



DENDROBIUM MINE BUSHFIRE MANAGEMENT PLAN

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DOCUMENT REVISION LOG

Persons authorising this Plan

NAME	TITLE	DATE
Chris Schultz	Superintendent Environment	18 August 2021

Document Revisions

REVISION	DESCRIPTION OF CHANGES	DATE
0	Draft submitted	November 2004
1.0	Incorporating comments on draft	February 2005
2.0	Three yearly review as required by Development Consent	March 2008
3.0	Review as required by the revised Development Consent (issued 8 December 2008)	April 2009
4.0	Three yearly reviews in line with Development Consent conditions. Minor changes to roles and responsibilities section, references.	March 2012
5.0	The following changes have been made: <ul style="list-style-type: none"> Updated roles and responsibilities References to parent company changed Update in accordance with Development Consent 	January 2018
5.1	Updated link to the Dendrobium Mine Development Consent	May 2018
6.0	The following changes have been made: <ul style="list-style-type: none"> Updated roles and responsibilities References to parent company changed Update in accordance with Development Consent 	June 2018
7.0	Update to new format and plans. Updated roles and accountabilities. Inclusion of hot work requirements.	May 2021
7.1	Minor administrative changes	August 2021

Persons involved in the review of this Plan

NAME	TITLE	COMPANY	EXP (YRS)	DATE
Chris Schultz	Superintendent Environment	South32	25	August 2021
Joel Wooby	Specialist Land Management	South32	12	April 2021
Tom McMahon	Specialist Environment	South32	3	April 2021
Billy Agland	Specialist Environment	South32	2	April 2021
Sean Wood	Manager Mining Engineering	South32	26	April 2021

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1. INTRODUCTION

Dendrobium Mine is an underground mine which commenced construction in January 2002 following approval from the Minister of the then Department of Urban Affairs and Planning on 20 November 2001. Longwall mining commenced at Dendrobium in April 2005. The mine is owned and operated by Dendrobium Coal Pty Ltd, a subsidiary of Illawarra Coal Holdings Pty Ltd (ICHPL), which is a wholly owned subsidiary of South32 Limited. The mine operates on a continuous basis, 24 hours a day and 7 days a week.

The mining operations are located immediately adjacent to Mt Kembla, approximately 8 km west of Wollongong, NSW, on the Illawarra escarpment (refer to Plan 1). Mt Kembla village, located within 500 m of the Pit Top site, has close historical links with coal mining.

Dendrobium produces predominately metallurgical coal from the Wongawilli Seam (Areas 1, 2 and 3) and is approved to produce up to 5.2 million tonnes of run of mine (RoM) coal per annum. The BlueScope Steel Port Kembla Steel Works (PKSW) and Liberty Primary Steel (Whyalla) are major customers. In addition to these Australian based customers, coal is exported via the Port Kembla Coal Terminal to international customers.

Approval for mining in Areas 1, 2 and 3 was granted under DA 60-03-2001, as modified (the Consent).

Dendrobium Mine, Cordeaux Colliery and Appin Mine (and associated facilities) collectively operate as South32 Illawarra Metallurgical Coal (IMC).

This Bushfire Management Plan (BFMP) has been prepared to detail the relevant bushfire management procedures and controls relating to the operational sites. This BFMP has been prepared to satisfy Condition 22 of Schedule 4 of the Consent for the Bushfire Management Plan.

1.1 Objectives

The objectives of the BFMP are to:

- outline processes to comply with the conditions of Consent and relevant legislative and other requirements related to bushfire management;
- provide the frame work for management of bushfire risks;
- detail the measures in place to protect company, public and private assets and the natural environment from the adverse impacts of uncontrolled wild fire;
- describe bushfire hazard reduction measures;
- outline the control measures to prevent spread of fire from IMC premises to adjacent lands;
- describe the communications, response and processes in place to manage bushfire emergencies;
- describe bushfire protection zone management practices;
- minimise the fire risks to personnel, the general community and firefighters;
- assist in protecting the local WaterNSW lands, natural features and infrastructure from the adverse impacts of uncontrolled bushfire; and

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- cooperate with relevant bushfire services and other authorities in relation to bushfire management, bushfire hazard reduction and emergency response.

