



Bulga Coal Complex Environmental Management Strategy Plan

Table of Contents

1.	Purpose.....	4
2.	Scope	4
3.	Supplementary Documents.....	4
4.	Environmental Planning.....	4
4.1	Annual Planning Process	4
4.2	Environmental Aspects & Impacts	6
4.3	Baseline Environmental Studies.....	7
5.	Environmental Management	8
5.1	Environmental Performance	8
5.1.1	Roles and Responsibilities	8
5.1.2	Managing Cumulative Impacts.....	10
5.1.3	Emergency Response	10
5.2	Environmental Systems.....	11
5.2.1	Data Tools.....	11
5.2.2	File System	12
5.3	Environmental Controls	12
5.3.1	Carbon Management	12
5.3.2	Compliance Management	12
5.3.3	Statutory Approval Management	14
5.3.4	Cultural Heritage Management	15
5.3.5	Surface Blast Management	15
5.3.6	Exploration and Drilling.....	15
5.3.7	Hydrocarbon Management.....	16
5.3.8	Air Quality and Greenhouse Gas Management	16
5.3.9	Noise Management.....	17
5.3.10	Pipeline Management	18
5.3.11	Tailings Management.....	18
5.3.12	Water Management.....	19
5.3.13	Sediment and Erosion	19
5.3.14	Land and Property Management	20
5.3.15	Rehabilitation Management	20
5.3.16	Mine Closure Planning	20
5.3.17	Biodiversity Management	21
5.3.18	Subsidence Management.....	21
5.3.19	GIS Spatial Data Management	22
5.3.20	Waste Management.....	23

5.3.21	Environment and Community Training	23
6.	Communications	24
6.1	Internal Communications.....	24
6.2	External Communication.....	24
6.3	Complaints Management.....	25
6.4	Dispute Resolution	26
7.	Environmental Reporting.....	26
7.1	Internal Reporting	26
7.2	External Reporting	27
8.	Review and Improvement.....	28
8.1	Environmental Monitoring.....	28
8.2	Environmental Inspections.....	28
8.3	Environmental Audits.....	29
8.4	Incidents and Corrective Action	30
8.5	Adaptive Management	32
9.	DA Compliance Table.....	32
10.	Document Information	33
10.1	Related Documents.....	33
10.2	Change Information	36
Appendix A - Bulga Coal Complex EMS Documents		39
Appendix B - Bulga Complex Environmental Monitoring Sites		40
Appendix C - Bulga Complex Water Monitoring Sites		41
Appendix D - Bulga Coal Leases, Licences, Consents and Other Approvals		42
Appendix E - Department of Planning and Environment.....		45

1. Purpose

This environmental management strategy outlines how Bulga Coal manages environment and community aspects, impacts and performance. It provides a framework for the standards, plans and procedures implemented so operations are managed in accordance with Glencore's business principles, Glencore's SD Policy and Standards and all relevant licences and approvals held by Bulga Coal.

2. Scope

This document relates to the Bulga Coal Complex, incorporating the Bulga Open Cut and Bulga Underground Operations. The Bulga Coal Environmental Management Strategy is hereafter referred to in this text as the EMS.

3. Supplementary Documents

The supporting documents relevant to this EMS are shown in *Appendix A*.

4. Environmental Planning

The elements of this EMS include:

- a) the framework for environmental management at Bulga Coal utilising the principles of ISO14001;
- b) the adoption by Bulga Coal of the Glencore HSEC Management System Framework;
- c) a framework to assist with the compliance of Bulga Coal development consents and other relevant licences and approvals;
- d) the strategy by which Bulga Coal builds and maintains relationships and interactions with internal and external stakeholders, in particular maintaining our relationship with the local community; and
- e) to assist Bulga Coal personnel and contractors in administering their responsibilities regarding environmental management.

4.1 Annual Planning Process

Each operation undertakes an annual management review of environment and community issues and performance. The review provides each operation with a detailed understanding of key environmental aspects and impacts prior to participating in the Bulga Coal E&C BBRA. The annual management review considers the following factors:

- a) outcomes from monitoring and review activities;

- b) internal and external SD inspections, assessments and audit reports addressing: operational, specialist, functional, management system, legal compliance and stakeholder requirements; or other external commitments;
- c) health, safety, environment and community incident reports and investigation findings;
- d) performance data, trends and reports including the extent to which targets and objectives have been met;
- e) inputs and views of external stakeholders, including complaints;
- f) status of corrective and preventative actions;
- g) outcomes from previous management reviews; and
- h) Government policies and regulation, socio-economic or political developments and new scientific findings and technological developments.

The requirement to review this document or any associated plans, standards or procedures may also be triggered by future modifications to an operation's development consent or the Glencore SD Management System.

Following the annual management review SD strategies, plans, processes, objectives and targets are to be updated as part of the annual planning process. The annual risk management planning and budgeting process implemented for Bulga Coal is summarised in the flow diagram below:

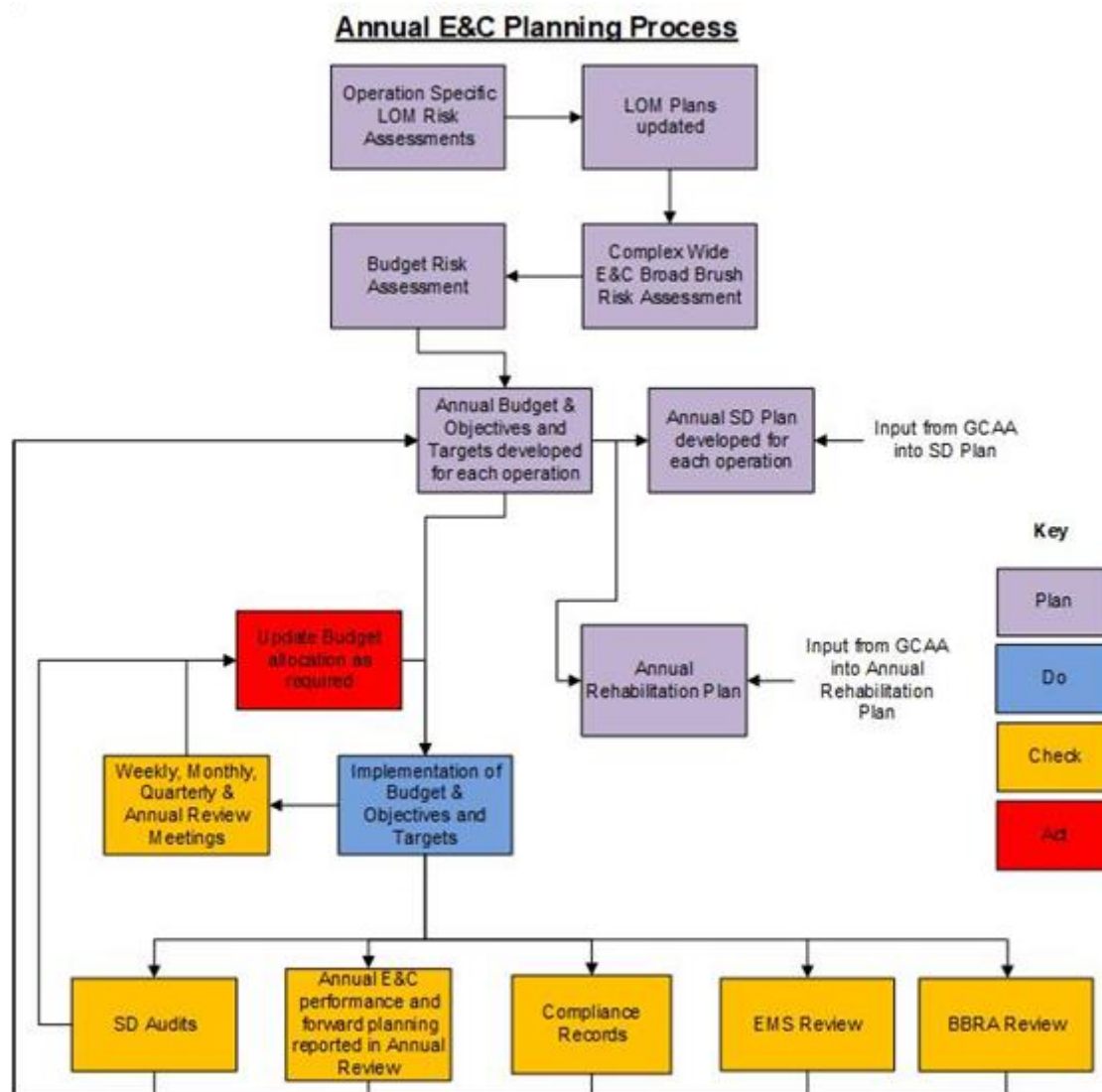


Figure 4-1 – Annual E&C Planning Process

4.2 Environmental Aspects & Impacts

Aspects and impacts at Bulga Coal are considered for operational activities, legislative requirements and internal and external stakeholder views. Key aspects and their impacts are identified during the annual Environment and Community Broad Brush Risk Assessment (E&C BBRA), which considers changes within the budget period of five years, and each operation's Life of Mine (LOM) Risk Assessment which considers changes over the rest of the operations life, i.e. at a strategic level. The BBRA is conducted in Q2 following finalisation of the LOM Risk Assessment, and it is also reviewed in Q1 at the commencement of the new year.

The E&C BBRA identifies significant environment and community aspects and impacts across the Bulga complex, and once identified their management controls are considered. This leads to either modifications to existing processes or creation of new plans, the requirements for which are then captured in the development of the site's annual SD plans and budgets.

The following inputs are considered as part of the BBRA process:

- a) baseline environmental studies;

- b) review of environmental performance data;
- c) review of any existing or proposed changes to the operations;
- d) review of relevant legislation, standards, codes and additional external requirements;
- e) industry experience; and
- f) relevant stakeholders, particularly needs, interests and local knowledge.

The E&C BBRA is conducted in accordance with the risk management processes outlined in GCAA-625378177-2844 – Risk Management. This protocol adopts the **ISO 31000:2009** process and provides step details of the Risk Management Process that sites are required to follow. The process encompasses the identification, analysis and evaluation of risks including rating and ranking systems, requirements for risk treatment and levels of authority for continued toleration of an existing risk.

4.3 Baseline Environmental Studies

Both operations at Bulga Coal have several baseline environmental studies that were conducted during application for development consents or for modifications to existing consents. The major studies are listed in the following **Table 4-1** and **Table 4-2**:

Bulga Open Cut	Year
Bulga Optimisation Project: Environmental Impact Statement	2013
Revised and Amended	2014
Revised and Amended	2015
Bulga Surface Operations Eastern Emplacement Area Modification Statement of Environmental Effects	2016
Modification 1 - Response to Submissions	2016
Bulga Optimisation Project Modification 2 – Administrative Letter of Extension	2018
Bulga Optimisation Project Modification 3 – Statement of Environmental Effects	2019
Modification 3 – Response to Submissions	2019

Table 4-1 - Bulga Open Cut Baseline Environmental Assessments

Bulga Underground Operations	Year
Bulga Coal Continued Underground Operations: Environmental Impacts Statement	2003
Statement of Environmental Effects for the Bulga Underground – Southern Mining Area Modification	2007
Beltana Underground Mine Blakefield South Subsidence Management Plan Application BSLW1 – 6	2008

Bulga Underground Operations	Year
Beltana Underground Mine Blakefield South Longwalls 7 & 8 Commonwealth Subsidence Management Plan	2009
Environmental Assessment – Blakefield North Underground Mine Project	2012
Subsidence Management Plan Application – Blakefield South BSLW7 - 9	2012
Bulga Underground Modification 7 – Statement of Environmental Effects	2019

Table 4-2 - Bulga Underground Operations Baseline Environmental Assessments

Numerous minor studies are conducted for developing management plans, as required under licence conditions, depending on whether the aspects have been adequately addressed by the initial assessments.

