 1990*, one of which is to provide an advisory service and undertake other measures to promote fire prevention, fire control and safety and other procedures if a fire or hazardous materials emergency occurs. As an advice agency we also have jurisdiction to provide input into the design of a building or structures fire safety systems. This advice must be in accordance with the Sustainable Planning Regulation 2009 – schedule seven, table one, for building work assessable against the *Building Act 1975*. The QFRS is aware that development approval for this project is being sought via the legislative framework outlined for approvals in volume one, chapter two – Project Approvals. We understand the methodology and objectives of the EIS process and we acknowledge our role in the consultation process. We remain aware that we may provide the proponent with advice regard hazard and risk management.

We understand the proponent will comply where necessary with relevant Queensland statutory legislation and will implement mine safety and health management systems so as to mitigate hazard and risk. We also note the following as stated in chapter four:

- Implementation of emergency response plans detailing mitigation strategies to achieve specific outcomes as outlined in the State Planning Policy (SPP) 1/03 – Guideline for Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
- All dangerous goods, explosives and hazardous substances used, stored and handled in accordance with relevant legislation
- Development of safety management plans and emergency response procedures in consultation with state and regional emergency service providers and provide an adequate level of training to staff who will be tasked with emergency management activities
- Hazard analysis and risk assessment undertaken in accordance with AS/NZS ISO 31000:2009 Risk Management – Principles and guidelines and HB203:2006 Environmental Risk Management Principles and Processes, and
- Compliance where necessary with the *Fire and Rescue Service Act 1990*.

Otherwise having reviewed the document QFRS is satisfied with the content and provisions contained within.

## PROPONENT RESPONSE

Waratah Coal welcomes the opportunity of consulting with the QFRS during the preparation of emergency response procedures.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>420</b>	ISSUE REFERENCE:	<b>9016</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Health &amp; Safety / Hazard &amp; Risk</b>
NAME	<b>Queensland Health</b>	RELEVANT EIS SECTION	Vol 3, 16.4.5

### DETAILS OF THE ISSUE

QPS notes the proponents comment relating to the increases in DIDO traffic and the expectation that Emergency Services will increase the demand for those Emergency Services.

QPS requests engagement with the proponent in respect to the level of resources required and available to meet the demand for special service escort activities for over dimensional and excess mass loads. The location of camps along the rail route will result in blackspot areas where police communications will be deficient.

The QPS requests engagement with the proponent on the availability of adequate police mobile communications to improve response and officer safety for incidents in the project areas.

### PROPONENT RESPONSE

Waratah Coal welcomes the opportunity to discuss escort requirements, and communication issues in relatively remote areas, with the QPS. Additional details on the loads, routes and timeframes are required before these discussions can meaningfully occur.

SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>9017 / 13017</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Project Approvals / Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety (QFRS – Central Region)</b>	RELEVANT EIS SECTION	EIS – Project Approvals

### DETAILS OF THE ISSUE

#### EIS – Project Approvals

QFRS notes and accepts that any building work considered to be “self-assessable” under the *Building Act 1975* does not require a development application. However a development application for building work carried out off the Mining Lease will be required to be lodged with QFRS referral as stated under Schedule 7 of the Sustainable Planning Regulation.

Being the primary respondent to any incident at these sites, the equipment to be installed must be compatible with QFRS appliances and equipment and meet operational capabilities. As a referral agency, the QFRS requests to be engaged to provide advice on the design of any fire systems to be installed within the site.

### PROPONENT RESPONSE

In accordance with the *Approvals Pathway* contained in *Appendices – Volume 2* of this SEIS, the relevant Development Approvals will be obtained for those building works that are located outside of the MLA.

Waratah Coal welcomes the opportunity of consulting with the QFRS during the design of fire systems in temporary and long-term work camps.

SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>9108 / 4118</b>
SUBMITTER TYPE	Government	TOR CATEGORY	Social / <b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety (QFRS – Central Region)</b>	RELEVANT EIS SECTION	EIS – Workforce & Transport

## DETAILS OF THE ISSUE

QFRS notes that travel arrangements for the majority of the workforce will be a fly-in-fly-out (FIFO) strategy directly to the project site and mine accommodation facilities. However, it would be expected that there would be an increase in vehicle movements, both heavy and light, on the local road networks during the development of the mine site and accommodation facilities, regardless of the project phase.

As the site is to be located 30 kilometres from the Alpha township, the QFRS Alpha auxiliary service will be the primary respondents to any road traffic crashes. Further assistance will be provided from the QFRS Emerald and Barcaldine auxiliary services which would have an extended response time.

The mine development may have an impact on the staffing resources of the Alpha Fire and Rescue Station with some QFRS auxiliary personnel seeking employment at the mine project. This may diminish the QFRS response capabilities in this area.

The QFRS requests future consultation be held with the proponent to implement an agreement between both parties and formulate an arrangement to ensure staffing and equipment resources are available to provide life and property protection to the residents of the surrounding townships and their infrastructure, as well as providing response and support capabilities to any emergency incident that may occur on the mine site.

The transport proposal highlights that the majority of the work force will be transported to the site as FIFO, however a fatigue management plan is to be implemented to address the issue of locally based employees/contractors choosing to travel in their own vehicles and driving immediately after completion of their shifts. This would assist in preventing road crashes through workers driving while fatigued.

## PROPONENT RESPONSE

As discussed in the *SIMP*, Section 6.2 (refer to *Appendices – Volume 2* of this SEIS), the capacity of emergency services will be addressed under the recommended Galilee Basin CSIA Roundtable. It is envisaged that all Galilee Basin proponents will contribute funding to improve infrastructure and services in Alpha and the surrounding area (refer to *SIMP*, Section 5.1).

Waratah Coal has prepared a draft Health and Emergency Services Strategy, to help articulate Waratah Coal’s approach to the management of social impacts and to facilitate input to the management of social impacts by various stakeholders. The overall objective of the Health and Emergency Services Strategy is to promote a safer and healthier workplace and to enhance the contribution made by the project to the communities in which it is located. A number of policies and procedures have been drafted in support of the Health and Emergency Services Strategy, including:

- Workplace Induction
- Drug and Alcohol Policy
- Fatigue Management Plan
- Community Cohesion Strategy
- Code of Conduct, and
- Grievance and Dispute Resolution Mechanism.

The draft Health and Emergency Services Strategy, and above policies and procedures, were prepared in consultation with various government agencies and have been included in the *SIMP* (see *Appendices – Volume 2* of this SEIS).

Waratah Coal welcomes the opportunity to consult further with QFRS during the finalisation of the above strategies.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>364</b>	ISSUE REFERENCE:	<b>13000</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>DEEDI (APSDA Branch)</b>	RELEVANT EIS SECTION	

## DETAILS OF THE ISSUE

### EMQ Central Region Input re EIS for Galilee Coal (Northern Export Facility)

- Ensure that construction camps near the Queensland coast comply with the current building standards where applicable and that temporary housing and shipping containers are secured to any relevant standards
- Camps need to be prepared in the event of isolation from flooding and plan to carry sufficient foodstuffs and supplies to sustain the workers in the event of prolonged isolation, this should not place any additional demand on Local disaster management groups
- The project managers should establish links with the various Local Disaster Management Groups, and
- Due to additional road traffic movements, in locations where there is no auxiliary fire service providing road crash rescue services, support should be given to local State Emergency Service Units that provide Road Crash Rescue services in those areas.

## PROPONENT RESPONSE

Hazard and Risk Management plans, as conditioned by the Coordinator-General, will ensure that the workers accommodation has the appropriate measures in place to provide a safe and conducive environment for the workers. This will include:

- Buildings meeting the relevant building standards
- Compliance with the local disaster management plans including mitigation and management of flooding
- Establishment of links with the various Local Disaster Management Groups to allow relationships to be formed, and
- Providing assistance to the Local and State Emergency Service Units (as required), in accordance with the above mentioned Traffic Management Plan.