1.2 Scope

The scope of the BFMP applies to all existing and future activities related to Dendrobium Mine including:

- Dendrobium Pit Top - consists of administration buildings, workshop, machinery and equipment storage areas, personnel and materials access to the underground workings via the Dendrobium Tunnel, sediment pond and water treatment facility.
- Kemira Valley Coal Loading Facility (KVCLF) – receives coal from underground via the Kemira Valley Tunnel. Run of Mine coal is transported from underground to KVCLF via an extensive coal clearance system. The coal is then fed into a rill tower and deposited onto a 140,000 tonne stockpile from which it is loaded into trains via an enclosed rail-loading chute. Sediment ponds are in place.
- Dendrobium Coal Preparation Plant (DCPP) – located within the PKSW, the DCPP receives and washes RoM coal from the underground operations.
- Kemira Valley Rail Line (KVRL) – used to transport the coal from KVCLF to the DCPP.
- Ventilation Shaft (VS) 1 - located within the Metropolitan Special Area (MSA) administered by WaterNSW, operates as a downcast shaft (i.e. drawing fresh air into the underground workings). VS1 is located on land owned by IMC.
- VS2 and VS3 – located within the MSA and within Mining Lease ML 1566. VS2 operates as an additional downcast shaft whilst VS3 operates as an upcast shaft (i.e. drawing air out of the underground workings).
- Local community and environment including adjacent lands, property, infrastructure, bushland and other natural environmental features.

Refer to Plan 1 for locations of the above.

1.3 Environmental Management System

IMC has a comprehensive Environmental Management System (EMS) in place to minimise the impact of its operations on the local environment and community. The BFMP is a component of the EMS which is certified to ISO 14001.

1.4 Consultation

Consultation was undertaken as part of the Revision 7.0 review of the BFMP with the Rural Fire Service (RFS) and WaterNSW. The comments from the consultation process were incorporated into the BFMP.

Appendix 2 outlines comments from the relevant government agencies following consultation and the IMC response.

Consultation with agencies as stated in Condition 22 of Schedule 4 of the Consent will only be undertaken where there is a material change to the BFMP or if specifically requested by DPIE. Administrative or descriptive changes do not constitute a material change.

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2. ROLES AND RESPONSIBILITIES

Roles and responsibilities associated with environmental management at Dendrobium Mine are defined in the Environmental Management Strategy. Table 1 outlines the roles and responsibilities associated with the implementation and periodic review of the BFMP.

Implementation of the plan is the responsibility of the owners or occupiers (land managers) of the land on which the bushfire risk is situated. The *Rural Fires Act 1997* imposes this responsibility on both public and private land managers.

Table 1: Roles and Responsibilities

Role	Responsibilities
Superintendent Environment	<p>Periodic review of the BFMP.</p> <p>Liaise with government regulators and IMC senior leadership team in relation to bushfire issues.</p>
Specialist Environment	<p>Advise, coach and mentor IMC operations with respect to meeting the standards and requirements of the BFMP.</p> <p>Monitor and review compliance against these requirements.</p> <p>Supervise on-site hazard mitigation work.</p> <p>Participate in bushfire risk assessments/ inspections.</p>
Manager Mining Engineering (or delegate)	<p>Coordinate on-site hazard mitigation strategies (in association with the RFS as applicable).</p> <p>Evacuation of personnel from site to separate personnel from exposure to bushfire.</p> <p>Coordinate bushfire risk assessments.</p>
Superintendent Infrastructure and Rubber Tyred Vehicles	<p>Cancelling field work if fire danger is high or catastrophic.</p> <p>Withdrawing workers to avoid exposure to bushfire.</p>
Specialist Land Management	<p>Coordinate off-site hazard mitigation strategies (in association with the RFS as applicable).</p> <p>Participate in/coordinate bushfire risk assessments/inspections.</p>
External Affairs Team	<p>Meet the commitments contained within the BFMP for stakeholder engagement and landowner notifications.</p>

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Manager Approvals General Manager Dendrobium Mine	Provide the necessary resources and systems to ensure that requirements of the BFMP are met.
Fire Officer	Inspect and maintain firefighting equipment, including mains, hydrants, extinguishers and hoses.
Contracting firm	Annual testing of fire alarms and automatic fire equipment for Fire Safety Statements.

3. LEGISLATION AND PLANNING

3.1 Consent Conditions

Potential bushfire impacts associated with Dendrobium Mine were assessed during the preparation of the Dendrobium Project Environmental Impact Statement (EIS) 2001. The EIS was assessed and approved under the *Environmental Planning and Assessment Act 1979 (EP&A Act)* and associated Regulations.