For deviations from the original plan that are still generally in accordance with approvals, due diligence surveys are undertaken to prevent harm. If significant changes to the operations lead to works not being generally in accordance with approvals, then new assessments are undertaken to support modifications to licences.

These baseline studies together with the conditions of licences and approvals form the core of the Bulga Coal environmental compliance management which is addressed in **Section 5.3.2**.

5. Environmental Management

5.1 Environmental Performance

5.1.1 Roles and Responsibilities

Environment and community management is regarded as part of the responsibilities of all employees and contractors at the Bulga Coal Complex.

Key personnel and their relevant environment and community management roles and responsibilities are outlined in **Table 5-1** below. More specific roles and responsibilities are outlined in the environmental management plans, procedures and standards referred to in this EMS.

Bulga Open Cut	Year
Operations Managers	- provide adequate resources for environmental management including: qualified personnel, adequate financial resources and training as required for all employees; and - ensure any proposed works associated with the operation that may have an impact on the environment or the community, have the necessary legislative approval, prior to the commencement of works.
Environment and Community Manager	develop, implement and maintain the Bulga Coal EMS;

Bulga Open Cut	Year
	- liaise with government and community stakeholders regarding environment and community matters associated with the Bulga Coal Complex; - facilitate the preparation of environmental compliance reports that cover the Bulga Coal Complex, including the AR, NPI, NGRS, EPL Annual Return and HRSTS Annual Return. Maintain a working knowledge of this EMS and be aware of all environmental legislative requirements associated with their respective operation; - liaise with senior management personnel to promote awareness and delegate tasks associated with the management of environmental issues/commitments at their respective operation; - prepare internal reports associated with the Glencore SD Management System and provide to the Glencore Group Environmental Manager; - provide environmental risk assessment and develop management protocols for proposed works associated with existing operations and any new or altered works; - provide environmental assistance and advice on legislative and approval requirements for any proposed works; and - implement corrective actions arising from environmental incidents and audits.
Environment and Community Officers/Coordinators	- maintain a working knowledge of this EMS and be aware of all environmental legislative requirements and community responsibilities associated with their respective operation; - undertake environmental management activities under instruction from their respective Environment and Community Manager; - develop and deliver necessary environmental management/awareness training to all personnel at their respective operation; - coordinate the activities of specialist sub-consultants and project personnel for environmental assessment/monitoring/auditing responsibilities; and - prepare statutory environmental reports so compliance with the approvals associated with their respective operation.
Technical Services Manager	- maintain a working knowledge of this EMS; - be aware of the environmental legislative requirements and community responsibilities associated with their respective operation; - facilitate that operations under his/her control are undertaken in accordance with this EMS and in particular, in accordance with relevant environmental management plans, procedures and standards; - provide resources for appropriate training to all site employees regarding their environmental and community roles and functions;

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Status: [Document
Status (Office)]

Effective: [Effective Date]

Owner [Owner (Office)]

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Version (Office)]

Review: [Planned
Review Date]

Page 9 of 45

Bulga Open Cut	Year
	- implement corrective actions arising from environmental incidents and audits; - allow adequate provision in the annual capital budget for undertaking required environmental capital works; - involve their respective Environment and Community Manager in the assessment of any proposed works associated with the operation that may have an impact on the environment; - maintain a high level of environmental performance at the site; and - report any pollution control incidents and/or community complaints to Bulga Coal Environment and Community Manager and/or their respective Environment and Community Superintendent as soon as practicable.
Mining Manager	- have a general awareness of this EMS - conduct their work activities in accordance with this EMS; - report all environmental incidents to the Environmental personnel or their immediate supervisor; and - participate in relevant environmental training.

Table 5-1 - Roles and Responsibilities for Environmental Management

5.1.2 Managing Cumulative Impacts

There is a requirement in each operation's development consent (**SSD-4960** and **DA 376-8-2003**) to consider cumulative impacts of the operation and develop management controls to minimise these impacts. Strategies for the management of cumulative impacts at Bulga Coal include:

- providing assistance with the development of the Upper Hunter Air Quality Monitoring Network;
- working with neighbouring mining operations with regards to the management of blast fume, dust, noise, lighting and social issues;
- sharing noise monitoring data with the neighbouring Mt Thorley Operations; and
- engaging in a stakeholder consultation program that identifies community concerns about cumulative impacts from local mining operations

Bulga Coal considers the concerns raised by community stakeholders during the annual broad brush risk assessment, included in the annual planning process (see **Section 4.1**), to develop annual objectives and targets that consider the management of cumulative impacts accordingly.

5.1.3 Emergency Response

All personnel receive emergency preparedness and response training during their site familiarisation induction. The Bulga Open Cut maintains a dedicated emergency response team who undergoes regular training and operational drills. Emergency management plans for the Bulga Complex include:

- BULOC-1104430715-1210 - Emergency Management Plan (Open Cut)**

- **BULCX-2103827161-7635 - Pollution Incident Response Management Plan** (Complex)

BULOC-1104430715-1210 Emergency Management Plan describes the measures taken by BOC so that it can respond appropriately to emergency situations and includes:

- An Emergency system overview;
- arrangements and capabilities, including external emergency service arrangements;
- a description of equipment and facilities;
- roles and accountabilities of key personnel;
- training details, including emergency management and first response; and
- evacuation details.

BULCX-2103827161-7635 Pollution Incident Response Management Plan (PIRMP) specifically outlines the response to environmental emergencies. The PIRMP also outlines the identified environmental hazards at Bulga Coal, relevant internal and external contacts, and process to follow in the event of an incident. The Bulga Complex has a shared Pollution Incident Response Management Plan (PIRMP) because the Open Cut and Underground operate under a single Environmental Protection Licence (**EPL 563**).

5.2 Environmental Systems

5.2.1 Data Tools

Bulga Coal uses six core systems for the administration of environment and community aspects and impacts. These systems are outlined in **Table 5-2**.

System	Purpose
Environmental Management System (EMS)	The collection of management plans, procedures and related documents concerning this Environmental Management Strategy. Files are stored on separate GCAA servers for the Open Cut and Underground Operations.
Microsoft Sharepoint™	The GCAA document management software and operating system used for the storage and publication of documents, including approved plans. Many of the EC management plans that cover the complex are duplicated in Sharepoint so that plans are recoverable on the OC and UG intranets. Complex-wide management plans referenced in this document often only refer to the document at one site.
Spatial Management Database (SMD)	Bulga Coal uses ArcGIS™ software to manage spatial data. The Bulga GIS Management Plan addresses the standard operation procedures for the storage and control of these spatial records.
Environmental Monitoring Database (EMD)	The repository for all ground water, surface water, dust, noise, waste, hydrocarbon, blast and meteorological records required under approved plans. The EMD also sends warning alarms to EC personnel for non-compliance records.

System	Purpose
CMO™	The GCAA approvals and licences compliance storage database. CMO is also used for scheduling compliance actions pertaining to the requirements of licences.
Consultation Manager™	The GCAA storage database for records of stakeholder consultation.

Table 5-2 Bulga Coal Complex Environmental Management Systems

5.2.2 File System

The Bulga environmental team uses a 5 branch file system to categorise and manage all documents and aspects concerning the environment and community role.

The G:Drive is utilised for Bulga Coal Complex information, whilst J:Drive is used to store information regarding Bulga Underground Operations. This file structure is outline in **Table 5-3**.

The L:Drive is used to store geospatial data, maps and information from ArcGIS, one of Bulga Coal's core data systems.

G:Drive	J:Drive
 1.1 Comittment & Policy  1.2 Planning  1.3 Implementation and Operation  1.4 Measurement and Evaluation  1.5 Review and Improvement	 4.1 Comittment & Policy  4.2 Planning  4.3 Implementation & Operation  4.4 Measurement & Evaluation  4.5 Review & Improvement

Table 5-3 – Bulga Coal Complex File Structure

5.3 Environmental Controls

5.3.1 Carbon Management

The reporting of greenhouse gas emissions at Bulga Coal is carried out using the BULCX-2103827161-4339 AQS and NGERs Reporting Procedure. This is a site procedure which outlines the national greenhouse and energy (NGER) reporting requirements and is a site user guide detailing where data can be retrieved from.

This procedure supports the higher level Glencore protocol for NGER GCAA-625378177-13662 11.13 NGER Protocol. The protocol outlines NGER reporting requirements, the management strategy including verification of data, and responsibilities at both a site and corporate level.

5.3.2 Compliance Management

Compliance management at Bulga Coal is undertaken in accordance with GCAA-625378177-10301-11.01 Compliance Management. This protocol was developed by GCAA as a system for managing compliance for environmental approvals which encompasses the following elements:

- a) environmental approvals storage;

- b) management of compliance and associated evidence within the CMO system (**Section 5.2**); and
- c) internal assurance program for environmental approvals.

Awareness of changes to standards, codes or legislation is addressed in the following ways:

- a) receipt of regular updates from GCAA legal advisers;
- b) participation in industry groups, such as the NSW Minerals Council and the Hunter Coal Environment Group;
- c) notification from the Glencore General Manager for Environment and Community;
- d) access to state and federal legislation via the internet; and
- e) adoption of the GCAA Legislation Schedule.

The requirement to provide training to personnel and contractors is assessed periodically following the Environment and Community Department becoming aware of a legislative change.

If there are changes to existing activities/processes or new projects are proposed that have potential for environmental impact, a GCAA work authorisation is required. One of the purposes for the GCAA work authorisation is consideration of whether the proposed works have the required environmental approval and that the person(s) undertaking the works have appropriately managed risks to minimise impacts on the environment and community.

Bulga Coal uses the work authorisation process in accordance with GCAA-625378177-10532 – Work Authorisation and Permit Management. The Work Authorisation and Permit System is a standardised system used across all operations which sets minimum requirements for authorising work on site. The permits align with the requirements of Glencore's Fatal Hazard Protocols, New South Wales Legislation, including Codes of Practice, and Australian or International standards, as applicable. The system outlines the different work permits which are mandatory for all tasks defined within specific criteria, namely the GCAA Work Authorisation form. The GCAA-625378177-10040 – Work Authorisation form contains a checklist of environmental aspects that must be reviewed and approved by the E&C Department prior to the commencement of any work. **Figure 5-1** the following page provides a summary of the work authorisation process for activities that affect E&C at Bulga Coal.