The reference to the *Fire and Rescue Service Act 1990* has been included in the Legislative Framework. Consultation with QFRS will be undertaken where considered appropriate, reasonable and relevant to managing risk.

See also the *Initial Emergency Response Plan Framework* contained in *Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>1840</b>	ISSUE REFERENCE:	<b>4068</b>
SUBMITTER TYPE	Council	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Barcaldine Regional Council</b>	RELEVANT EIS SECTION	19. Hazard Risk and Emergency Management

### DETAILS OF THE ISSUE

Need for Disaster Management Plan to be combined with the Regional Disaster Management Plan and also Mine appointed liaison and representative for DM working groups, consultation and planning.

There is a need to consider risks for the rehabilitation and decommissioning based on the current technologies and proposed final rehabilitation planning including open pit voids, dams, storages, stockpiles and mitigation devices.

### PROPONENT RESPONSE

Waratah Coal will develop a Disaster Management Plan (DMP) as part of the management plans and procedures to be developed for the project. The DMP will incorporate stakeholder consultation in its preparation. The DMP will be supplemented by the inputs from risk workshops and hazard and risk assessments that Waratah Coal has committed to undertaking in cooperation with all its specialist sub-consultants and stakeholders (where applicable).

Refer to Issue Reference 4040 (in Part C - 19 - Decommissioning and Rehabilitation) for details of the mine closure and rehabilitation planning.

SUBMITTER No.	<b>1840</b>	ISSUE REFERENCE:	<b>4069</b>
SUBMITTER TYPE	Council	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Barcaldine Regional Council</b>	RELEVANT EIS SECTION	1.2.2.6

### DETAILS OF THE ISSUE

It is noted that explosives will be stored outside the lease boundary and to transport to site.

Please clarify the transport route and controls which will be established. Please confirm that public access routes will not be used for the final transport of explosive materials.

### PROPONENT RESPONSE

A Hazard and Risk Assessment will be undertaken identifying the final access routes for all explosives that are being brought to the mine site. A Hazard and Risk workshop will be held, in which the issues surrounding the storage location and transportation of explosives will be identified, prior to final route selection. This will be undertaken in collaboration with the relevant stakeholders including local council's and disaster management groups.

SUBMITTER No.	<b>668</b>	ISSUE REFERENCE:	<b>4070</b>
SUBMITTER TYPE	NGO	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Road Accident Action Group (RAAG)</b>	RELEVANT EIS SECTION	Appendices V5; Appendix 21 Traffic and Transport 3-2 p33;

### DETAILS OF THE ISSUE

- Fuel Storage not listed
- Explosives storage not listed, and
- No description or mention of fuel, explosives or transport of dangerous goods.

The EIS should show effects/risks of fuel transport, explosives and storage on local facilities and residents. Residents as far as Mackay, particularly Walkerston are at risk from high volumes of fuel being transported, mitigation measures to decrease these risks need to be explained by the proponent.

### PROPONENT RESPONSE

Diesel fuel will be transported to the mine via 95,000 litre fuel tanker wagons in fuel trains on the heavy haul train line. Refer to Issue Reference 4069.

SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>4072 / 19056</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety (QFRS – Central Region)</b>	RELEVANT EIS SECTION	2.1.1 Workforce & Accommodation

### DETAILS OF THE ISSUE

- Identify location of, and provision of an evacuation and access map for each of the accommodation workers villages, including work depots and laydown areas,
- Identify if any emergency first aid facilities will be provided at the work village locations,
- Identify possible landing site for both the rescue helicopter service and fixed wing aircraft services if required, and
- Notify if accommodation work camps will be alcohol free.

### PROPONENT RESPONSE

Waratah Coal has investigated and is committed to undertaking hazard and risk identification workshops and assessments in cooperation with all its specialist sub-consultants and stakeholders following completion of all the technical specialist studies. Following this process, a detailed hazard and risk assessment will be prepared, and the Emergency Management Plan and Health and Safety Plan will be developed. The workshop will address the requirement and ability for the local emergency services to respond to potential increased demands resulting from the increased population pressure during construction.

More generally, the disaster management, hazard and risk and health and safety plans and assessments will include collaboration to ensure these sort of issues are adequately addressed.

An *Initial Emergency Response Plan Framework* for the mine has been prepared and is presented in the *Appendices – Volume 2* of this SEIS.



SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>4073 / 19057</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety (QFRS – Central Region) – EMQ Central Region</b>	RELEVANT EIS SECTION	2.1.2 Transport

### DETAILS OF THE ISSUE

- Identify access routes, service roads, road diversions, or road closure locations to the Ambulance Communication Centre for any impact upon provision of emergency services, and
- Identify airfield locations and any expansion work undertaken.

### PROPONENT RESPONSE

Waratah Coal has investigated and is committed to undertaking hazard and risk identification workshops and assessments in cooperation with all its specialist sub-consultants and stakeholders. Following completion of all the technical specialist studies, a detailed hazard and risk assessment will be prepared, and the Emergency Management Plan, Health and Safety Plan will be developed.

Mine design and transportation infrastructure information is to be provided in the latest mine design and updated Traffic and Transport studies. These will identify the locations of the airfield for the mine and identify any impacts, temporary or otherwise, to the Ambulance Communication Centre.

More generally, the disaster management, hazard and risk and health and safety plans and assessments will include collaboration to ensure these sort of issues are adequately addressed.

Please see the *Traffic Engineering Report in Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>364</b>	ISSUE REFERENCE:	<b>4074 / 19058</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>DEEDI (APSDA Branch)</b>	RELEVANT EIS SECTION	2.1.7 Telecommunications

### DETAILS OF THE ISSUE

- Notify of work proposed that may impact on telecommunications infrastructure and communication links between the Ambulance Communication Centre and ambulance facilities and/or vehicles, and
- The QAS may be required to fund and expand radio networks in the area. The QAS would request support to ‘piggy back’ communication technology on planned towers, or investigate assisting QAS to install appropriate technology in the area.

### PROPONENT RESPONSE

Waratah Coal will openly engage with the Ambulance Communication Centre and services to liaise with them to identify or inform them of any potential impacts to the telecommunications systems that currently exist. Waratah Coal will explore the opportunity of shared usage or ‘piggy backing’ of radio networks in the project area where practicable.

More generally, the disaster management, hazard and risk and health and safety plans and assessments will include collaboration to ensure these sort of issues are adequately addressed.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>364</b>	ISSUE REFERENCE:	<b>4075 / 19059</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>DEEDI (APSDA Branch)</b>	RELEVANT EIS SECTION	6.1 Hazard and Risk Assessment – Mine

### DETAILS OF THE ISSUE

- Identify risk and control measures associated with vehicle movements
- Notify of the type of Hazardous Chemicals/Materials stored on site, and
- Provide the Major Emergency Incident Plan, including updated contact details for key stakeholders in case of an emergency.

### PROPONENT RESPONSE

Waratah Coal is committed to undertaking hazard and risk identification workshops and assessments in cooperation with all its specialist sub-consultants and stakeholders. Following this process, a detailed hazard and risk assessment will be prepared, and the Emergency Management Plan will be finalised (see *Initial Emergency Response Plan Framework* in *Appendices – Volume 2* of this SEIS) and Health and Safety Plan will be developed.

The hazard and risk assessment and an updated Traffic and Transport study will provide risk management and control measures for vehicle movements. It will also include the identification of the type and storage locations for Hazardous Chemicals/Materials; this will be incorporated into the detailed design for the project. A Hazard and Risk workshop will be held, in which the issues surrounding the storage locations and transportation (including route options) of hazardous materials and chemicals will be analysed.