All activities carried out at Dendrobium Mine will be in accordance with the conditions of Consent and generally in accordance with the EIS.

Appendix 1 outlines the bushfire management requirements of the Consent and cross references where the requirements have been addressed within the BFMP.

3.2 Environment Protection Licence Requirements

Environment Protection Licence No. 3241 (EPL 3241) applies to Dendrobium Mine and associated activities. A copy of the licence can be accessed at the EPA website:

<http://www.epa.nsw.gov.au/prpoeoapp/>.

3.3 Mining Leases

Dendrobium Mine operates in accordance with the following mining leases:

- Consolidated Coal Lease (CCL) 768.
- Mining Lease (ML) 1510 (covers the KVCLF).
- ML 1566 (covers VS2 and 3).

3.4 Relevant Legislation

Key regulatory and BFMP obligations applicable to Dendrobium Mine are managed via an obligations management database. The obligations are allocated to responsible personnel. This process is detailed in the Environmental Compliance/Conformance Assessment and Reporting Procedure.

Legislation that may be applicable to bushfire management includes but is not limited to:

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- *Protection of the Environment Operations Act 1997 (POEO Act);*
- *Environmental Planning and Assessment Act 1979 (EP&A Act);*
- *Rural Fires Act (1997);*
- *Work Health and Safety Act (2011);*
- *Work Health and Safety Regulation (2017);*
- *Work Health and Safety (Mines and Petroleum Sites) Act (2013); and*
- *Work Health and Safety (Mines and Petroleum Sites) Regulation (2014).*

3.5 Guidelines and Standards

This BFMP has been developed to be consistent with the principles of the following:

- ISO 14001:2015 Environmental Management Systems;
- South32 Sustainability Policy; and
- South32 Environment Standard.

Other relevant guidelines for bushfire management include:

- Mt Kembla Community Protection Plan;
- Illawarra Bush Fire Risk Management Plan;
- Local Operation Plans;
- AS 3745 Planning for Emergencies in Facilities;
- Guidelines of the Preparation of Emergency/Evacuation Plans, published by RFS;
- Planning for Bushfire Protection Guideline (November 2019), published by RFS; and
- AS 3959 (2018) Construction of Buildings in Bushfire Prone Areas.

4. LOCATION CHARACTERISTICS AND SUMMARY OF BUSHFIRE RISK FACTORS

4.1 Local Condition, Site Conditions and Bushfire History

4.1.1 Climate

Wollongong is characterised by a relatively humid, temperate, moderate climate with annual average rainfall of 1200 to 1500 mm. Temperature and rainfall conditions vary across the area (east of the escarpment) with the climate on top of the escarpment tending towards warm temperate. The average monthly summer temperature is 24°C and the average monthly winter temperature is 17°C.

The escarpment has a significant influence on the climatic conditions of the region. There is significant variation in seasonal weather patterns, with the summer season being the prime bushfire period.

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4.1.2 Vegetation

The Illawarra escarpment is characterised by dense vegetation and undergrowth with variable vegetation types and communities including rainforests, wet and dry sclerophyll forests, heath-land, as well as grasslands, pastoral lands and open woodlands.

The remote areas, steep slopes and dense bushland areas of the escarpment are difficult to readily access to manage uncontrolled bushfire. The locality of bushfire, available fuel load and the prevailing weather conditions are key factors influencing the significance of bushfire risk.

4.1.3 Bushfire History

The Dendrobium Mine site locality, escarpment and WaterNSW MSA have been subject to significant bushfires in the past. Significant fires occurred in September 1939, October 1968, November 1980, January 1994, December 1997, December 2000 and 2001. The most recent local uncontrolled bushfire event of significance occurred in the area around the Dendrobium No. 1 Ventilation Shaft area at Kembla Heights in September 2003. No loss of property or infrastructure occurred because of this event.

Catastrophic bushfires occurred in the wider region (Wollondilly, Wingecarribee and Shoalhaven local government areas) in the 2019/2020 bushfire season.

These fires coincided with extended dry periods, hot, dry and windy conditions leading to extreme fire weather. All the above fires burnt extensive areas of bushland.

4.2 Ignition Sources

Potential ignition sources at site include:

- hot exhausts from vehicles;
- spark or flame sources from grinders or welders;
- frictional sources (surface conveyor);
- electrical equipment faults;
- auto combustion of mixed chemicals;
- overhead power line arcing faults;
- vegetation interference with overhead power lines; and
- debris blown onto overhead power aerials.