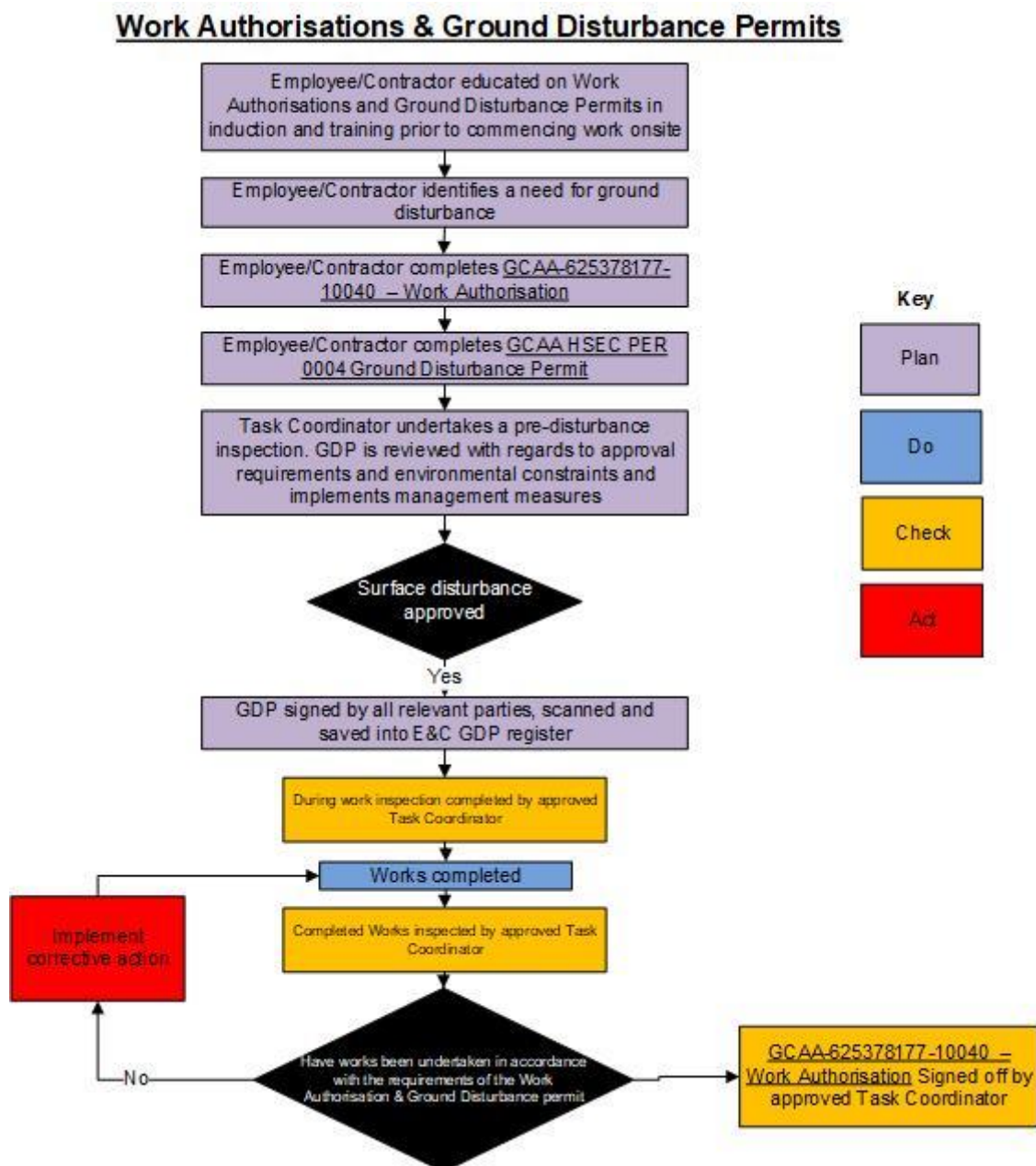


Figure 5-1 – Work Authorisations & Ground Disturbance Permit process

5.3.3 Statutory Approval Management

Bulga Coal follows a specific approvals and compliance process so that all approvals required for the continuity of the operations are obtained within the required time frame and the compliance with these approvals is maintained. The compliance to Bulga Coal licences and approvals is managed through the CMO™ compliance database in accordance with GCAA-625378177-10301 – 11.01 Compliance Management (Section 5.3.2).

In the event either operation requires a new major project approval, the steps followed are in accordance with GCAA-625378177-10328 – 11.20 Statutory Approvals – NSW. This protocol describes the primary statutory environmental and mining approvals required for the development of major coal mining projects, and for substantial modifications to existing mine operations in NSW. It also outlines the legislative processes that must be undertaken to achieve these approvals. This Protocol

document provides guidance in identifying the appropriate approval pathway to gain primary statutory approvals for a project, and identifies the range of secondary approvals that may also apply to a mining project in NSW.

A comprehensive list of Bulga Coal approvals and licences is contained in **Appendix D**.

5.3.4 Cultural Heritage Management

Both development consents at Bulga Coal have the requirement for an Aboriginal Cultural Heritage Management Plan, and as such there is a single plan for the complex, BULCX-2103827161-4225 – Aboriginal Cultural Heritage Management Plan, which was developed with consideration to the requirements of the consents and in line with the Glencore protocol GCAA-625378177-10266 – 11.21 Aboriginal Cultural Heritage Management – NSW. This Protocol provides:

- a) an overview of the relevant Aboriginal cultural heritage legislation; and
- b) a description of ACHA processes and practices applicable to the various mine development phases.

In addition, the Protocol also provides information about how ACH obligations must be recognised as part of any mining operation. Activities that impact aboriginal heritage items are conducted within the framework of BULCX-2103827161-4225 – Aboriginal Cultural Heritage Management Plan however the Underground Operations are required to also obtain Aboriginal Heritage Impacts Permits (AHIPs) from the NSW Office of Environment & Heritage. There are several current AHIPs in place and these are listed in the table in **Appendix D**.

Bulga Coal also has a collection of European heritage sites within the project boundaries. These sites are generally outside the mining footprint but far field effects, such as blasting, still need to be managed, therefore the complex has an approved plan to manage these sites, BULCX-2103827161-5242 – Historic Heritage Management Plan.

5.3.5 Surface Blast Management

The Bulga Open Cut manages the environment and community impacts of surface blasting using BULOC-1104430715-1524 – Blast Management which has been developed to address requirements of development consent approval **SSD - 4960** and the Glencore protocol GCAA-625378177-9975 – 11.12 Blast. This protocol provides guidance on the minimum site requirements relating to environment and community aspects through all phases of blasting, from pre-blast planning and design, to post-blast monitoring, data analysis/evaluation and reporting.

5.3.6 Exploration and Drilling

Exploration and drilling activities at Bulga Coal are undertaken in accordance with GCAA-625378177-10237 – 11.09 Exploration and Drilling. This protocol provides sites with a process to follow to ensure drilling activities are conducted in a healthy, safe and environmentally responsible manner and with due consideration to the community. It outlines the risk assessment process when planning a drilling project, requirements for monitoring and record keeping.

The majority of exploration drilling is conducted by the Underground Operations so there is a separate underground plan, BULUG-1844516901-2522 – Surface Exploration Management Plan. This management plan includes:

- a) the site planning process;
- b) safety and communication requirements;

- c) data collection and management;
- d) drilling procedures; and
- e) regulatory reporting requirements.

To assist with the planning of drilling programs, Environment and Community personnel across Bulga Coal undertake inspections prior to, during and post drilling, so that works are performed in a safe manner and adequate controls are in place to minimise impacts on the environment and the community. Drilling inspections are held by the geologist responsible for managing the drilling program and returned to the Environment and Community Department upon completion of the program (including rehabilitation of drill sites).

The rehabilitation of decommissioned gas well sites is undertaken using the BULUG-1844516901-3019 – Drill Pad Consolidation Rehabilitation Procedure. The purpose of this procedure is to outline the planning and implementation of rehabilitation associated with gas drainage and exploration drill pads to ensure compliance with the Mine Operations Plan (MOP). Specifically, it outlines:

- a) the planning that occurs prior to the disturbance of land and rehabilitation activities;
- b) actions taken to rehabilitate disturbed land, including methods of application; and
- c) checking and monitoring actions taken to ensure that rehabilitation has been successful.

5.3.7 Hydrocarbon Management

Hydrocarbon storage and inspections at Bulga Coal are addressed by the BULCX-2103827161-6094 – Hydrocarbon Management Plan. This plan documents the requirements for the design, installation, operation and maintenance of hydrocarbon management infrastructure as well as requirements for transportation, storage and use of hydrocarbons. This plan aims to meet the following objectives;

- a) minimise the risk of hydrocarbon spillages or leakages, which may lead to contamination and subsequent environmental harm;
- b) provide that contingencies for containment and remediation are in place to minimise environmental impacts if spillages or leakage occurs;
- c) maintain compliance with the requirements of the Bulga Coal Environmental Protection Licence (EPL) No. 563, Development Consents and relevant legislation;
- d) meet the requirements of the Glencore Coal Assets Australia (GCAA) Hydrocarbon Management Standard; and
- e) maintain compliance with relevant Australian standards for hydrocarbon storage and use.

The GCAA Hydrocarbon Management Standard GCAA-625378177-10243 – 11.07 Hydrocarbon Management provides direction to operations to support compliance with Australian Standard (AS) 1940 – 2004 The storage and handling of flammable and combustible liquids. Bulga Coal also utilises the BULCX-2103827161-7658 Hydrocarbon Management Trigger Action Response procedure which provides a system for identification, monitoring and management of petroleum hydrocarbons detected in soil, surface or groundwater.

5.3.8 Air Quality and Greenhouse Gas Management

Air Quality and Greenhouse Gas has been recognised in EC risk assessments as being a medium risk aspect for activities at Bulga Coal, especially regarding Open Cut disturbance. The conditions to manage these conditions outlined in **SSD-4960** are addressed within the BULCX-2103827161-5135 –

Bulga Coal Complex Air Quality & Greenhouse Gas Management Plan (AQGGMP). The plan was developed in accordance with the GCAA protocol GCAA-625378177-10324 – 11.10 Air Quality Management. This protocol establishes the minimum requirements for dust management across GCAA Sites, and provides the framework for coordinated dust management.

Aspects of dust management at Bulga Coal includes the treatment and maintenance of roads, timely rehabilitation of disturbed ground and the use of sprays on coal stockpiles. There is an approved monitoring network which includes depositional gauges, high-volume samplers and continuous air quality monitors the locations for which are shown in **Appendix B**.

The objectives of the air quality and greenhouse gas management plan are to:

- a) outline the air quality management system and air quality monitoring program;
- b) outline the measures implemented to minimise Scope 1 and Scope 2 greenhouse gas emissions;
- c) facilitate compliance with regulatory standards, conditions and commitments; and
- d) mitigate air quality related risks and complaints from the regulators, community and/or other stakeholders.

5.3.9 Noise Management

Noise has also been recognised as being a medium risk aspect for activities at Bulga Coal. Bulga Coal uses a noise management plan that covers both the surface and underground operations. The BULCX-2103827161-3527 – Bulga Coal Complex Noise Management Plan was developed to address the noise management requirements for both development consents, and is aligned with the commitments of GCAA-625378177-10238 – 11.11 Noise Management protocol. The protocol provides guidance and direction in regards to:

- e) the identification of effective noise management controls during the mine planning, assessment and operational phases;
- f) the implementation of noise management minimum requirements to reduce the potential for impacts, including the implementation of activity specific noise controls and site-wide management systems and procedures;
- g) the use of forecasts for early identification of adverse meteorological conditions which are likely to result in noise impacts i.e. gradient winds and temperature inversions;
- h) monitoring and reporting requirements for noise management at GCAA operations;
- i) the implementation of noise awareness training for employees to facilitate effective noise management; and
- j) provide guidance so that noise management is integrated into the entire life of mine, from mine planning to mine rehabilitation and closure.

The attended noise monitoring locations for the Bulga Complex noise monitoring program are shown in **Appendix B**.