SUBMITTER No.	<b>364</b>	ISSUE REFERENCE:	<b>4076 / 19055</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>DEEDI (APSDA Branch) – EMQ Central Region</b>	RELEVANT EIS SECTION	

### DETAILS OF THE ISSUE

- Ensure that construction camps near the Queensland coast comply with the current building standards where applicable and that temporary housing and shipping containers are secured to any relevant standards
- Camps need to be prepared in the event of isolation from flooding and plan to carry sufficient foodstuffs and supplies to sustain the workers in the event of prolonged isolation, this should not place any additional demand on Local disaster management groups
- The project managers should establish links with the various Local Disaster Management Groups, and
- Due to additional road traffic movements, in locations where there is no auxiliary fire service providing road crash rescue services, support should be given to local State Emergency Service Units that provide Road Crash Rescue services in those areas.

## PROPONENT RESPONSE

All current standards for construction camp dwellings and other buildings will be adhered to.

Detailed hazard and risk assessments will be prepared, and the Emergency Management Plan, Health and Safety Plan will be developed. These will include management of impacts from potential isolation, and contacts/consultation with location disaster management groups. Regardless of this, the relevant personnel will establish contact with the relevant local disaster management groups.

Waratah Coal will consult with the State Emergency Service (and other relevant groups) and collaborate on the provision of road crash rescue services impacted by the proposed mine (note that this is only expected to be local to the mine and the Abbot Point SDA as the majority of the workforce is expected to be FIFO).

SUBMITTER No.	<b>267</b>	ISSUE REFERENCE:	<b>4077 / 19060</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Dept of Justice and Attorney-General (Hazardous Industries and Chemicals Branch)</b>	RELEVANT EIS SECTION	

## DETAILS OF THE ISSUE

Based on the types and quantities of dangerous goods identified in the EIS, the project is expected to meet the Major Hazardous Facility (MHF) criteria based on the proposed indicative maximum storage volume of ANFO (UN 0082) of 700 tonne. A classification for ANFO is provided as 1.1D. There is a MHF threshold of 50 tonnes for explosives of class 1.1 (excluding Class 1.1A).

HICB recommends that the project managers maintain contact with the Mining Inspectors of DEEDI regarding OHS and MHF safety obligations.

## PROPONENT RESPONSE

Project managers will maintain open dialogue with the Mining Inspectors at DEEDI concerning the Occupational Health and Safety and Major Hazardous Facility safety obligations.

SUBMITTER No.	<b>416</b>	ISSUE REFERENCE:	<b>4078 / 19061</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Queensland Police Service</b>	RELEVANT EIS SECTION	Vol 2, 18.1.1

## DETAILS OF THE ISSUE

The proponent has detailed a number of Acts and Regulations pertaining to the Hazard and Risk assessment for the operation of the mine.

There are legislative and regulatory responsibilities incumbent upon the QPS to act as a result of certain circumstances such as death whether on the mining site or elsewhere. These need to be considered in the management of disaster and other emergencies, such as but not restricted to:

- *Disaster Management Act*
- *Coroners Act*, and
- *Police Powers and Responsibilities Act*.

## PROPONENT RESPONSE

The Emergency Management Plan and Health and Safety Plan will include the relevant legislative and regulatory responsibilities and the hazard and risk assessment process will include a wide consultation base to ensure the correct agencies and responsibilities are identified, including those identified under the Acts listed above.

<b>SUBMITTER No.</b>	<b>420</b>	<b>ISSUE REFERENCE:</b>	<b>4079 / 19062</b>
<b>SUBMITTER TYPE</b>	Government	<b>TOR CATEGORY</b>	<b>Hazard &amp; Risk</b>
<b>NAME</b>	<b>Queensland Health</b>	<b>RELEVANT EIS SECTION</b>	Vol 3, 18.1.1

## DETAILS OF THE ISSUE

Legislative framework for the management of Risk for the development of the rail and associated infrastructure.

As for the mine section of the project, there are legislative and regulatory responsibilities incumbent upon the QPS to act as a result of certain circumstances, such as death. These need to be considered in the management of disaster and other emergencies such as but not restricted to:

- *Disaster Management Act*
- *Coroners Act*, and
- *Police Powers and Responsibilities Act*.

## PROPONENT RESPONSE

The Emergency Management Plan and Health and Safety Plan will include the relevant legislative and regulatory responsibilities and the hazard and risk assessment process will include a wide consultation base to ensure the correct agencies and responsibilities are identified, including those identified under the Acts listed above.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

<b>SUBMITTER No.</b>	<b>420</b>	<b>ISSUE REFERENCE:</b>	<b>4080 / 19063</b>
<b>SUBMITTER TYPE</b>	Government	<b>TOR CATEGORY</b>	<b>Hazard &amp; Risk</b>
<b>NAME</b>	<b>Queensland Health</b>	<b>RELEVANT EIS SECTION</b>	Hazard and Risk Vol 2 and 3 Chapters 18

## DETAILS OF THE ISSUE

Queensland Health believes that the Hazard and Risk component of the EIS needs to provide further details relating to the following aspects:

- The project’s potential to generate and harbour disease vectors.
- The Pest management plan described within Vol 2 and 3, Sections 18.5.3.4 must incorporate appropriate mosquito management.

Queensland Health recommends that the proponent develops a “mosquito management plan” component within the pest management plan, for the entire site/s (including construction camps) and in particular areas where it is intending to pond significant volumes of water. Reference should be made to Queensland Health’s; “Guidelines to minimise mosquito and biting midge problems in new development areas.”

## PROPONENT RESPONSE

A site specific mosquito management plan will be developed which will be compliant with the Queensland Health “Guidelines to minimise mosquito and biting midge problems in new development areas.”<sup>1</sup> The plan will incorporate all phases of the project, highlight any potential high risk areas and outline strategies for minimising the development of habitats for the proliferation of mosquitoes, midges and other biting insects.

SUBMITTER No.	<b>420</b>	ISSUE REFERENCE:	<b>4088</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk / Health &amp; Safety</b>
NAME	<b>Queensland Health</b>	RELEVANT EIS SECTION	Vol 3, 18.6.2

## DETAILS OF THE ISSUE

The proponent details the Emergency Response Plan will constitute appropriately trained persons within Emergency Management and Response teams.

QPS requests the proponent to engage the QPS as a key stakeholder in the preparation of the Emergency Response Plan. QPS Contacts will be dependant upon the relevant Police District in which the rail construction is situated.

## PROPONENT RESPONSE

The development of an Emergency Response Plan will be done in association and utilising communication with relevant stakeholders, including the QPS. Waratah Coal welcomes the opportunity to engage the QPS groups relevant to the region in which the project is applicable.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>19069, 19070, 19071, 19072, 19073, 19074, 19075, 19076, 19077, 19078, 19079, 19080, 19081, 19082, 19083, 19084 / 4076, 4083, 4084, 4085, 4086 / 4087 / 14000</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety</b>	RELEVANT EIS SECTION	

## DETAILS OF THE ISSUE

### State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide<sup>2</sup>

#### BUSHFIRE HAZARD

Volume 1 – Project Overview, Chapter 4 – Risk Assessment, Section 4.3 – Legislative Framework states:

- In addition the Queensland State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide also has relevance to the project. SPP 1/03 requirements for proposed developments are to mitigate and

<sup>1</sup> *Guidelines to minimise mosquito and biting midge problems in new development areas.* Queensland Health, March 2002

<sup>2</sup> *State Planning Policy 1/03 Guideline: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide,* Qld Government, Dept. of Local Government and Planning. Department of Emergency Services. June 2003.

minimise potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment. SPP 1/03 has an effect where development applications are assessed, planning schemes are made or amended accordingly and / or land is designated for community infrastructure (p48)

- Table 1 – Legislative Framework: *Fire and Rescue Service Act 1990*. This Act and the *Fire and Rescue Service Regulation 2001* requires the operator to establish effective relationships with the Queensland Fire and Rescue Service to provide for the prevention of and response to fires and certain other incidents endangering persons, property or the environment and/or for related purposes or activities
- Emergency response procedures will be developed in consultation with the Emergency Services and other related Government agencies (p50).