External ignitions sources include:

- illegal fires/burning off;
- torching of dumped cars;
- inappropriately discarded cigarette butts;
- deliberate lighting of bushland (arson); and
- loss of containment of authorised hazard reduction burns.

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Natural ignition sources include:

- lightning strikes; and
- spontaneous combustion of organic matter.

4.3 Hazard Reductions

Hazard reductions (also referred to as controlled burning or prescribed burning) are generally planned by the RFS to be conducted between April to September each year when conditions are favourable. Hazard reductions can take place outside this period if suitable conditions exist. If the weather restricts the completion of the hazard reduction program, incomplete proposals are reviewed by the Illawarra Bushfire Management Committee and rescheduled if possible.

Hazard reduction programs may be supplemented with mechanical clearing.

4.4 Site Conditions

4.4.1 *Dendrobium Pit Top*

The Dendrobium Mine Pit Top area is predominantly cleared of natural vegetation with some remnant stands of trees remaining on site (refer to Plan 2 for site layout). The site is surrounded by dense bushland in proximity to the Mount Kembla Village and Kembla Heights communities. The site property boundary is characterised by steep slopes and is densely wooded in areas. A relatively large proportion of the Pit Top working and storage area is sealed.

4.4.2 *KVCLF*

The KVCLF is a cleared site with rehabilitated areas predominantly grassed. The KVCLF borders highly naturally vegetated areas (escarpment) to the north and west and grassed pastoral lands to the east. The majority of roads on the site are sealed (refer to Plan 3 for site layout).

4.4.3 *KVRL*

A cleared buffer is maintained along the KVRL. The KVRL corridor is bounded by vegetation or residential/commercial development.

4.4.4 *DCPP*

The DCPP is located within the PKSW and is not subject to bushfire risk.

4.4.5 *Ventilation Shaft 1*

VS1 is located within the WaterNSW MSA. The site is surrounded by natural bushland (refer to Plan 4 for site layout). The access road is unsealed.

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4.4.6 Ventilation Shaft 2 and 3

VS2 and VS3 are located within the WaterNSW MSA. The site is accessed via the unsealed Fire Trail 6C. A fire protection buffer zone is provided around the site boundary, which is surrounded by bushland (refer to Plan 5 for site layout).

5. BUSHFIRE RISK ASSESSMENT AND MANAGEMENT PROCESS

5.1 Bushfire Risk Assessment

Bushfire risk is defined as the chance of a bushfire causing harm to persons, property and the natural environment.

Key factors determining the significance of the risk include:

- actual and potential consequences of the fire;
- locality of the fire;
- potential for roads to be cut by bushfire;
- prevailing conditions;
- density of surrounding vegetation;
- firefighting resources available; and
- capacity and ability to affectively respond to and control the fire

Key Risk Control Measures include:

- maintenance of fire protection zones and boundaries;
- hazard reduction activities;
- control of activities on site;
- training of personnel;
- competency of Emergency Response Services;
- availability of resources, personnel and equipment to attend fires; and
- inspections and assessment.

5.2 Bushfire Risk Management

Bushfire risk in relation to the Dendrobium sites is mitigated by the following specific activities:

- Access roads and trails are monitored during regular inspections, with remedial and maintenance work carried out as required. Egress routes from the MSA are provided in Plan 6.
- Unauthorised access is prevented by locking Fire Trail access gates and access gates to other controlled areas.

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- Fire trails under IMC care/control are maintained in accordance with NSW RFS Fire Trail Standards and the Fire Access and Fire Trail Register and to a standard for Category 1 Fire Tanker access where possible.
- IMC 'Asset Protection Zones' are maintained between Dendrobium sites and neighbouring land and property in accordance with the NSW RFS Standards for Asset Protection Zones. Asset protection zones are inspected annually. If any major changes are identified or required, the relevant agencies (RFS and WaterNSW) will be notified and the RFS may be consulted as required for review of these areas. Asset protection zones are reflected in Plan 2, Plan 3, Plan 4 and Plan 5.
- Mechanical hazard reduction programs (not burning) are undertaken.
- Any hazard reduction burns will be completed in association with the relevant authorities.
- Supervisors will review fire status, daily fire danger rating, weather forecast and work locations and identify and monitor the location and direction of active bushfires.
- Bushfire awareness and procedures will be communicated to all personnel in high risk locations.
- IMC will provide assistance and expertise to relevant government agencies in relation to bushfire matters affecting its infrastructure, assets, and operations, including representation on the Illawarra Bushfire Management Committee.