The Underground Operations have a further requirement to manage construction noise caused by gas drainage development at Blakefield North. The approved BULUG-1844516901-10877 – Blakefield North Mine Construction Noise Management Plan permits construction operations to make noise levels greater than the operational noise limits of the BUO development consent, but only under the conditions of the plan and approved operating hours.

5.3.10 Pipeline Management

Water pipelines across Bulga Coal are not managed under a specific pipeline management plan, but are incorporated into the BULCX-2103827161-4402 – Bulga Coal Water Management Plan which is a further requirement of both development consents.

Because the BUO also has a large network of gas pipelines across the Blakefield South and Blakefield North mines, the BUO Gas Drainage Department has a series of inspections for checking these pipelines, namely:

- BULUG-1781645267-2359 – Monthly UG Gas Drainage Pipeline Inspection
- BULUG-1781645267-4175 – Gas Drainage Water Pipeline Monthly Inspection
- BULUG-1781645267-4176 – Gas Drainage Water Pipeline 6 Monthly Audit

Prior to pipelines being installed the GCAA-625378177-10248 11.02 Pipeline Management Protocol is followed to assess what hazards exist and what controls need to be in place. The protocol outlines the environmental controls required during the planning and design phase, requirements for operation and maintenance, and monitoring inspections required. When pipelines are being installed BUO uses BULUG-1844516901-2472 – Gas Drainage Poly Pipeline Installation Procedure. This procedure provides steps for the installation of Gas Drainage Poly Pipelines and associated services. The intent is to standardise the installation process thus creating consistent quality outcomes.

Most of the gas pipelines are short-term (<3yrs) so there is the BULCX-2103827161-7656 Pipeline Rehabilitation Procedure for managing the frequent surface disturbance and rehabilitation of ground where gas pipelines are buried. This is a practical procedure that outlines:

- a) the planning that occurs prior to the disturbance of land and rehabilitation activities;
- b) how disturbed land must be managed during pipeline installation;
- c) actions taken to rehabilitate disturbed land, including landform preparation and application methods; and
- d) checking, monitoring and reporting actions taken to ensure that rehabilitation has been successful.

5.3.11 Tailings Management

Bulga Coal has a single coal handling preparation plant (CHPP) therefore there is a single tailings management strategy that covers the site, namely the BULOC-1104430715-24821 – Tailings Management Plan. Bulga Open Cut operates a number Tailings Storage Facilities (TSF) in various stages throughout their lifecycles. This plan describes the requirement for the effective management of the TSF's and the various requirements that must be considered for the design, construction, management and completion of the existing, and any proposed, facilities.

Bulga Coal is also in the process of capping the Old Tailings Dam as a part of the Noise and Visual Bund. This work is performed under the BULOC-1104430715-286 – Old Tailings Dam Capping Management Plan. This plan has been developed to identify potential risks associated with the capping operations and specify the control measures that will be applied to eliminate or minimise the risks associated with these sources.

5.3.12 Water Management

Water management is also recognised as a medium risk aspect of operations across the Bulga Complex. Both development consent require a water management plan and BULCX-2103827161-4402 - Bulga Coal Water Management Plan includes all activities associated with the management of water across the complex with the exception of the potable water supply.

The objectives of the water management plan are to:

- a) minimise the contamination of clean water runoff from catchment areas upstream of the operations by directing clean water around the disturbance footprint where possible;
- b) minimise the potential effects of erosion and its associated impacts as a result of mining operations changing flows or conditions downstream;
- c) prevent the discharge of pollutants from the disturbed area except where discharges are licenced, or where the discharge will not cause environmental harm such as water suitable for release from rehabilitated areas;
- d) maximise the reuse of mine water to meet on site water consumption requirements to reduce the need for water from the Hunter River;
- e) secure access to water for the operations during periods when there is insufficient water from the IWMS; and
- f) manage the disposal of excess water in line with relevant licence and Hunter River Salinity Trading Scheme (HRSTS) conditions when excess water volumes are stored on site beyond projected future requirements.

This plan adopts the GCAA-625378177-10320 – 11.03 Water Management and GCAA-625378177-10322 – 11.05 Dams and Diversions protocols. GCAA-625378177-10320 – 11.03 Water Management specifies the site requirements for water management planning. It aims to ensure that it is linked to the mine planning process so that water management infrastructure is provided in advance of mining operations and that the water related risks are identified, managed and monitored. The purpose of GCAA-625378177-10322 – 11.05 Dams and Diversions is to minimise the safety, economic and environmental risks associated with the failure of dams, levees and diversions through the proper planning, design, construction and operation.

Monitoring of water quality occurs in accordance with the BULCX-2103827161-4402 - Bulga Coal Water Management Plan. There is an approved monitoring network which includes both surface water and ground water, the locations for which are shown in **Appendix C**.

The Minerals Council of Australia (MCA) has developed the Water Accounting Framework (WAF) to report on the water use in a consistent manner across the mining industry. GCAA has adopted the WAF as the water reporting tool for all operations and Bulga provides water reporting data using this tool. The data is then used to update the site balance in the Annual Review report.

5.3.13 Sediment and Erosion

Erosion and sediment control is managed under the BULCX-2103827161-7624 – Erosion and Sediment Control Plan (ESCP) which was developed in line with the GCAA-625378177-10323 – 11.06 Erosion and Sediment Control protocol. The protocol outlines the requirements for the planning and design of sediment and erosion controls on GCAA sites, and aims to prevent the pollution of downstream waterways and ensure that sites are minimising the environmental impacts of the works.

The Bulga ESCP provides the overarching details for how erosion and sediment control is managed across the Bulga Coal Complex including broad scale figures showing the location of more permanent erosion and sediment control structures. Individual erosion and sediment control plans for site specific disturbance activities are developed in accordance with this plan and generally remain separate to the broad scale figures in the plan. When works require individual designs these are done under GCAA-625378177-10323 – 11.06 Erosion and Sediment Control.

The ESCP does not address the broader issue of site water management, which is addressed within GCAA-625378177-10320 – 11.03 Water Management (Section 5.3.12), however the management measures described in both plans are strongly related. The ESCP should be implemented in conjunction with the Bulga Coal Water Management Plan so the objectives of this ESCP are met.

5.3.14 Land and Property Management

The Bulga coal mining leases cover an area of over 5,000 hectares, with a substantial amount of the largest lease (**ML 1547**) containing private farming land and non-surface disturbed mine-owned buffer lands. There are also several rental properties, leased vineyards and an olive grove. Programmes are in place to manage pests, weeds, fire breaks on these buffer lands.

Bulga Coal is required by GCAA to submit an annual rehabilitation and land management plan, in accordance with GCAA-625378177-10241 11.16 Rehabilitation Management protocol. The intent of this protocol is to provide site guidance on rehabilitation planning, resourcing and execution to provide for progressive rehabilitation and rehabilitation outcomes that meet desired company, legal and stakeholder objectives for sustainable post-closure landscapes. The annual rehabilitation and land management plan includes the land management strategy on mine-owned land that is not subject to mining as well as mined areas.

5.3.15 Rehabilitation Management

Rehabilitation across the Bulga Complex is conducted in line with the DRE approved mining operations plans:

- GCAA-102386433-4625 Bulga Open Cut Mining Operations Plan 2020 - 2023
- GCAA-1023863433-4626 Bulga Underground Operations Mining Operations Plan 2018 - 2023

Bulga Coal is required by GCAA to submit an annual rehabilitation and land management plan in line with the GCAA-625378177-10241 – 11.16 Rehabilitation Management protocol. This annual plan covers which areas are planned to be disturbed and which will be rehabilitated during that year. The results are then reported in the Bulga Coal Complex Annual Review (AR).

The Open Cut also operates under an overarching strategy, BULOC-1104430715-4618 – Bulga Open Cut Rehabilitation Strategy. The purpose of this site specific strategy is to provide a structured and documented process for managing and improving rehabilitation activities at the Bulga Open Cut.

5.3.16 Mine Closure Planning

Because the Bulga Open Cut and Underground Operations share the same principal mining lease (**ML 1547**), there is a single closure plan BULCX-2103827161-4406 – Bulga Coal Complex Conceptual Mine Closure Plan for the complex. This protocol outlines the requirements for the care-and-maintenance phase of a mine life, and to achieve consistent closure planning. The protocol also outlines requirements for the development, implementation and review of Mine Closure Plans across the mine life cycle, taking into account business drivers and relevant environmental, physical, economic and social factors.

The purpose of the Bulga Mine Closure Plan is to:

- a) define the objectives and criteria for mine closure;
- b) nominate the post mine land use for the Bulga Coal Complex within mining leases: **ML 1547, ML 1494, ML 1674, CL 224, ML 1717 and ML 1788**;
- c) describe strategies to minimise the adverse socioeconomic effects associated with mine closure;
- d) describe measures that will be implemented to minimise and manage the ongoing environmental effects of the Bulga Coal Complex;
- e) describe how the environmental performance of the Bulga Coal Complex will be monitored during and post closure; and
- f) satisfy the requirements of the GCAA Mine Closure Protocol.

5.3.17 Biodiversity Management

The Bulga Complex has a single BULCX-2103827161-4916 - Biodiversity Management Plan with the purpose of outlining the strategies to be employed for the management of remnant vegetation and fauna species within the Bulga Coal Complex, in accordance with biodiversity requirements in the two development consents. This plan also outlines the offset management strategy for the Biodiversity Offset Areas (BOA's) established for the Bulga Optimisation Project and the Blakefield North Underground Mine Project.

Each of the offset areas have their own plans as follows:

- BULCX-2103827161-4917 - Condran Biodiversity Offset Management Plan
- BULCX-2103827161-4918 - Broke Road Biodiversity Offset Management Plan
- BULCX-2103827161-4919 - Reedy Valley Biodiversity Offset Management Plan
- BULCX-2103827161-4921 - Weeping Myall Biodiversity Offset Management Plan
- BULCX-2103827161-4920 - Wollombi Brook Biodiversity Conversation Area Management Plan
- BULCX - Vere Biodiversity Offset Management Plan (being drafted)

The GCAA protocol GCAA-625378177-10326 – 11.18 Biodiversity Management was referenced when developing the site management plan. The protocol describes:

- a) How GCAA will meet the objectives and commitments for biodiversity offsetting contained within relevant statutory requirements, planning instruments and other strategic documents for NSW, Qld and the Commonwealth;
- b) the process adopted by GCAA for assessing impacts on biodiversity, defining biodiversity offset requirements, identifying and securing suitable offset areas and managing the offsets for biodiversity gain; and
- c) GCAA's strategic direction for biodiversity offsetting, providing the overarching management context from which the site-specific offset strategies and management approaches will be developed and implemented.

5.3.18 Subsidence Management

Following the cessation of underground mining at the BUO which occurred in 2018, the BULCX-2103827161-7661 Post Mining Subsidence Management Plan was developed to consolidate all

subsidence monitoring and management required to be undertaken at Bulga Underground Operations. This SMP includes:

- a) identification of natural and built features which require ongoing monitoring and management until such time that the Director General that this has been satisfied;
- b) identification of potential risks to surface safety within the SMP Area;
- c) monitoring, review and revision requirements for this SMP;
- d) reporting requirements; and
- e) incident Notification.

The E&C aspects of subsidence are managed using the E&C core systems mentioned in **Section 5.2**.

A comprehensive list of management plans required under the SMPs is shown in **Appendix D**.