**Volume 1 – Project Overview, Chapter 4 – Risk Assessment, Section 4.3 – Legislative Framework states:**

- Australian Standard AS1940-2004: The storage and handling of flammable and combustible liquids. This standard sets out the requirements and recommendations necessary for the safe storage and handling of flammable and combustible liquids and includes minimum acceptable safety requirements for storage facilities, operating procedures, emergency planning and fire protection (p50).

**Volume 1 – Project Overview, Chapter 6 – Commitments – Mine Section 6.2.6 – Terrestrial Ecology states:**

- Develop a Fire Management Plan, working with BRC and the Rural Fire Service (p95).

**Volume 1 – Project Overview, Chapter 6 – Commitments – Rail Section 6.2.6 – Terrestrial Ecology states:**

- Develop a Fire Management Plan, working with BRC and the Rural Fire Service (p102).

**Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.13.2 Element Plan states:**

- Operational Policy Objective – Waste – Minimise the Generation of Wastes, Where Practicable and to Appropriately Contain, control and Dispose of all Waste Generated
  - No vegetative waste is to be burnt on site without a ‘Permit to Burn’ issued by the Rural Fire Brigade and compliance with any other relevant statutory requirement (p164).

**Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.14.2 Element Plan states:**

- Operational Policy Objective – Safely Manage the Risks to the Existing Environmental Values, Including Surrounding Land Uses Associated With the Project:
  - Ignition sources will be strictly controlled and limited to avoid fire (p166)
  - An approved fire protection system will be installed around new hydrocarbon storage areas (p166)
  - An approved fire protection system will be installed around new hydrocarbon storage areas (p166)
  - Ignition sources will be strictly controlled and limited to avoid a fire: (p167)
  - An approved fire protection system will be installed around new hydrocarbon storage areas
  - Fire fighting equipment must be checked as per regulatory requirements and maintained at all times (p167)
  - Develop an Emergency Response Action Plan to account for natural disasters such as storms, floods and fires will be developed for the construction, operation and maintenance phases (p167)
  - Stores, workshops and offices will be fitted with approved and certified fire detection (smoke detectors) and sprinkler systems (p167)
  - First aid and fire fighting equipment (hand held extinguishers and fire hoses) will be installed at strategic points within each building (p167)

- Develop a fire management plan for the site for construction and operation phases (p167)
- Fire fighting equipment and exit location will be suitably signed and all work areas will be within the required distance to reach emergency exits (p167)
- The site will have a fire truck or suitably equipped water truck or trailer that can support fire response requirements. Site fire fighting capabilities also will need to be addressed in the Emergency Response Action Plan (p168)
- Fire Drills will be undertaken on a regular pre-determined basis (p168).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 2. Compliant resolution strategy states:**

- Implementation Strategies –consult with Queensland Police, Queensland Ambulance, Queensland Fire and Rescue Service and Queensland Transport regarding road safety management during project construction (p193).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Section 8.8.5.1 Relationship to the EIS states:**

- Potential direct or indirect impacts associated with construction of the rail corridor on Threatened and Near Threatened flora species include:
  - Potential effects on health and viability of plants outside the clearance footprint through Increased edge effects and associated potential to increasing the abundance of weed species and fire intensity (p208).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 20. Waste element plan states:**

- Implementation Strategies: Disposal: no vegetative waste is to be burnt on site without a ‘Permit to Burn’ issued by the Rural Fire Brigade and compliance with any other relevant statutory requirement (p231).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 21. Hazard and risk element plan states:**

- Implementation Strategies:
  - ignition sources will be strictly controlled and limited to avoid a fire
  - an approved fire protection system will be installed around new hydrocarbon storage areas (p232)
  - fire fighting equipment must be checked as per regulatory requirements and maintained at all times (p233).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 21. Hazard and risk element plan states:**

- Implementation Strategies – emergency response:
  - develop an Emergency Response Action Plan to account for natural disasters such as storms, floods and fires will be development for the construction, operation and maintenance phases
  - stores, workshops and offices will be fitted with approved and certified fire detection (smoke detectors) and sprinkler systems (p233)
  - first aid and fire fighting equipment (hand held extinguishers and fire hoses) will be installed at strategic points within each building (p234)
  - develop a fire management plan for the site for construction and operation phases
  - fire fighting equipment and exit locations will be suitably signed and all work areas will be within the required distance to reach emergency exits (p235)

- the site will have a fire truck or suitably equipped water truck or trailer that can support fire response requirements. Site fire fighting capabilities also will be addressed in the Emergency Response Action Plan
- fire drills will be undertaken on a regular pre-determined basis, and
- Waratah Coal will liaise with local State Emergency Services, local ambulance and hospital services with respect to emergency response planning, and the subsequent development of those plans (p234).

**Volume 2 – Mine, Chapter 18 – Hazard Risk and Emergency Management Section 18.5.2.9 – Spontaneous Combustion at Coal Stockpile states:**

- During the operation phase coal stockpiles may combust spontaneously resulting in fire and smoke that may pose a safety and health risk to onsite workers. Waratah will develop management systems specific to minimising the risk of spontaneous combustion occurring and also to manage the risks should spontaneous combustion occur. These procedures would include routine monitoring of the coal stockpiles, stockpile compaction and minimising the stockpile stagnancy. In the situation where spontaneous combustion occur, mitigation procedures would include excavation of stockpile hot spots, spreading and the recirculation of ROM coal (p454).

**Volume 2 – Mine, Chapter 18 – Hazard Risk and Emergency Management Section 18.5.2.10 – Bushfire states:**

- A BMP will be prepared that provides a strategic approach to the management of bushfires in the mine area. This document will provide plans and processes based on contemporary “best-practice” for managing fires in tropical Savannah systems that best mitigate wild fire risks. The BMP will be focused on preservation of life and infrastructure in a context that adheres to ecological needs wherever possible. Moreover the BMP will include strategies that minimise the risk of fire leaving the mine site
- To further mitigate the risks to workers, infrastructure will have bushfire protection embedded into the design process. The maintenance of the fire protection equipment will be carried out as part of routine site management. It is therefore expected that the bushfire risk to the mine site will largely be managed though routine maintenance, albeit with review and revision of the procedures if the projected changes occur (p454).

**Volume 2 – Mine, Chapter 18 – Hazard Risk and Emergency Management Section 18.6.1 – Emergency Planning states:**

- A fully trained fire unit will be onsite at all times. This unit will consist of appropriately trained personnel from the mine workforce and will have access to fully maintained and functional fire fighting equipment (i.e. water tankers, light units fitted with quick spray units, appropriate communications and appropriate PPE). The members of the fire unit will undergo constant refresher training and all fire fighting facilities and equipment will be installed, serviced, maintained and inspected by a certified agency
- All hazardous materials storages, fuel storages areas, administration buildings, workshops, industrial facilities (i.e. CHPP) and accommodation facilities will have a dedicated fire alarm, suppression and fire fighting systems. First aid and fire fighting equipment (hand held extinguishers and fire hoses) will be located at strategic points within each facility and building. Fire fighting equipment and exit locations will be within the required distance to reach emergency exits (p456).

**Volume 3 – Rail, Chapter 18 – Hazard Risk and Emergency Management, Section 18.5.2.9 Bushfire states:**

- A Bushfire Management Plan (BMP) will be prepared that provides a strategic approach to the management of bushfires in the rail corridor and maintenance areas. This document will provide plans and processes based on contemporary ‘best practice’ for managing fires in tropical Savannah systems that best mitigate wild fire risks. The BMP will be focused on preservation of life and infrastructure in a context that adheres to ecological needs wherever possible. Moreover, the BMP will include strategies that minimise the risk of fire leaving the rail corridor (such as the regular control of vegetation within the corridor easement)



- To further mitigate the risks to workers, infrastructure will have bushfire protection embedded into the design process (such as spark arrestors or locomotives). The maintenance of the fire protection equipment will be carried out as part of routine site management. It is therefore expected that the bushfire risk along the railway will largely be managed through routine maintenance, albeit with review and revision of the procedures if the projected changes occur (p550).