5.2.1 **Dendrobium Pit Top**

Areas targeted near the Dendrobium Pit Top include land holdings bordering onto the local community housing areas. An asset protection zone is maintained at the urban interface with the Dendrobium Pit Top and the KVCLF.

Four water cannons have been installed on site to wet down areas around the administration, workshop and warehouse buildings if a bushfire is approaching and to assist in controlling a bushfire if the site is under attack.

There are no bulk storages of flammable materials on site. Gas cylinders containing flammable gases are stored in a dedicated facility. Combustible materials include diesel and solcenic (stored in tanks) and oils (stored in bulk bins and drums) are present on site. The locations of these storage areas are shown in Plan 2.

5.2.2 **KVCLF**

The KVCLF contains cleared sections of land between the site and the Mt Kembla community. A large portion of this land is used as pastoral land and acts as a buffer between the KVCLF site and residential land.

The sediment pond and buffer dam at the KVCLF is available for the provision of water for firefighting purposes at this site if required.

There are no bulk storages of flammable materials on site. Diesel (a combustible material) is stored on site, and the coal stockpile is also combustible. Water sprays are available on the coal stockpile. A small volume of flammable gases are also stored on site in the workshop area. The locations of these storage areas are shown in Plan 3.

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5.2.3 VS1

An asset protection zone is maintained around the VS1 infrastructure (refer to Plan 4).

There are no flammable or combustible materials stored at VS1.

5.2.4 VS2/3

A sediment pond at the VS2/3 site is available¹ for the provision of water for fire-fighting purposes at this site. Cordeaux Dam is in close proximity to the site and could be used as a source of water for aerial fire-fighting.

There are no bulk storages of flammable or combustible materials at VS2/3.

5.2.5 Record Keeping

Reports containing information relating to monitoring, inspections and observations, correspondence, notification and approvals, records of communication with statutory authorities and other bodies, audit reports and reviews are maintained as required under the Document Control and Records Management Standard and are available in the IMC document management system.

5.3 Illawarra Bush Fire Risk Management Plan

Bushfire management actions for Dendrobium Mine are contained in the Illawarra Bush Fire Management Plan. These actions are recorded against the Illawarra Bush Fire Risk Management Plan prior to the commencement of the fire season. The IMC representative on the Illawarra Bush Fire Management Committee is the Specialist Land Management.

5.4 Hazard Reduction Authorisations and Permits

Except for general maintenance, hand clearing and machine clearing requires a Permit to Disturb to be issued.

5.5 Risk Management and Emergency Response Procedures On-Site

The following documents are in place at Dendrobium Mine:

- Fire and Explosion - Material Risk Event (DENCRV0025) identifies the fire hazards, resources, procedures, equipment and inspections, required to maintain a system for fire prevention and firefighting capability.
- Dendrobium Mine - Emergency Response Control Plan: Overview (DENMP0088) defines a standard set of procedures and responses to ensure the effective management of any incident, threat, injury or emergency arising from any source at the mine where the relevant Critical Safety Hazard Management Plan has been ineffective in controlling the fundamental hazard.

¹ Dependent on rainfall

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- Dendrobium Mine - Emergency Response Control Plan: Incident Response (DENMP0090) defines the actions that are to be taken in response to a fire or other emergency by persons at the mine.
- Dealing with a Bushfire Procedure (DENP0093) informs employees of the steps to be taken if there is bushfire activity around the surface infrastructure of the mine.
- Gas and Ventilation Monitoring TARPs (DENTARP0009) defines gas monitoring and withdrawal procedures to be established in the event of smoke from Bushfires entering the underground workings.
- Procedure Upon Discovering a Heating, Fire or Explosion Event Underground (DENP0068) covers the emergency evacuation of personnel from the underground areas of the mine in the event of an outbreak of fire.
- Surface Evacuation Procedure (DENP0249 and ICAP0103) provides a procedure for evacuation of the surface area of the mine in an emergency.
- Loss of Pressure or Quantity of Water to the Firefighting Supply System (DENP0035) ensures the safety of the persons who are underground when the water supply to underground is interrupted or becomes ineffective.
- WaterNSW Land Access Procedure (Dendrobium Infrastructure) (DENP0549) details the procedure for employees, consultants, contractors and visitors of Dendrobium Mine who are required to access WaterNSW land, including during various high-risk events, such as bushfire.