5.3.19 GIS Spatial Data Management

As referenced in **Section 5.2** the Bulga Coal Spatial Management Database (SMD) is a core E&C system. The operating procedure for managing the SMD is the [BULCX-2103827161-3122 – Geographic Information Systems \(GIS\) Management Plan](#). This plan describes the structure, use and maintenance of the GIS for Bulga Coal Complex and was developed in line with [GCAA-625378177-10327 – 11.19 GIS Spatial Data Management](#) protocol. The purpose of this protocol is to achieve a consistent approach towards GIS spatial data management across Operations and Projects.

The SMD stores the following information shown in **Table 5-4**.

Folder	Information
Documents	Non-spatial information that describes how the SMD operates. This includes this document, procedures, support documents (AHIMS Site Cards, subsidence photos), styles and scripts.
Geospatial Data	Vector and raster data within data themes.
Mapping	Contains mapping templates and workspaces. Templates have been developed for specific reporting/constraints requirements, overarching themes and blank bases to complete mapping. Templates are saved as mapping documents/workspaces for manipulation and future retrieval.
Plots	Mapping outputs for use in reporting, constraints analysis, field mapping and community distribution. All plots are maintained within this file as an original record and copied to other locations if required. The structure of the Plots folder mirrors the mapping folder.
Transfer	GIS related data and information that is received to or sent from site. All received and sent data is maintained in the transfer folder as a record of the original data package.
Archive	All historic ArcGIS and MapInfo datasets and workspaces.

Table 5-4 - Bulga Coal Complex SMD structure.

5.3.20 Waste Management

Waste across the Bulga Complex is managed under the BULCX-2103827161-4003 – Bulga Coal Complex Waste Management Plan. This plan provides all employees and contractors with standards and instruction on the correct handling, storage and disposal of waste materials and encouraging efficient resource use and recovery. It also assist sites to comply with legislation, regulations, standards and development approvals that apply to the site; and the appropriate monitoring, reporting and audit waste management performance. The site waste management plan was developed in line with the GCAA-625378177-10249 – 11.08 Waste Management protocol. The purpose of the protocol is to:

- a) provide guidance for effective non-mineral waste management practices to be implemented at GCAA sites to minimise and recycle waste;
- b) ensure compliance with applicable Commonwealth, State legislation and conditions of relevant approvals;
- c) ensure safe and appropriate handling, treatment and disposal of all waste generated at GCAA sites; and
- d) facilitate monitoring, reporting and auditing of waste management performance.

5.3.21 Environment and Community Training

The Bulga Coal HS&T department maintain a Training Needs Analysis (TNA) database. The TNA links roles within the organisations with mandatory and recommended skills training including environmental knowledge. Site training coordinated by HS&T departments is guided by GCAA-625378177-10240 – 11.14 Environment and Community Training. The purpose of this protocol is to set minimum requirements for training environment and community personnel. The protocol sets the expectations for site TNAs in relation to Environment and Community personnel.

A framework specific to environmental management is delivered to all Bulga Coal Complex personnel and contractors in each operation's site familiarisation induction. The induction course provides employees and contractors with an overview of the following environmental management considerations:

- a) environmental policy;
- b) legislative requirements;
- c) an overview of the Environmental Management System;
- d) incident response procedures and contacts; and
- e) key environmental management considerations for relevant work areas.

In addition to induction environmental awareness training, the Environment and Community Department delivers targeted training packages for specific environmental management issues to selected employees and contractors.

6. Communications

6.1 Internal Communications

Bulga Coal recognises that effective communication of E&C aspects is necessary for the implementation of management measures. Communication methods are shown in **Table 6-1**.

Type	Frequency	Description
BOC Production	Daily	Review of previous 24hr KPIs
NSW E&C Teleconference	Weekly	Report by all NSW sites on E&C aspects and incidents
BCC E&C Planning Meeting	Weekly	Review of environmental performance, planned works and tracking against each operations E&C Work Schedule.
BOC mine planning	Weekly	Mine planning, ground disturbance and rehabilitation
BCC water meeting	Weekly	Planning session for water related infrastructure and storage across the complex
BOC Site Managers Meetings	Fortnightly	Report on EC management by Bulga Coal ECM to Open Cut Senior Leadership Team.
Communications Session	Monthly	Includes E&C aspects slides to crews
NSW E&C Meeting	Quarterly	Update by all sites and GCAA on performance.
EMS review and BBRA	Annual	Broad brush risk assessment against both operation's Life Of Mine plans, leading to development of each EC budget and update of the Bulga Complex EMS.

Table 6-1 - Internal Environmental Communication Sessions

6.2 External Communication

As required by GCAA, Bulga Coal develops an engagement strategy each year, the [BULCX-2103827161-7652 – Stakeholder Engagement Strategy \(SES\)](#).

Bulga Coal promotes early engagement of stakeholders in order to facilitate open and honest communication with all community groups and individuals who have the potential to be affected by the operations. Stakeholder engagement is implemented throughout the project's lifecycle – from concept through to closure – so as to promote Sustainable Development and minimise social impacts.

The Bulga Complex Stakeholder Engagement Strategy has been developed to assist in:

- building and maintaining effective relationships with our stakeholders;
- engaging with our local communities;
- Investing in our local communities;

- d) meeting the requirements of the Glencore HSEC Framework;
- e) maintaining our social licence to operate; and
- f) recording all stakeholder communication in Consultation Manager™.

The plan includes a detailed engagement plan that details the stakeholder group, how they will be engaged, the purpose, and the frequency of the engagement. The key stakeholders and communication and feedback considerations are also reviewed annually. A Community Development Plan also forms part of the SES, which outlines the requirements of planning, managing and reviewing community development and investment activities at our site.

Bulga aims to keep the local community and relevant agencies informed about the operation and environmental performance of the development through:

- a) consultation with external stakeholders;
- b) operation of the public website;
- c) environmental Monitoring Reports published on the public website;
- d) community Consultative Committee meetings;
- e) community Newsletters;
- f) community BBQs;
- g) Annual Reviews published on the public website; and
- h) website enquiry form etc.

Feedback on our environmental performance, engagement techniques and community investment is encouraged and received through the following methods:

- a) consultation with external stakeholders;
- b) consultation feedback;
- c) 24 hour complaints line;
- d) feedback surveys;
- e) CCC meetings; and
- f) website enquiry form etc.

6.3 Complaints Management

Bulga Coal implements a complaints hotline for handling the conflict resolution process. The conflict resolution process includes:

- a) acknowledging all complaints, responding to the complainant within 24 hours, where practicable;
- b) registering all complaints in CMO;
- c) investigating complaints impartially giving proper consideration to the facts and the circumstances prevailing at the time;
- d) implementing corrective actions if required;
- e) reporting to relevant stakeholders of investigation outcomes and corrective actions taken; and

Complaints are managed in accordance with GCAA-625378177-10296 – 10.05 Complaints Management. This protocol provides a process to ensure that complaints received by GCAA and its

operations are properly documented and handled in accordance with licence requirements and company policy.

Details of complaints received by Bulga Coal are reported to stakeholders at Community Consultative Committee meetings and in the Annual Review.

6.4 Dispute Resolution

In the event of a disagreement between Bulga Coal and a member of the community, Bulga Coal will liaise and communicate with the community member to seek to understand the concern and reach a resolution.

If a resolution cannot be achieved, disputes and/or negotiations will be initiated and managed in accordance with the Development Consents. Appendix 3 of **DA 376-8-2003** details an Independent Dispute Resolution Process.

7. Environmental Reporting

7.1 Internal Reporting

Bulga Coal recognises that effective reporting of E&C aspects is necessary for the implementation of management measures and for group reporting of activities. The scheduled internal reporting of E&C aspects is shown in **Table 7-1**.

Type	Frequency	Description
GCAA Environmental Report	Monthly	Summary of main E&C aspects for the previous month
GCP Reporting	Monthly	Site records used for annual SD reporting to Glencore
SAP ERS	Monthly	Site records used for emissions reporting
E&C progress report	Quarterly	Presentation to NSW E&C sites on recent management of EC aspects
Critical Control Report	Based on GCAA SD Framework	Scheduled review of results against each GCAA Critical Control

Table 7-1 – Internal Environmental Reporting Requirements

7.2 External Reporting

Many of the approvals and licences held by Bulga Coal require forms of external reporting, a summary of which is shown below in **Table 7-2**.

Report	Site	Recipient	Requirement
EPL Annual Return and Statement of Compliance	BCC	EPA	EPL 563
Hunter River Salinity Trading Scheme (HRSTS) Annual Return	BCC	EPA	Hunter River Salinity Trading Scheme
Annual Review (AR)	BCC	DPIE, DRE, CCC, Singleton Council Bulga website for the public	ML 1494/ML 1547/ML 1674/ML 1717/ML 1788 CL 224 DA SSD-4960 DA 376-8-2003
National Pollutant Inventory Report (NPI)	BCC	EPA	National Environment Protection Measure (NEPM)
National Greenhouse and Energy Reporting (NGERS)	BCC	DoE (Canberra)	National Greenhouse and Energy Report Act 2007
Quarterly Environmental Monitoring Report	BCC	Bulga website for the public	DA SSD-4960 DA 376-8-2003
Quarterly Noise Monitoring Report	BCC	Bulga website for the public	DA SSD-4960 DA 376-8-2003
Dam Safety NSW Annual Report	BOC	Dam Safety NSW	Dams Safety Act 2015 Dams Safety Regulation 2019
Annual Compliance Report	BCC	DoE (Canberra)	EPBC 2002/773 EPBC 2012/6637 EPBC 2018/8300
Community Newsletters	BCC	Distributed quarterly to residents in Bulga, Milbrodale and Broke	Stakeholder Engagement Strategy
CCC Meetings	BCC	Biannual review of site management of E&C aspects	DA SSD-4960 DA 376-8-2003

Table 7-2 – External Environmental Reporting Requirements

8. Review and Improvement

8.1 Environmental Monitoring

Monitoring of environmental values across a range of aspects is contained in the many management plans and procedures listed in **Section 5.3**. The purpose for this monitoring is to provide measures of performance to compare against objectives, targets and performance criteria specified in Bulga Coal approval and licence conditions. Trained personnel undertake the monitoring using industry accepted techniques with equipment calibrated to relevant Australian standards, with analysis of all samples being completed in NATA approved laboratories. An overview of the sampling locations are shown in **Appendix B and Appendix C**.

8.2 Environmental Inspections

Inspections are carried out as required under each supplementary management plan at a frequency that matches the aspects and risks. See **Appendix A** for a full list of the E&C management plans and procedures.

Monthly environmental housekeeping inspections are undertaken by the E&C Department at each operation, with the objective being to identify any potential non-compliances or environmental incidents that have not been previously identified/reported. Undertaking inspections also maintains a visual presence around the site to promote environmental awareness to mine personnel and contractors. Maintaining site familiarity by ensuring E&C personnel are aware of any physical changes to operations or processes at the site is also promoted by field inspections. A summary of the routine inspections carried out across the Bulga Complex is listed in **Table 8-1**.

Type	Frequency	Responsibility
Behavioural Inspections and Planned Task Observations	Monthly in accordance with the site Assurance Plan schedule	All personnel
E&C Work Authorisation	As required on a risk-based frequency	Task coordinators
Review of CMO approval document compliance	According to the Bulga Coal CMO audit schedule	All E&C personnel
Waste and spill response equipment	Weekly	Contractor
Environmental housekeeping	Monthly	Environment and Community team members
Erosion and sediment control structures	Quarterly and following rainfall events (>20mm)	Environment and Community Coordinator

Type	Frequency	Responsibility
Buffer land management	Annual	Contractor
Offsets	Bi-annual	Environment and Community Coordinator
Offsets	Annual	Contractor
Rehabilitation	Annual	Environment and Community Coordinator
Flora and fauna	Annual	Contractor
Subsidence	Annual	Environment and Community Officer

Table 8-1 - Environmental Inspections

Non-compliance identified during an inspection will have corrective and/or preventative actions developed and tracked in CMO, as well as the completion and effectiveness of the corrective and/or preventative actions.