**Volume 3 – Rail, Chapter 18 – Hazard Risk and Emergency Management, Table 1. Legislative framework states:**

- *Fire and Rescue Service Act 1990*
  - Legislative Obligation: This Act and the *Fire and Rescue Service Regulation 2001* requires the operator to establish effective relationships with the Queensland Fire and Rescue Service to provide for the prevention of and response to fires and certain other incidents endangering persons, property or the environment and/or for related purposes or activities
  - Compliance Strategy: Emergency response procedures will be developed in consultation with the Emergency Services and other related Government agencies (p532).

**DCS Comments**

It is recommended that the following be addressed in the EIS to ensure compliance with SPP 1/03:

- Identify the areas in the Project corridor that are located on land subject to high or medium bushfire hazard. If the project is not located on land subject to high or medium bushfire hazard, state this as a justification for the Project being compatible with Outcome 1 of the SPP (suggest inclusion in Chapter 18 of Volume 2 and 3, and in Chapter 2 of Volume 4), and
- It is recommended that the EMP for the mine and rail infrastructure add additional mitigation measures that ensure adequate access for fire fighting/other emergency vehicles and safe evacuation is provided for during construction and maintenance in the project area.

**PROPONENT RESPONSE**

A Bushfire Management Plan (BMP) will be developed for the project as part of the overall plans and procedures for the project. The BMP will identify the areas of bushfire hazard and procedures for emergency services to access the project infrastructure / area throughout all stages of the project cycle. Waratah Coal has developed a *Bushfire Management Planning Framework* which is included in *Appendices – Volume 2* of this SEIS.

An assessment of bushfire hazards will be undertaken to determine compliance with the SPP1/03 and control strategies will be developed for mitigation of bushfire risks. The revised Mine EM Plan and Rail EMP will incorporate mitigation measures to reduce the risk of bushfire hazards. The management and treatment of vegetative waste will be addressed in the non-mineral waste management plan (NMWMP). Vegetative waste will be used on site to provide fauna habitat, or chipped and mulched and used during progressive rehabilitation. Burning of vegetative waste will only occur as a last resort. The NMWMP will include a requirement that burning of vegetative waste does not occur unless a 'Permit to Burn' has been issued by the Rural Fire Brigade.

These works will be undertaken as part of the hazard and risk assessment. Waratah Coal has investigated and is committed to undertaking hazard and risk identification workshops and assessments in cooperation with all its specialist sub-consultants and stakeholders. This will occur upon completion of all specialist technical studies. Following this process, a detailed hazard and risk assessment will be prepared, and the Emergency Management Plan, Health and Safety Plan will be developed.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

It is noted that while the rail corridor may go through an area of high or medium bushfire hazard as determined using the SPP1/03 methodology (based on the calculation of the bushfire hazard at a particular location and determining the bushfire hazard scores of vegetation, slope and aspect), this hazard score does not reflect the risk of an activity nor the a degree the risk to infrastructure.

Recent incidents of bushfires caused by heavy haul freight trains are very rare due to improved train maintenance and train materials.

Waratah Coal's coal loading and handling Operational Procedures will ensure that the risk of coal dust fire on trains is managed efficiently so there is negligible risk to employees, other personnel, infrastructure, the environment and the properties through which the rail alignment will traverse.

Following the completion of a full vegetation assessment, which will include determining the bushfire hazard score of all vegetation types (and will not be limited to vegetation mapped by the State as being a regional ecosystem or high value regrowth), this information will be overlaid over a digital terrain model and bushfire hazard scores will be determined.

The mapping will then be used to interpret the risk of ignition from activities during construction and operational phases of the rail corridor.

This information will be contained as part of the Rail Safety Management System, along with a set of operational and response practices within a Bushfire Management Plan. The plan will include a set of operational and response practices which have both general and specific specifications which relate to a particular area (i.e. fire sensitive vegetation communities, or cropping areas) or be integrated into existing land management practices for a particular property through which the rail corridor traverses.

It is current practice to fully engage with local landholders, local bushfire brigades and other locally relevant emergency response organisations. Maintenance practices ensure that weeds and vegetation control are managed and monitored as well as fully maintained firebreaks and access tracks. Typically, the vegetation within the corridor is managed so as to limit vegetation to provide soil and ground stability but minimal fuel for fire.

The emergency planning for the rail corridor will include the identification of the best access routes for emergency purposes. These access routes would also form part of the mapping in the fire management plan for the rail corridor also identifying the designated routes to access various sections of the rail corridor for vegetation fire suppression activities.

However, as substantial sections of the rail corridor will not be accessible in a timely manner for vegetation fire suppression purposes, it is expected the plan will not rely on fire suppression as being the primary fire management regime for the rail corridor but will rely on the development and maintenance of firebreaks along the rail corridor and active vegetation management program to minimize the buildup of hazards within the corridor.

SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>19085, 19086, 19087, 19088, 19089, 19090, 19091, 19092, 19093, 19094, 19095, 7000, 7001, 7002, 7003, 7004, 7005, 7006, 7007, 7008, 7009, 7010</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety</b>	RELEVANT EIS SECTION	

## DETAILS OF THE ISSUE

### State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide<sup>3</sup>

#### LANDSLIDE HAZARD

##### Volume 1 – Project Overview, Chapter 4 – Risk Assessment, Section 4.3 – Legislative Framework states:

- In addition the Queensland State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide also has relevance to the project. SPP 1/03 requirements for proposed developments are to mitigate and minimise potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment. SPP 1/03 has an effect where development applications are assessed, planning schemes are made or amended accordingly and / or land is designated for community infrastructure (p48).

##### Volume 1 – Project Overview, Chapter 6 – Commitments – Mine Section 6.2.3 – Land states:

- Prepare and implement erosion control measures and continue to monitor and maintain the measures implemented (p94)
- Erosion and Sediment Control Plans (ESCPs) will be developed and put in place prior to the commencement of construction works for all areas of the project that may cause erosion (p94), and
- Prior to construction, Waratah Coal will carry out soil sampling at waterways to better identify erosion risk and put in place appropriate management measures (p94).

##### Volume 1 – Project Overview, Chapter 6 – Commitments – Rail Section 6.3.3 – Land states:

- Preparing and implementing erosion control measures and to continue to monitor and maintain the measures implemented (p101)
- Erosion and Sediment Control Plans (ESCPs) which will be developed and put in place prior to the commencement of construction works for all areas of the rail that may cause erosion (p101), and
- Prior to construction carry out soil sampling at waterways, to better identify erosion risks and to put in place appropriate management measures (p101).

##### Volume 1 – Project Overview, Chapter 6 – Commitments – Rail Section 6.3.5 – Terrestrial Ecology states:

- Develop and implement a Soil and Erosion Management Plan in accordance with the relevant local planning policies and the relevant State planning policy (p102).

##### Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.1 Element Plan states:

- The EIS has determined that the major soil types occurring on the mine site are Kandosols and Rudosols both of which have low fertility. Land use associated with these soil types is limited to grazing and native pastures. Laboratory analysis indicated that these soils display a moderate to high potential for dispersion and therefore appropriate controls to minimise erosion should be implemented (p124).

<sup>3</sup> State Planning Policy 1/03 *Guideline: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide*, Qld Government, Dept. of Local Government and Planning. Department of Emergency Services. June 2003.

**Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.1.2 Element Plan states:**

- Operational Policy Objective – Geology and Soils – Minimise Environmental Impact by Preventing Soil Loss and Erosion
  - Manage and mitigate the risks of soil erosion impacts from all work areas where vegetation is removed or the soil distributed during construction works (p125)
  - Development of a soil and water management plan including ESCPs, which comply with the International Erosion Control Association (IECA) Australasia’s Best Practice Erosion and Sediment Control guideline which include measures such as:
    - Shape landforms to take account of the erodibility of soil materials used (p125)
    - Undertake re-shaping / contouring of the land surface and batters to minimise slope changes and angles to reduce the potential of mass movement or failure where practicable (p126).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Section 8.8.1.1 Relationship to the EIS states:**

- The EIS has determined that the rail alignment traverses a number of soil units including areas of Tenosols, Chromosols, Kandosols, Vertosols and Sodosols and cracking clays. The soils present within the project area are generally suitable for grazing; however some are prone to erosion and dispersion
- The main potential impacts of the proposed rail will include changes to agricultural land capability and increased risk of erosion in areas of construction and/or operation. Potential impacts to the topography, geology, soils and landform of the project, as well as management strategies and commitments to mitigate these impacts, have been identified (p198).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 5. Geology and soils element plan states:**

- Performance criteria: manage and mitigate the risks of soil erosion impacts from all work areas where vegetation is removed or the soil disturbed during construction works
- Implementation Strategies: Development of a soil and water management plan including Erosion and Sediment Control Plans (ESCPs), which comply with the International Erosion Control Association (IECA) Australasia’s Best Practice Erosion and Sediment Control guideline (p199)
- Monitoring /Auditing: regular inspection of sediment and erosion control structures and measures. During wet weather or when using large quantities of water in construction works, more frequent monitoring may be necessary (p200), and
- Corrective Action: appropriate control measures implemented where unacceptable sediment or erosion is identified or may occur (p201).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 11. Flora element plan states:**

- Implementation Strategies – Sediment and Erosion Control:
  - As construction activities may impact on uncleared areas it is important to ensure sediment fencing is in place before site preparation and other earthworks commence. Prior to any site preparation operations, the SEO (or other suitably qualified personnel) is to undertake an inspection of all sediment fencing, and
  - On completion of construction, progressive rehabilitation will be undertaken, by replacement of topsoil, contouring, re-vegetation with local native species, and mulching as soon as possible after disturbance (p210)
- Implementation Strategies – Corrective:
  - Appropriate control measures implemented where unacceptable sediment or erosion is occurring or may occur.

Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 13. Aquatic flora and fauna element plan states:

- Implementation and maintenance of the Water Quality Element, with particular reference to the management of stormwater, stockpiles and exposed soils. Measures include but are not limited to:
  - Minimisation of the construction footprint at all phases
  - Timing of major earth works to coincide with low rainfall and low flow periods as far a practical
  - Staged clearing of vegetation, and
  - Locating stockpiles of excavated materials away from the watercourses and with appropriate runoff and sediment control measures (p215).

Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 25. Land rehabilitation element plan states:

- Implementation Strategies:
  - Erosion and sediment control measures will be installed where necessary. Existing soil erosion measures will be reinstated to a condition at least equal to the pre-existing state
  - Distribution of vegetation will be controlled to ensure that any erosion will be visible during inspections (p241)
- Monitoring/Auditing:
  - Regular inspections will be undertaken during construction to monitor for erosion, presence of weeds, revegetation success and general stability of the rail corridor and infrastructure area (p242).

### DCS Comments

It is recommended that the following be addressed in the Draft EIS to ensure compliance with SPP 1/03 (landslide):

- Identify the areas in the project area that contain slopes of 15% or more prior to and following construction of the mine infrastructure. An aerial map highlighting the slopes across the project area would be appropriate. Suggested inclusion in Volume 5, Chapter 6 Soils and Geology.
- An overlay of the required vegetation clearance and topography would be useful in identifying ‘at risk’ areas. Suggested inclusion in Volume 5, Chapter 6 Soils and Geology.
- If landslide risk is identified, suitable measures that ensure the long term stability of the project site should be detailed in the EMP for mine and rail infrastructure.

### PROPONENT RESPONSE

#### Rail

At this concept design stage the alignment has allowed for all cuts to be either 1:3 or where noted 1:2 (reinforced). This has been described in the *Railway Concept Design Report* (contained in the *Appendices – Volume 2* of this SEIS) and is as per accepted standards, namely the ARTC Standard<sup>4</sup> “Earthworks, Formation and Capping Material”, applicable to New South Wales and Queensland.

The 1:2 (reinforced) cut was implemented in several places through the Clark & Leichardt Ranges (50 – 150 KP) where a 1:3 cut batter would have produced corridor widths in excess of 200m or where the natural surface was close to 1 in 3 and the design batter would continue within a couple of metres below the natural surface without interface for a considerable extent.

<sup>4</sup> ARTC Standard. 2010. *Earthworks, Formation and Capping Material*. ETM-08-01, v1.1, dated 18 June 2010.

Note that slope stability is normally finalised after detailed geotechnical investigations and further work will have to be done in those areas once the detailed geotechnical information is available. Where the underlying soil and/or angle of slope dictates, typical stability treatments might include rip-rap, geofabric, hydromulch, etc..

Areas of land where embankment slopes of >15% for the 'pre-construction' and the 'post-construction' cases have been modelled and mapped and can be provided upon request (they are not included with this SEIS as the mapping is more than 500 pages long).

For the railway design and construction Waratah Coal would generally expect to use slopes of 1:2 or 1:2.5 as the presence of sandy soils is limited to the first 25km of the alignment through the coastal plains (Section 5.2 (Geology) of EIS). Waratah Coal also expects to use batter stabilisation techniques such as reinforcement through the use of geofabrics to allow slopes steeper than 15%.

Properly designed stabilised embankments, as per standard railway embankment design, will be a critical element of the detailed design as any embankment failures or slips during operations will cause significant disruptions and have significant financial consequences. Final embankment slopes will be set by the extent of disruption required to the existing ground, detailed geotechnical investigations and the extent of allowable slope stabilisation works.

### **Mine**

At the mine site there are currently four small areas that exceed 15% in slope in the north-western corner of the mining lease area – see Figure 1.