5.6 Emergency Contacts

In the event of an emergency at a Dendrobium controlled site, the contacts as listed in Table 2 will be contacted where applicable.

Table 2: Emergency Contact List

Contact	Number
Emergency number (Fire Brigade/RFS)	000
Dendrobium Control Room (Dendrobium sites incl. KVCLF)	4255 4402
EPA	131 555
Wollongong City Council	4227 7111
WaterNSW Emergency Reporting (24 hours)	1800 061 069
Endeavour Energy	131 003

In the case of an emergency and where a tanker is required on site, the RFS will be contacted.

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5.7 Firefighting Aides and Suppressants

In addition to the vegetation control measures, firefighting aides are available on-site for attending to fires. Water cannons, fire hydrants, extinguishers, fire blankets, connections and hoses are installed at strategic locations around the sites. Firefighting systems at the Pit Top uses the town water source, whilst the KVCLF utilises recycled site water.

In the event of a bushfire the KVCLF stockpile sprays can be utilised to dampen the coal stockpile area.

Firefighting tenders and resources require transportation to the VS1 and VS2/3 sites as no firefighting system is readily available for use. Non-essential personnel are required to evacuate WaterNSW controlled areas in the event of bushfire threat.

Site firefighting apparatus and systems are inspected for good working order on a monthly basis by the Dendrobium Fire Officer. Automatic fire equipment and fire alarms are tested by a contracting firm on an annual basis for the Fire Safety Statements.

Gutters and other fire hazard collection points are inspected and addressed on a seasonal basis to ensure that leaves and other flammable material are removed as required.

5.8 Fire Training for Company Personnel

Select company personnel are trained in basic firefighting by attending Southern Mines Rescue Station training. This training is compulsory and is carried out on an annual basis. Most employees on site are capable of operating firefighting equipment.

5.9 Construction of Buildings in Bushfire Prone Areas

Australian Standard AS 3959—2018 specifies requirements for the design and construction of buildings in bushfire-prone areas. Where required, new buildings will comply with the requirements of AS 3959.²

Fire Safety Statements are completed for the bathhouse at the Dendrobium Pit Top and the Sizer at Kemira Valley on an annual basis.

5.10 Hot Work Activities

Hot Work Permits are required for all hot work conducted outside of designated hot work areas that is not covered by a Standard Hot Work Procedure.

Standard Hot Work Procedures are developed from risk assessments to cover a particular routine task or groups of tasks performed in the same environment by experienced personnel where the hot work control measures do not change.

The area where hot work is to be carried out must be assessed for hazards with consideration to the following:

² Note that the Nebo and Operations Buildings at the Pit Top are heritage listed and therefore will not meet all these requirements.

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- Flammable items must be removed or adequately protected against sparks and slag. This includes the hot work equipment itself such as oxy-fuel hoses and cylinders. Flammable materials below the hot work area should also be considered.
- Areas where sparks and slag may fall onto levels below and create a hazard to people and/or equipment and/or the environment must be barricaded, or a spotter assigned.
- Appropriate firefighting equipment must be located within close proximity to the work area (within 10 m).
- A fire watcher (spotter) is to be used for any hot work activities outside of the designated surface hot work areas. This should be continual during hot work activities. The duration of the fire watch after the completion of the hot work task may vary depending on the nature of the task. If the area cannot be fully cleared of combustibles, the fire watch should continue for at least 60 minutes following the completion of the hot work activities.
- Confirmation that there are no total fire bans in effect for the local area. This can be achieved by accessing the NSW Rural Fire Service website (www.rfs.nsw.gov.au), calling 1800 679 737 or contacting Dendrobium Control. Hot work is not permitted to be done in the open (i.e. outside of buildings) during total fire bans.
- Audit of all controls is conducted prior to commencement of the task by a competent Mining Supervisor as stipulated in the Mine Inspection Program.
- Any conditions within a Hot Fire Work Total Fire Ban Exemption will be complied with. Further information regarding Total Fire Ban Exemptions is available at <https://www.rfs.nsw.gov.au>.

6. COMPLAINTS AND NON-COMPLIANCE MANAGEMENT

6.1 Complaints and Dispute Resolution

IMC has a 24 hour, free community call line (1800 102 210) and email address (illawarracommunity@south32.net) which is displayed at IMC Projects and Mine Sites, and included in newsletters, letters and other correspondence. The call line is for all complaints and general enquiries regarding environmental or community issues associated with IMC's operations.