8.3 Environmental Audits

Auditing at Bulga Coal is undertaken as required under each supplementary management plan at a frequency that matches the aspects and risks. Audits determine compliance with Glencore, site approvals and applicable external standards. They are also used to evaluate the effectiveness of the site's environmental management system and to identify system deficiencies and opportunities to correct and continuously improve performance. A summary of E&C related audits undertaken at Bulga Coal is provided in **Table 8-2 and Table 8-3** below.

Type of Audit	Frequency	Description	Arranged by
Glencore Fatal hazard audits	Determined by GCAA	Targeted audit on compliance with Glencore Fatal Hazard management	GCAA
3rd Party External SD Risks and Verification Audits	Every three years	In depth assessment of the 5 or 6 specific risks that have material proportions	GCAA HS and EC General Managers
Internal Environmental Compliance audit	Every three years – six months prior to external compliance audit	Audit against Development Consent conditions and associated approvals	GCAA Compliance Coordinator
Other Internal audits	As determined by operation's level of risk	Operations and projects conduct their own HSEC inspections and audits as appropriate to their level of HSEC risk	Environment and Community or Operations Manager

Number: BULCX-1254107625-5

Status: [Document Status (Office)]

Effective: [Effective Date]

Owner [Owner (Office)]

Version: [Document Version (Office)]

Review: [Planned Review Date]

Page 29 of 45

Table 8-2 - Internal Audits

Type of audit	Frequency	Description	Arranged by
External HSEC systems audits (Glencore or other)	At least once every two years (or as determined by Glencore Executive HSEC Committee)	Formal health and safety system audit, based upon requirements of Glencore Safety & Environment Management Frameworks, and Glencore HSEC standards and Core Hazard audit process	GCAA HS and EC General Managers
External – MCA Framework Sustainable Development	Annually	Formal audit against Australian Minerals Council – Framework for Sustainable Development	GCAA EC General Manager
External Environmental Compliance audit	Each site every three years	Compliance audit against Environmental legislation and Development Consent conditions (Refer to Glencore APP PRO 002)	BCC ECM
Other Environmental audits	As determined by Glencore Executive HSEC Committee	Targeted audits on focus areas e.g. waste management, etc.	GCAA EC General Manager

Table 8-3 - External Audits

Following completion of an audit an action plan summarising the recommendations, planned actions, accountabilities and due-by dates is completed. The action plan is then added to CMO to manage the identified actions.

8.4 Incidents and Corrective Action

An incident or non-compliance is defined as:

- any inspection/test result that does not meet the acceptance criteria specified in any environmental approvals or relevant standard or legislation;
- any notice of non-compliance issued by a government agency with environmental jurisdiction;
- any non-compliance with identified objectives and targets;
- any action that causes unapproved environmental harm; or
- a community complaint.

Bulga Coal record incident data in CMO (within two working days) to allow retrieval of records for analysis and reporting. Incidents to be reported include:

- HSEC Hazards;
- near misses;

- c) injury, illness or disease;
- d) environmental incidents;
- e) equipment damage or loss;
- f) community complaints, issues or concerns;
- g) impact to corporate image or reputation; and
- h) non-compliance issues.

The incident or non-compliance may be from routine inspections, audits or monitoring, or it can be from an external complaint or an internal accident.

Bulga Coal utilises the incident reporting procedures [BULOC-1104430715-2299 - Hazard and Incident Management Procedure](#) and the [BULCX-2103827161-7635 – Pollution Incident Response Management Plan \(Section 5.1.3\)](#) which is available to the public on the Bulga Coal external website.

[BULOC-1104430715-2299 - Hazard and Incident Management Procedure](#) outlines:

- a) the hazard management process including hazard identification, reporting and feedback;
- b) the incident management process including response to incidents, investigating incidents, communication and training; and
- c) the verification and assurance of incidents.

Incident reporting requirements are shown in **Table 8-4** below.

Notification	Covers	Recipient	Requirement
Immediately	Pollution incident that causes, or may lead to, material harm to the environment	EPA, DPIE, DRE, Ministry of Health, WorkCover, Singleton Council and emergency services	EPL 563 DA SSD-4960 DA 376-8-2003
Immediately	Pollution of waters	EPA	EPL 563
As soon as practicable	Blast limit exceedance	EPA	EPL 563
Within 7 days	Exceedance of the limits/performance criteria of the consent	Written report to DPIE and DRE containing; Date, time and nature of exceedance/incident Identifies the cause of exceedance/incident Actions to date; and Proposed measures to address the exceedance	EPL 563 ML 1494 ML 1547 ML 1674 ML 1717 ML 1788 CL 224 DA SSD-4960 DA 376-8-2003

Notification	Covers	Recipient	Requirement
By the end of shift	All HS and EC incidents on site	GCAA HS and EC General Managers	GCAA HSEC Incident Notification and Reporting

Table 8-4 - Incident Notifications

All Category 2 or greater environmental incident triggers an Incident Cause Analysis Method (ICAM) investigation form which the appropriate corrective or preventative actions are raised.

8.5 Adaptive Management

Where an exceedance of the performance measures in either of the Bulga Coal development consents has occurred, at the earliest opportunity the site will:

- take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; and
- consider all reasonable and feasible options for remediation (where relevant) and submit a report to the DPIE describing those options and any preferred remediation measures or other course of action.

9. DA Compliance Table

The following **Table 9-1** is a cross reference between sections of this EMS and the Glencore standards as well as the Open Cut Development Consent conditions.

EMS Requirement	Relevant Section
Glencore	
Glencore Coal Assets Australia (GCAA) Environment Standard	This document
Glencore Coal Assets Australia (GCAA) HSEC Management System	This document
SSD-4960, DA 376-8-2003	
Section 5 Environmental Management Strategy. This strategy must:	
(b) provide the strategic framework for environmental management of the Bulga mine complex	Appendix A
(c) identify the statutory approvals that apply to the development	Appendix D
(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development	Section 5.1.1
(e) describe the procedures that would be implemented to:	

EMS Requirement	Relevant Section
- keep the local community and relevant agencies informed about the operation and environmental performance of the development; - receive, handle, respond to, and record complaints; - resolve any disputes that may arise during the course of the development; - respond to any non-compliance; - respond to emergencies;	<i>Section 6.2</i> <i>Section 6.3</i> <i>Section 6.4</i> <i>Section 8.4</i> <i>Section 5.1.3</i>
(f) include: - copies of any strategies, plans and programs approved under the conditions of this consent; and - a clear plan depicting all the monitoring required to be carried out under the conditions of this consent.	Refer to copies of approved plans at www.bulgacoal.com.au <i>Appendix B and Appendix C</i>

Table 9-1 – EMS Requirements

10. Document Information

10.1 Related Documents

Related documents, listed in **Table 10-1** below, are internal documents directly related to or referenced from this document.

Number	Title
BULCX-2103827161-7652	<u><i>Bulga Coal Stakeholder Engagement Strategy</i></u>
BULCX-2103827161-3122	<u><i>Bulga Coal Complex Geographic Information Systems (GIS) Management Plan</i></u>
BULCX-2103827161-3527	<u><i>Noise Management Plan</i></u>
BULCX-2103827161-4003	<u><i>Bulga Coal Complex Waste Management Plan</i></u>
BULCX-2103827161-4225	<u><i>Aboriginal Cultural Heritage Management Plan</i></u>
BULCX-2103827161-4339	<u><i>AQS and NGRS Reporting Procedure</i></u>
BULCX-2103827161-4402	<u><i>Bulga Coal Water Management Plan</i></u>
BULCX-2103827161-4406	<u><i>Bulga Coal Complex Conceptual Mine Closure Plan</i></u>
BULCX-2103827161-4916	<u><i>Biodiversity Management Plan</i></u>
BULCX-2103827161-4917	<u><i>Condron Biodiversity Offset Management Plan</i></u>

Number: BULCX-1254107625-5

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Owner [Owner (Office)]

Version: [Document
Version (Office)]

Review: [Planned
Review Date]

Page 33 of 45

Number	Title
BULCX-2103827161-4918	<u>Broke Road Biodiversity Offset Management Plan</u>
BULCX-2103827161-4919	<u>Reedy Valley Biodiversity Offset Management Plan</u>
BULCX-2103827161-4920	<u>Wollombi Brook Biodiversity Conservation Area Management Plan</u>
BULCX-2103827161-4921	<u>Weeping Myall Biodiversity Offset Management Plan</u>
BULCX-xxxxxxxxxx-xxxx	<u>Vere Biodiversity Offset Management Plan</u>
BULCX-2103827161-5135	<u>Air Quality Management Plan</u>
BULCX-2103827161-5242	<u>Historic Heritage Management Plan</u>
BULCX-2103827161-7624	<u>Bulga Coal Complex Erosion and Sediment Control Plan</u>
BULCX-2103827161-7635	<u>Bulga Complex Pollution Incident Response Management Plan</u>
BULCX-2103827161-7656	<u>Pipeline Rehabilitation Procedure</u>
BULCX-2103827161-7658	<u>Hydrocarbon Management Trigger Action Response</u>
GCAA-625378177-2844	<u>Risk Management Standard</u>
GCAA-625378177-10301	<u>11.01 Environmental Compliance Management</u>
GCAA-1023863433-4625	<u>Bulga Coal Open Cut Mining Operations Plan 2020 - 2023</u>
GCAA-1023863433-4626	<u>Bulga Underground Operations Mining Operations Plan 2018 - 2023</u>
GCAA-625378177-10320	<u>11.03 Water Management</u>
GCAA-625378177-10296	<u>10.05 Community Complaint Management</u>
GCAA-625378177-10323	<u>11.06 Erosion and Sediment Control</u>
GCAA-625378177-10243	<u>11.07 Hydrocarbon Management</u>
GCAA-625378177-10249	<u>11.08 Waste Management</u>
GCAA-625378177-10237	<u>11.09 Exploration and Drilling</u>
GCAA-625378177-10324	<u>11.10 Air Quality Management</u>
GCAA-625378177-10238	<u>11.11 Noise Management</u>
GCAA-625378177-9975	<u>11.12 Blast</u>
GCAA-625378177-10240	<u>11.14 Environment and Community Training</u>
GCAA-625378177-10242	<u>11.15 Land and Property Management</u>

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Version: [Document
Version (Office)]

Review: [Planned
Review Date]