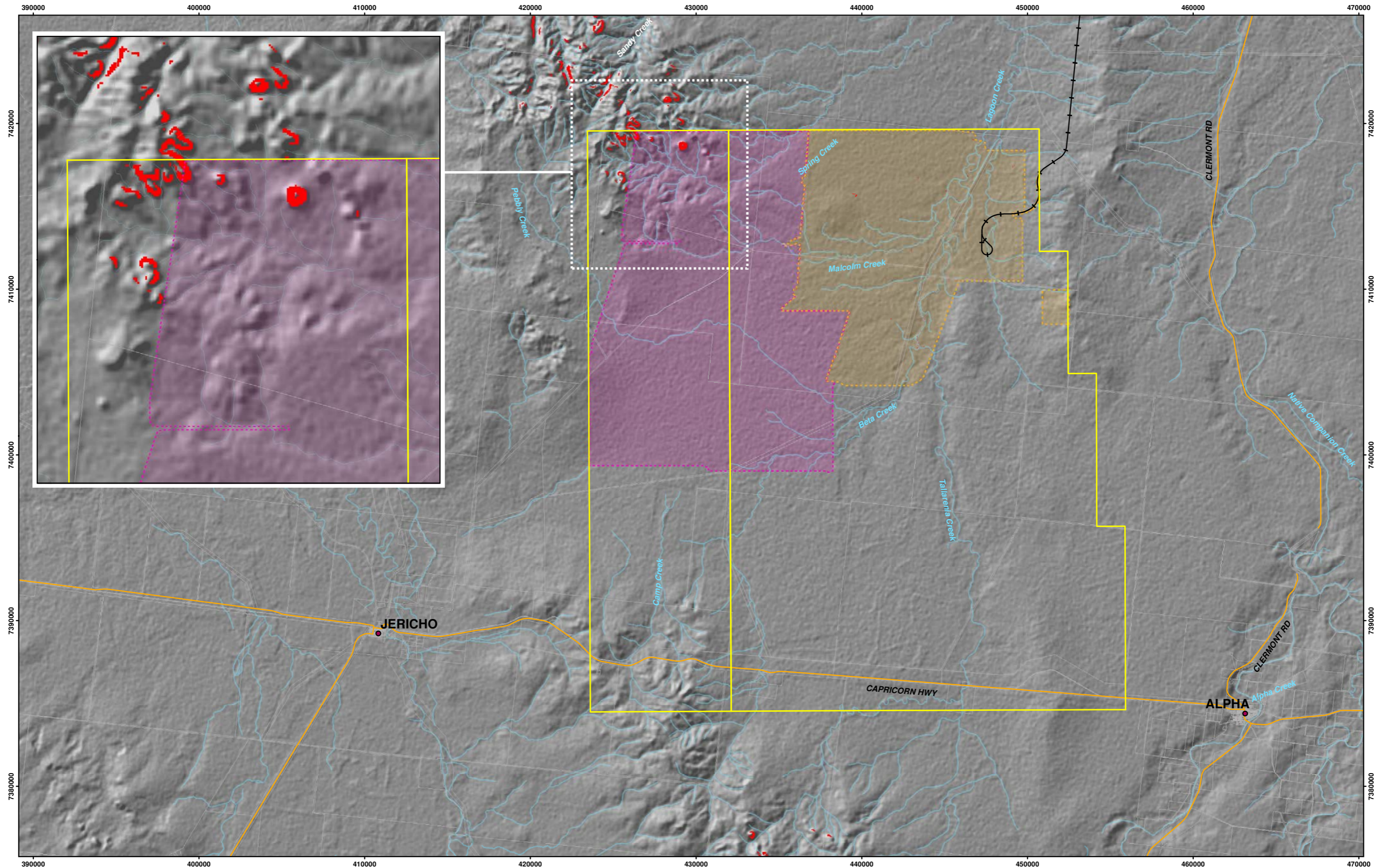
Rehabilitation will be designed to achieve a safe and stable final landform compatible, where practical and possible, with the surrounding environment. This will involve the reshaping of the majority of overburden emplacement slopes to <10°. Where slopes are >10°, compaction, seeding, additional drainage and revegetation works will be carried out to achieve the necessary erosion/sediment control and groundcover establishment – see section 3 of the *Rehabilitation and Decommissioning* section of the *Draft Mine EM Plan* in *Appendices – Volume 2* of this SEIS.











Waratah Coal has prepared a *Bushfire Management Planning Framework* which is included in *Appendices – Volume 2* of this SEIS.

See also the Rail Concept Drawings Longitudinal Sections in the *Appendices – Volume 2* of this SEIS.



Figure 1. Mine Site Slope Analysis



<p>GALILEE COAL PROJECT (Northern Export Facility)</p>  <p><b>Waratah Coal</b> THE NEW ENERGY IN COAL</p> <p>Mineralogy House, Level 7, 380 Queen Street, Brisbane Qld 4000, Australia</p>	<p><b>Source:</b> Cadastral Boundaries: DERM 2012 Mine Detail, Proposed Railway Line: Waratah Coal Pty. Ltd. 2012 Arterial Roads: Geoscience Australia 2012 Watercourses: VMA Queensland Regrowth Watercourses Version 2.1.9 (DERM 2012)</p>	<p><b>Slope:</b> Slope analysis performed using ESRI ArcMap 10.0 Spatial analyst using Natural Neighbour interpolation of SRTM Satellite Spot heights at 30m pixel size, and FSI, North, Barcelona, UTM, 5m, gridded DEM. Background Image: Satellite Image Geoscience Australia 2005. Shaded relief: ESRI Data &amp; Maps, Maps 2005.</p>	<p>0 2,000 4,000 6,000 8,000 10,000</p> <p>Metres</p> <p>A3 Scale 1:200,000</p> <p>Coordinate System: GDA 1994 MGA Zone 55 Projection: Transverse Mercator</p>	<p>  EPC1040 &amp; Part of EPC1079   Cadastral Boundary   Probable Clearing Footprint   Subsidence Footprint   Proposed Railway Line                 </p> <p>  Arterial Road   Watercourse                 </p> <p><b>Slope</b></p> <p> &lt;15%   &gt;15%</p>	<p><b>SLOPE ANALYSIS</b> <b>MINE SITE - SLOPES GREATER THAN &gt;15%</b></p>
	<p><b>Disclaimer:</b> This plan is based on or contains data provided by others. Waratah Coal Pty. Ltd. gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to and use of the data. Data must not be used for direct marketing or be used in breach of privacy laws.</p>	<p><b>File:</b> WAR20-26-SEIS0029a-FIGXXa-MINE-SITE-SLOPE-120804 Date: 4/08/2012</p>			



SUBMITTER No.	<b>251</b>	ISSUE REFERENCE:	<b>6030, 6031, 6032, 6033, 6034, 6035, 6036 / 19044, 19051, 19052, 19053, 19054, 19064, 19065, 19066, 19067, 19068, 19096 / 4065, 4066, 4082</b>
SUBMITTER TYPE	Government	TOR CATEGORY	EMP (Water Resources [Surface Water]) / <b>Hazard &amp; Risk</b>
NAME	<b>Dept of Community Safety</b>	RELEVANT EIS SECTION	

**DETAILS OF THE ISSUE**

**State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide**

FLOOD HAZARD

Volume 1 – Project Overview, Chapter 4 – Risk Assessment, Section 4.3 – Legislative Framework states:

- In addition the Queensland State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide also has relevance to the project. SPP 1/03 requirements for proposed developments are to mitigate and minimise potential adverse impacts of flood, bushfire and landslide on people, property, economic activity and the environment. SPP 1/03 has an effect where development applications are assessed, planning schemes are made or amended accordingly and / or land is designated for community infrastructure (p48).

Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.1.2 Element Plan states:

- Operation Policy Objective – Geology and Soils, Minimise Environmental Impact by Preventing Soil Loss and Erosion
  - If practicable undertake construction activities during periods of low average monthly rainfall to minimise the impact of potential flooding and high intensity rainfall (p125).

Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.3.2 Element Plan states:

- All construction activities will be scheduled in such a way that the impacts of flooding on the construction of the rail will be minimised (p130)
- Prepare flood management plans for both construction and operation (p130)
- All drainage structures associated with the project including those necessary for supporting (facilities such as access roads will be designed to the appropriate standards. All designs will incorporate an appropriate level of flood immunity, minimisation of impacts to upstream landholders and mitigation of the impacts of velocity and scour. (p130).

Volume 1 – Project Overview, Chapter 7, Environmental Management Plan: Mine. Section 7.8.14.2 Element Plan states:

- Operational Policy Objective – Hazard and Risk – Safely Manage the Risks to the Existing Environmental Values, Including Surrounding Land Uses Associated With the Project
- Develop an Emergency Response Action Plan to account for natural disasters such as storms, floods and fires will be developed for the construction, operation and maintenance phases (p167), and
- Construction activities will be phased to minimise potential flood impacts (p169).

Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Section 8.4.1 Rail Easement states:

- Collinsville to Bowen Development Rd (103km – 166km) – In this section the alignment crosses the North Queensland Gas Pipeline (near the Bowen River), as well as a 4.5km stretch of the Bowen River Floodplain (p185)



- Belyando River to China First Tenement (393km – 468km): the route continues south-west where it crosses the confluence of the Belyando River and its downstream tributaries. At this point the crossing of the extensive Belyando Floodplain is less than 5km (p186).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 5. Geology and soils element plan states:**

- Implementation Strategies: if practicable undertake construction activities during periods of low average monthly rainfall to minimise the impact of potential flooding and high intensity rainfall (p199).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 8. Hydrology element plan states:**

- Implementation Strategies: all construction activities will be scheduled in such a way that the impacts of flooding on the construction of the rail will be minimised (p204)
- Prepare flood management plans for both construction and operation, and
- All drainage structures associated with the project, including those necessary for supporting facilities such as access roads, will be designed to the appropriate standards. All designs will incorporate an appropriate level of flood immunity, minimisation of impacts to upstream landholders and mitigation of the impacts of velocity and scour (p204).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 21. Hazard and risk element plan states:**

- Implementation Strategies – Emergency response: develop an Emergency Response Action Plan to account for natural disasters such as storms, floods and fires will be developed for the construction, operation and maintenance phases (p233), and
- Flooding: construction activities will be phased to minimise potential flood impacts (p235).