Community complaints and enquiries may also be received in person by any employee of IMC, with details to be immediately shared with the Community Team for investigation. All bushfire related complaints received in relation to Dendrobium Mine will be managed in accordance with the Handling Community Complaints, Enquiries and Disputes Procedure.

Upon receipt of a community complaint, preliminary investigations will commence as soon as practicable to determine the likely cause of the complaint. An initial response will be provided to the complainant within 24 hours of the complaint being made, with a follow up response being provided as soon as practicable once a more detailed investigation is complete.

Where bushfire related issues are raised by an affected landowner or community member and the affected landowner or community member requests feedback in relation the issue

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raised, the landowner or community member will be provided with the investigation results and proposed course of corrective action.

A summary of all complaints received during the reporting year will be provided as part of the Annual Review. A log of complaints is also maintained on the IMC website at:

<https://www.south32.net/our-business/australia/illawarra-metallurgical-coal/documents>.

6.2 Events, Non-Compliance, Corrective Action and Preventative Action

Events, non-compliances, corrective actions and preventative actions are managed in accordance with the Reporting and Investigation Standard and Environmental Compliance/Conformance Assessment and Reporting Procedure. These procedures, which relate to all IMC operations, detail the processes to be utilised with respect to event and hazard reporting, investigation and corrective action identification. The key elements of the process include:

- identification of events, non-conformances and/or non-compliances;
- recording of the event, non-conformance and/or non-compliance in the event management system (G360);
- investigation/evaluation of the event, non-conformance and/or non-compliance to determine specific corrective and preventative actions;
- assigning corrective and preventative actions to responsible persons in G360; and
- review of corrective actions to ensure the status and effectiveness of the actions.

Non-compliances or incidents will be reported to all relevant agencies as detailed in Section 7.

7. REPORTING AND REVIEW

7.1 Annual Review

IMC will report on the performance of the BFMP in the Annual Review.

The Annual Review will include:

- complaints regarding bushfire management and management/mitigation measures undertaken; and
- a description of bushfire management activities undertaken during the reporting period.

The Annual Review is prepared in accordance with Condition 5 of Schedule 8 of the Consent and is submitted to relevant agencies in September each year. Annual Reviews are made available to the general public via the South32 website.

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7.2 Incident Notifications

In accordance with Condition 3 and 4 of Schedule 8 of the Consent, the Department and any other relevant agencies will be notified immediately³ by IMC after becoming aware of an incident⁴. The notification will be in writing and submitted to compliance@planning.nsw.gov.au and identify the development and set out the location and nature of the incident.

7.3 Review of BFMP

In accordance with Condition 2A of Schedule 8 of the Consent, the BFMP will be reviewed, and if necessary revised, within three months, of:

- a) the submission of an incident report;
- b) the submission of an Annual Review;
- c) the submission of an Independent Environmental Audit (IEA) report; or
- d) the approval of any modification of the conditions of the Consent (unless the conditions require otherwise).

Outcomes from each review will be documented in the Management Plan Review Log. The BFMP will only be revised where a material change to site operations or environmental management has occurred, or in accordance with the review period on the BFMP. Administrative or descriptive changes do not constitute a material change.

Where a review triggers a revision of the BFMP, the BFMP will be revised. The updated BFMP will be implemented.⁵

7.4 Audits

7.4.1 IEA

In accordance with Condition 6 of Schedule 8 of the Consent, an IEA shall be commissioned every three years, that will include a review of the BFMP. The report is required to be submitted to the Secretary within three months of commencing the IEA⁶, in accordance with Condition 7 of Schedule 8.

IEAs have been conducted every three years since 2008, with the last IEA being conducted in 2020 and the next IEA to be conducted in 2023. Recommendations from the IEA will be incorporated into the BFMP where appropriate.

³ Notification within 24 hours is required under the Consent. Notification is required immediately after the person becomes aware of the incident under EPL 3241.

⁴ An incident is defined as an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.

⁵ There is no requirement for the BFMP to be approved by the Secretary.

⁶ The date of commencing the IEA is defined as the first day of the site inspection.

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7.4.2 ISO 14001

As part of the ISO 14001 certification, IMC maintains an environmental auditing and governance program across all of its operational sites. The program, which includes the use of competent internal and accredited external auditors, is an integral part of maintaining certification under the ISO 14001 standard.