Page 34 of 45

Number	Title
GCAA-625378177-10241	<u>11.16 Rehabilitation Management</u>
GCAA-625378177-10325	<u>11.17 Mine Closure Planning</u>
GCAA-625378177-10326	<u>11.18 Biodiversity Offset Management</u>
GCAA-625378177-10327	<u>11.19 GIS Spatial Data Management</u>
GCAA-625378177-10328	<u>11.20 Statutory Approvals - NSW</u>
GCAA-625378177-10266	<u>11.21 Aboriginal Cultural Heritage - NSW</u>
GCAA-625378177-10531	<u>Work Authorisation and Permit System</u>
GCAA-625378177-10040	<u>Work Authorisation</u>
BULOC-1104430715-286	<u>Old Tailings Facility Capping</u>
BULOC-1104430715-1210	<u>Emergency Management Plan</u>
BULCX-2103827161-4922	<u>Tree Felling Procedure</u>
BULOC-699580939-6	<u>Environment and Community Training and Competency Management Plan</u>
BULOC-1104430715-1524	<u>Blast Management Plan</u>
BULOC-1104430715-2299	<u>Hazard and Incident Management Procedure</u>
BULOC-1104430715-4618	<u>Bulga Open Cut Rehabilitation Strategy</u>
BULOC-1104430715-24821	<u>Tailings Management Plan</u>
BULCX-780170659-2914	<u>Hunter River Salinity Trading Scheme Operating Procedure</u>
BULUG-1844516901-2472	<u>Gas Drainage Poly Pipeline Installation</u>
BULUG-1844516901-2522	<u>Surface Exploration Management Plan</u>
BULUG-1844516901-3018	<u>Pipeline Rehabilitation Procedure</u>
BULUG-1844516901-6129	<u>Blakefield North Mine Construction Noise Management Plan</u>
BULCX-2103827161-7661	<u>Post Mining Subsidence Management Plan</u>
BULUG-1844516901-5429	<u>Subsidence Monitoring and Repair Procedure</u>
BULUG-1781645267-2359	<u>Monthly UG Gas Drainage Pipeline Inspection</u>
BULUG-1781645267-4175	<u>Gas Drainage Water Pipeline Monthly Inspection</u>
BULUG-1781645267-4176	<u>Gas Drainage Water Pipeline 6 Monthly Audit</u>

Table 10-1 – Related documents

Number: BULCX-1254107625-5

Status: [Document
Status (Office)]

Effective: [Effective Date]

Owner [Owner (Office)]

Version: [Document
Version (Office)]

Review: [Planned
Review Date]

Page 35 of 45

10.2 Change Information

Reference information, listed in **Table 10-2** below, is information that is directly related to the development of this document or referenced from within this document.

Version	Date	Review team (consultation)	Change Summary
1.0	May 2011	Bulga Coal Complex E&C Department	Complete review of EMS document, incorporating Bulga Surface Operations and Bulga Underground Operations.
2.0	27.02.2012		New document.
3.0	27.08.2012	Bulga Underground E&C Department	Updated legislative references, minor updates to flow diagrams, added table for Incident reporting, changed Beltana to Bulga Underground.
4.0	03.09.2012		Updated properties.
5.0	03.09.2012		No changes.
6.0	03.09.2012	Bulga Complex E&C Department	Annual review and changes following BOC External Compliance Audit.
7.0	25.09.2012		Changes made by T. French and L. Stuart.
8.0	18.12.2013	Bulga Complex E&C Department	Updated for BUO Mod 5 changes. Updated both Appendices.
9.0	12.01.2015		Changed Blakefield South to Bulga Underground in the Header and Footer.
10.0	Jun 2016	BUO ECC	Annual review considering BBRA. Also updated to bring EMS in line with Glencore protocol and to address new EMS requirements in SSD-4960.
11.0	Dec 2016	BUO ECC	Update to reflect UG Mod 6.
12.0	Nov 2017	Environment and Community Manager	Finalised document after receiving approval from Department of Planning and Environment. Formatting updates.
Draft 1 13.0	Jan 2018	BOC E&C Officer and BCC Environment and	Updated Flow Charts, updated references, updated Section 4.2 with current process, minor updates following cessation of underground mining.

Version	Date	Review team (consultation)	Change Summary
		Community Manager	
Draft 2 13.0	May 2019	BOC E&C Officer and BCC Environment and Community Manager	Following feedback from DPIE on the first draft: • Provided more details in Sections 5.1.3, 6.2 and 8.4; • Added section 6.4; • Included further details regarding internal documents; • Updated Appendix references; and • Hyperlinked all documents available to the public.
13.0	June 2019	BOC E&C Officer	Draft 2 13.0 was approved by DPIE on 11/06/19. Inserted approval letter in Appendix D and published on SharePoint.
Draft 1 14.0	June 2020	BCC E&C Officer and E&C Coordinator	• Section 4.3 - Baseline Studies Updated to include Mod 2 and Mod 3. Mod 7 for the UG. • Annual E&C Planning Process diagram updated (now includes Budget RA and removed Operation Wide BBRA). • WA and GDP figure updated to include pre and during disturbance inspections & GDP register. • Section 5.2.2 and Table 5 added to address filing structure. • Section 5.3.5 updated to remove blast fume MP • Table 7.2 updated. • Section 10.1, EC Training MP added in, Blast Fume MP removed. • Appendix B merged with Appendix A. Appendix C is now B. New Appendix C added in.
Draft 2 14.0	May 2021	BCC E&C Officer	• Table 8.2 has been updated; • References to the Bulga Underground Environmental Monitoring Program have been removed; • Minor grammar corrections have been made; • Appendix A has been updated with a higher resolution version; and • Hyperlinks to publically available documents have been reconnected. Where hyperlinks to internal

Number: BULCX-1254107625-5

Status: [Document Status (Office)] Effective: [Effective Date]

Owner [Owner (Office)]

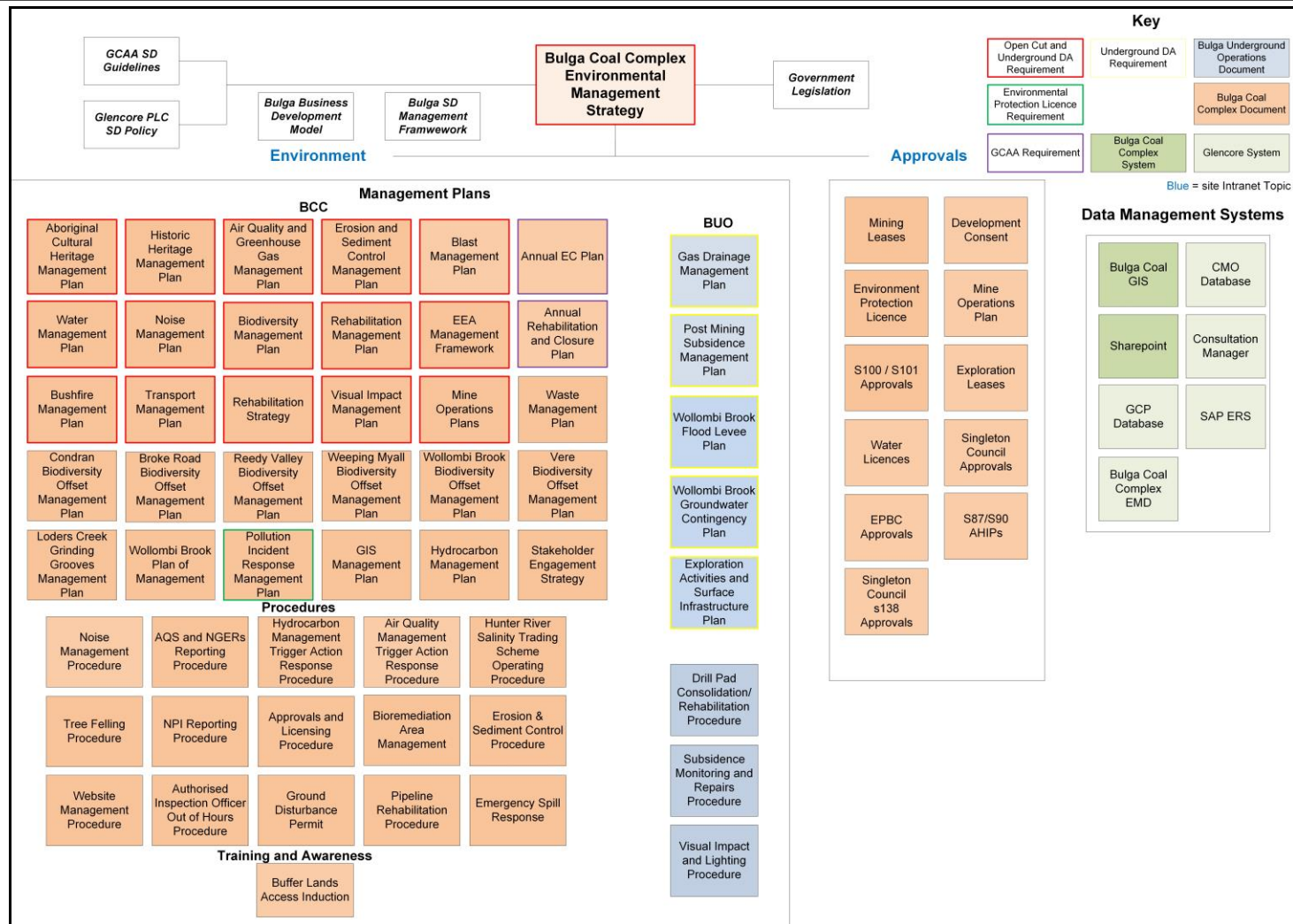
Version: [Document Version (Office)] Review: [Planned Review Date]

Page 37 of 45

Version	Date	Review team (consultation)	Change Summary
			documents do not work, the contents of the documents have been described within the EMS.

Table 10-2 – Change Information

Appendix A - Bulga Coal Complex EMS Documents



Number: BULCX-1254107625-5

Status: [Document Status (Office)]

Effective: [Effective Date]

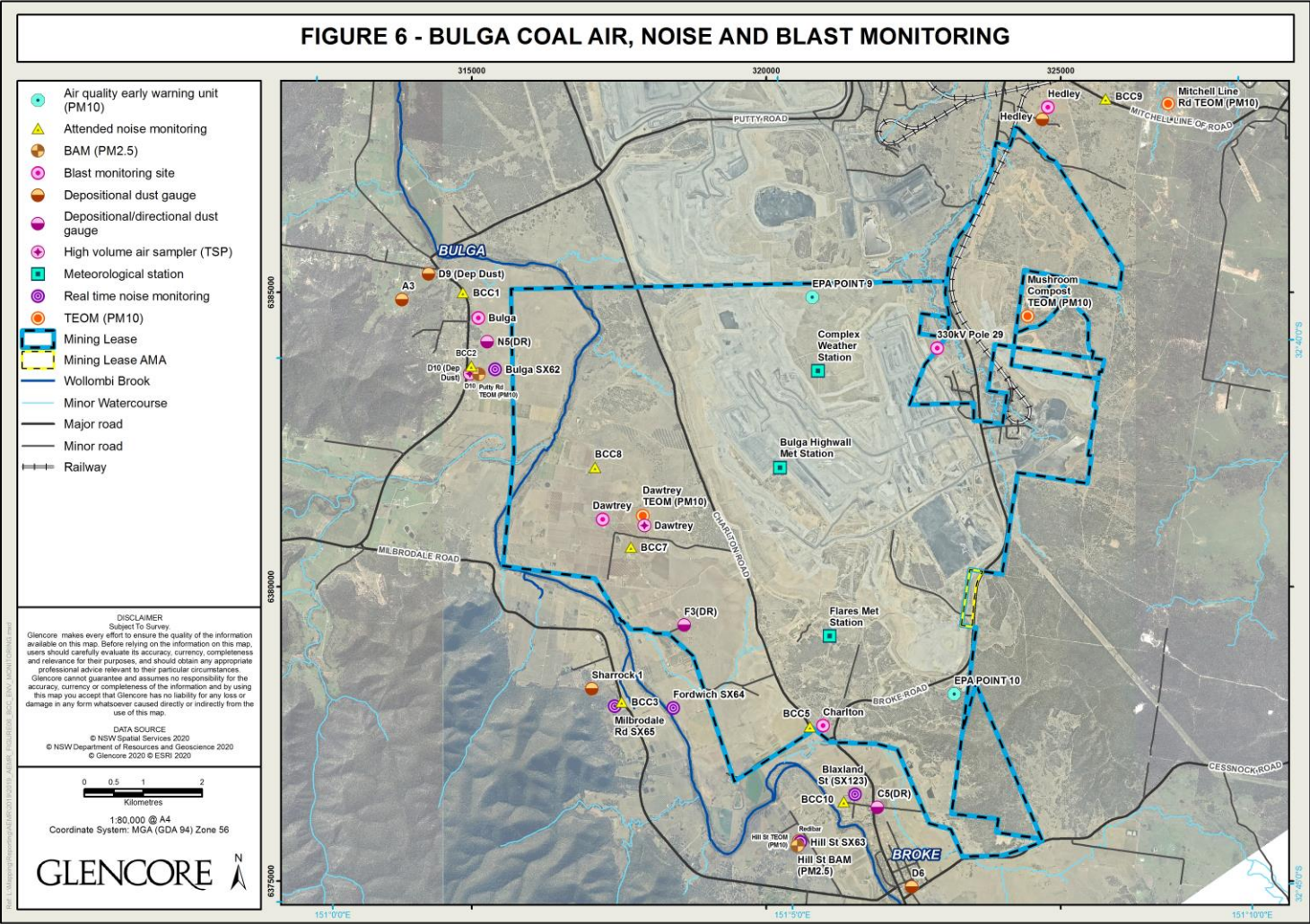
Owner [Owner (Office)]