**Volume 1 – Project Overview, Chapter 8 – Environmental Management Plan: Rail. Table 26. Acid Sulphate Soil Element Plan states:**

- Implementation Strategies – a description of the management strategies to minimise impacts from the site works including:
  - Strategies for preventing the oxidation of iron sulphides (including avoiding the disturbance of ASS by redesigning layout of the excavations and/or re-flooding of potential ASS to limit oxidation) (p243).

**Volume 2 – Mine, Chapter 18 – Hazard Risk and Emergency Management Section 18.5.2.11 – Flooding states:**

- Waratah is proposing to divert Tallarenha Creek in two areas on the mine site to allow for the construction of infrastructure and to separate creek water and the upstream catchments from local drainages on the proposed mining areas. In addition to the diversion Waratah will construct a levee bank along the eastern side of the site as a further flood mitigation measure. The location and design of the proposed diversions and levees have been established using the results of the detailed flood assessment undertaken for the project
- The risks associated with flooding to mine site personnel have also been undertaken as part of the flood impact assessment (see Volume 5, Appendix 17) (p 454).

**Volume 3 – Rail, Chapter 18 – Hazard Risk and Emergency Management, Section 18.5.2.10 Flooding states:**

- To minimise the risk of flood hazards to structures and personnel, rail infrastructure will be designed with flood immunity to the 100 ARI peak design flood event. This will allow the on-going operation of the railway and rolling stock provisioning yard during the 1 in 100 year flood event. Suitably sized drainage conduits and storage systems will be selected based on required capacities determined from future flood modelling. This may also include measures for flood proofing infrastructure to prevent the ingress of floodwaters (levees, drainage structures)

- Standard flood hazardous management procedures will be implemented based on dangerous flood depths and velocities. These will include procedures for dealing with flood warnings, flood awareness, flood readiness and suitable evacuation measures. Ongoing flood management during operation of the railway will include regular inspections and maintenance works of flood control infrastructure in line with industry standards, guidelines and principles, and
- Appendix F – Flooding Procedure (p550).

## DCS Comments

The areas required for the Project that are susceptible to flooding have been identified in the flood study reports contained in Volume 5 – Appendices of the EIS, as required by SPP1/03 Outcome 4.

The EIS has committed to the preparation of flood management plans and an Emergency Response Action Plan for the construction and operational phases of the Project; however detail on the flood immunity of specific mine infrastructure is not extensive.

It is recommended that the following be addressed in the EIS to ensure compliance with SPP 1/03<sup>5</sup>:

- The EIS states in Volume 3 – Rail, Chapter 18 – Hazard Risk and Emergency Management, Section 18.5.2.10 that rail infrastructure will be designed with 100 ARI flood immunity, however the other components of the Project (rail and port) do not confirm the level of flood immunity. DCS recommends that this be confirmed in Volume 2 – Mine and Volume 4 – Port of the EIS.
- The proponent should confirm that the proposed flood mitigation strategies detailed in the EMP for the rail and mine works will maintain the safety of site occupants, that is, the on-site workforce, from all floods up to and including a defined flood event (1 in 100 year ARI), in accordance with SPP 1/03 Guideline/Appendix 5A/Flood.

## PROPONENT RESPONSE

All mine infrastructure including open-cut pits and working areas have been designed to be protected from the 1 in 1000 year ARI flood event through the use of flood protection levees (refer *Mine Site Creek Diversion and Flooding Technical Report*). The rail has been designed to have 1 in 100 year immunity with addition provision for a minimum 500mm of freeboard (refer *Rail Corridor Cross Drainage Technical Report*).

A revised Mine EM Plan and Rail EMP, plus the Emergency Management Plan will incorporate flood management measures to ensure safety of site occupants.

For the acid sulfate soil issue, it is proposed that desk studies be undertaken involving geological and soils mapping and acid sulfate soils (ASS) risk mapping. Where there is a possibility that ASS may be disturbed by the proposed works or there is a requirement under State Planning Policy 2/02<sup>6</sup> (SPP2/02), then a detailed field investigation and laboratory testing regime will be undertaken in accordance with a detailed monitoring program devised in consultation with the relevant authorities (DEHP, and others where appropriate).

If investigations indicate the presence of ASS and if the proposed works may disturb the ASS, then management strategies will be developed base on the hierarchy of preferred strategies as set out in the Queensland Acid Sulfate Soil Technical Manual – Soil Management Guidelines Version 3.8<sup>7</sup> issued by the Queensland Government. The hierarchy includes ASS avoidance and minimisation as well as treatment and handling strategies. The management strategies will be designed to mitigate any likely ASS impacts and will be set out in an ASS management plan to be approved by the Queensland Government.

<sup>5</sup> State Planning Policy 1/03 *Guideline: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide*, Qld Government, Dept. of Local Government and Planning. Department of Emergency Services. June 2003.

<sup>6</sup> State Planning Policy 2/02 *Guideline: Planning and Managing Development Involving Acid Sulphate Soils. 2.0*. Queensland Government.

<sup>7</sup> Dear, S.E., Dobos, S.K., Watling, K.M., Ahern, C.R. (2002). *Soil Management Guidelines, Queensland Acid Sulfate Soil Technical Manual*. Version 3.8, November 2002.

Waratah Coal has prepared an *Initial Emergency Response Plan Framework* which is included in *Appendices – Volume 2* of this SEIS.

Waratah Coal has developed a *Bushfire Management Planning Framework* which is included in *Appendices – Volume 2* of this SEIS.

The *Draft Mine EM Plan* has been amended to address flood mitigation – refer to section 10. The *Draft Rail EMP* has been amended to include mitigation measures – refer to section 4.2.3. Both reports are contained in *Appendices – Volume 2* of this SEIS.

SUBMITTER No.	<b>420</b>	ISSUE REFERENCE:	<b>11001 / 11003 / 11029 / 11051 / 11053</b>
SUBMITTER TYPE	Government	TOR CATEGORY	<b>Hazard &amp; Risk</b> / Transport
NAME	<b>Queensland Health</b>	RELEVANT EIS SECTION	

## DETAILS OF THE ISSUE

Motor vehicle accidents associated with heavy vehicle traffic, fatigue and FIFO/DIDO workforces are an established issue in the Bowen Basin. Accident impacts are evident on police, health and emergency services, in addition to increased risks from higher traffic volumes to grey nomads and tourists.

The actions being proposed by the proponent to mitigate traffic and transport issues could be more effectively implemented and monitored if consolidated into a single Traffic and Travel Safety Plan. The proponent is encouraged to undertake local level traffic and travel safety education in an attempt to transfer the intended high occupational health and safety standards in the mining industry to the local community.

## PROPONENT RESPONSE

To address this issue the proponent proposes a combined review of fatigue management and rest areas west of Emerald. The review should be coordinated by RAAG and include the following stakeholders:

- DTMR (Main Roads)
- South Galilee Coal Mine
- Kelvin’s Corner Coal Mine
- North Alpha Coal Mine
- Waratah Coal
- Regional Councils
- QPS, and
- QTA.

It is expected that the review will lead to developing guidelines for a uniform Road User Management Plan. The RUMP will then form part of employee induction training for all staff working on site.

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