Version: [Document Version (Office)]

Review: [Planned Review Date]

Page 39 of 45

Appendix B - Bulga Complex Environmental Monitoring Sites



Number: BULCX-1254107625-5

Status: [Document Status
(Office)]

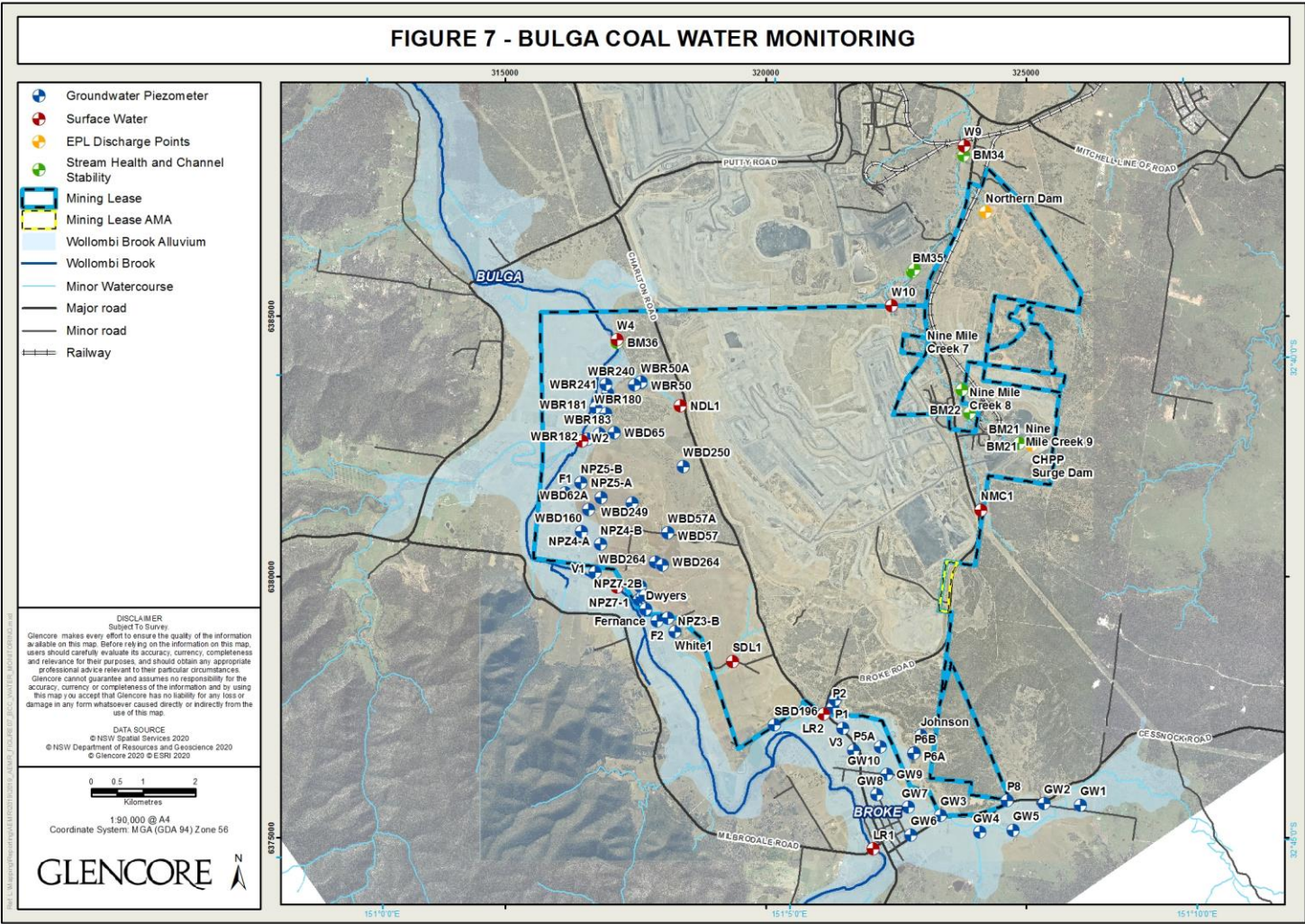
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Owner [Owner (Office)]

Version: [Document Version
(Office)]

Review: [Planned Review Date]

Appendix C - Bulga Complex Water Monitoring Sites



Number: BULCX-1254107625-5

Status: [Document Status
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Effective: [Effective Date]

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Version: [Document Version
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Review: [Planned Review Date]

Appendix D - Bulga Coal Leases, Licences, Consents and Other Approvals

Consent	Details	Expiry Date
DA 376-8-2003	Bulga Coal Continued Underground Operations	22 February 2031
	Mod 1 – Drift relocation (approved 11 April 2006)	
	Mod 2 – Increase CHPP throughput (approved 25 October 2006)	
	Mod 3 – Longwall realignment (approved 1 October 2007)	
	Mod 4 – Methane Abatement and Gas-fired Power Plant (approved 14 July 2009)	
	Mod 5 – Blakefield North Longwall Modification and Gas Fired Power Plant (approved 18 October 2013)	
	Mod 6 - Modification to Noise Criteria, Flora & Fauna Criteria, & Independent Auditing (approved December 2016)	
	Mod 7 - This modification includes the relocation of the 9MW power station and associated flares (approved July 2020)	
DA 41-03-99	Bulga Coal Surface Operations	23 December 2020
	Mod 1 – Time of commencement (approved 15 February 2001)	
	Mod 2 – Office extension (approved 11 January 2008)	
	Mod 3 – Surface facilities and CHPP dam (approved 5 November 2008)	
	Mod 4 – CHPP dam (approved 2 November 2009)	
	Mod 5 – Noise Conditions (approved 24 May 2010)	
	Mod 6 – Rail Refuelling Facility (approved 2 July 2011)	
	Mod 7 – Western limit extension (approved 15 March 2013)	
	Mod 8 – Sediment Dam (approved 14 March 2014)	
SSD-4960	Bulga Optimisation Project (approved 1 December 2014)	31 December 2039
	Mod 1 – Eastern Emplacement Area Modification (approved 17 January 2017)	

Number: BULCX-1254107625-5

Status: [Document
Status (Office)]

Effective: [Effective Date]

Owner [Owner (Office)]

Version: [Document
Version (Office)]

Review: [Planned
Review Date]

Page 42 of 45

Consent	Details	Expiry Date
	Mod 2 – Revised Completion of the Noise and Visual Bund Outerface (approved 30 August 2018)	
	Mod 3 - Extend Bulga's mine approval to extract an additional 64mt from beneath our tailings storage (approved 16 July 2020).	
EPBC 2002/773	Commonwealth Land Consent	31 December 2034
	Mod 2002/773 – Commonwealth Land Subsidence Management Plan (SMP) Submission Schedule	
EPBC 2012/6637	Bulga Optimisation Project (as varied August 2014)	31 December 2036
EPBC 2018/8300	Bulga Extension Project	31 December 2049
ML 1494	Saxonvale Coal Pty Ltd and Nippon Steel and Sumitomo Metal Australia Pty Ltd	20 September 2027
ML 1547	Bulga Coal Management Pty Ltd	4 April 2025
ML 1674	Bulga Coal Management Pty Ltd	22 March 2033
ML 1717	Bulga Coal Management Pty Ltd	15 September 2036
ML 1788 (MLA 525)	Bulga Coal Management Pty Ltd	19 June 2040
CL 224	Saxonvale Coal Pty Ltd	23 December 2023
EL 5277	Saxonvale Coal Pty Ltd	7 April 2021
EL 5461	Saxonvale Coal Pty Ltd and Nippon Steel & Sumitomo Metal Australia Pty Ltd (renewal in progress)	2 April 2018
EL 8315	Saxonvale Coal Pty Ltd	13 October 2019
AUTH 447	Saxonvale Coal Pty Ltd	2 September 2022
AUTH 450	Saxonvale Coal Pty Ltd (renewal in progress)	30 December 2018
EPL 563	Environmental Protection Licence	20 December 2099
MOP	Bulga Open Cut Mining Operations Plan 2020 to 2023	30 June 2023
MOP	Bulga Underground Mining Operations Plan 2018 to 2023	30 November 2023
Dangerous Goods	XSTR100095	17 January 2022
NPWS s90	C0000331	21 May 2024
Singleton Council	Road closure for open cut blasting	30 June 2019

Number: BULCX-1254107625-5

Status: [Document Status (Office)]

Effective: [Effective Date]

Owner [Owner (Office)]

Version: [Document Version (Office)]

Review: [Planned Review Date]

Page 43 of 45

Consent	Details	Expiry Date
SMP 04/1676	Subsidence Management Plan Blakefield South Mine LW1 - 6	2 April 2016
SMP	Subsidence Management Plan Blakefield South Mine LW1 - 6	31 August 2020

Appendix E - Department of Planning and Environment



Planning Services
Resource Assessments
Contact: Jack Murphy
Phone: 8217 2016
Email: jack.murphy@planning.nsw.gov.au

Ralph Northey
Environment and Community Manager
Bulga Coal Limited
779 Broke Road
Singleton NSW 2330

Email: Ralph.Northey@glencore.com.au


Dear Mr Northey,

Bulga Optimisation Project (SSD-4960) Post Approval

I refer to your email dated 11 June 2019 submitting the revised post approval documents for the Bulga Optimisation Project. The Department has reviewed the following documents:

- Eastern Emplacement Area Management Framework dated June 2019 (condition 19, Schedule 3); and
- Environmental Management Strategy dated June 2019 (condition 1, Schedule 5).

The Secretary has approved the above documents. Please ensure finalised copies of these documents are made available on the company's website.

Should you have any enquiries in relation to this matter, please contact Jack Murphy at the details above.

Yours sincerely,


Howard Reed
Director
Resource Assessments
As nominee of the Secretary
11.6.19