External surveillance audits are undertaken on an annual basis, with recertification audits undertaken every three years.

Internal Governance Reviews of the BFMP are nominally undertaken on a nominal two yearly basis.

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8. SUMMARY OF COMMITMENTS

Commitment	Section in BFMP
IMC will provide personnel and resources to implement the BFMP.	Section 2
IMC will comply with the conditions of Consent and relevant legislation.	Section 3
IMC will engage with the RFS as required to plan hazard reductions.	Section 4.3
IMC will inspect asset protection zones annually and maintain these zones accordingly.	Section 5.2
Monitoring of active bushfires in the region will be undertaken.	Section 5.2
Bushfire awareness and procedures will be communicated to all personnel in high risk locations.	Section 5.2
Reports and records will be maintained for a period of at least seven years.	Section 5.2.5
IMC will maintain representation on the Illawarra Bushfire Management Committee and undertake actions as identified in the Illawarra Bush Fire Risk Management Plan.	Section 5.3
IMC will provide and maintain firefighting equipment at sites.	Section 5.7
IMC will provide firefighting training to select company personnel.	Section 5.8
New buildings in bushfire prone areas will be constructed to meet the requirements of AS 3959.	Section 5.9
IMC will complete Hot Work Permits where required and implement identified controls.	Section 5.10
IMC will report and investigate complaints and incidents as required, and identify and implement corrective actions.	Section 6
IMC will undertake reporting as required.	Section 7
IMC will review the BFMP as required.	Section 7.3
IMC will undertake audits as required.	Section 7.4

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9. ACRONYMS

Term	Definition
BFMP	Bushfire Management Plan
CCC	Community Consultative Committee
CCL	Consolidated Coal Lease
DCPP	Dendrobium Coal Preparation Plant
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	Environment Protection Authority
<i>EP&A Act</i>	<i>Environmental Planning and Assessment Act</i>
EPL	Environment Protection Licence
G360	IMC event reporting system
ICHPL	Illawarra Coal Holdings Pty Ltd
IEA	Independent Environmental Audit
IMC	Illawarra Metallurgical Coal
KVCLF	Kemira Valley Coal Loading Facility
KVRL	Kemira Valley Rail Line
ML	Mining Lease
MSA	Metropolitan Special Area
PKCT	Port Kembla Coal Terminal
RFS	Rural Fire Service
RoM	Run of Mine
VS	Ventilation Shaft

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10. REFERENCES

- DA 60-03-2001, as modified
- Dendrobium Project EIS
- Handling Community Complaints, Enquiries and Disputes Procedure (IMCP0112)
- Reporting and Investigation Standard (IMCSTD0069)
- Environmental Compliance/Conformance Assessment and Reporting Procedure (IMCP0186)
- ISO 14001:2015 Environmental Management Systems Standard
- Dendrobium Mine – Gas and Ventilation Monitoring TARPs (DENTARP0009)
- Dendrobium Mine - Dealing with a Bushfire Procedure (DENP0093)
- Dendrobium Mine - Designated Areas, Smoking Materials and Searches Procedure (DENP0036).
- Dendrobium Mine - Emergency Fire Provisions Procedure (DENP0017)
- Dendrobium Mine - Emergency Response Control Plan: Part 1 - Overview (DENMP0088)
- Dendrobium Mine - Emergency Response Control Plan: Part 3 - Incident Response (DENMP0090)
- Dendrobium Mine - Procedure Upon Discovering a Heating, Fire or Explosion Event Underground (DENP0068)
- Document Control and Records Management Standard (IMCSTD0110)
- Dendrobium Mine - Loss of Pressure or Quantity of Water to the Fire Fighting Supply System Procedure (DENP0035)
- Dendrobium Mine - Fire and Explosion Material Risk Event (DENCRV0025)
- Dendrobium Mine - Surface Evacuation Procedure (DENP0249)
- Cordeaux Colliery – Bushfire Management Plan (ICAMP0102)
- Cordeaux Colliery – Exploration Field Teams Emergency Preparedness and Response Management Plan (ICAMP0146)
- Cordeaux Colliery - Environmental Field Team Emergency Preparedness and Response Management Plan (ICAMP0151)
- Cordeaux Colliery – Mine Site and WaterNSW Special Areas Bushfire TARP (ICATARP0003)
- Hot Work – Standard of Engineering Practice (IMCSTD0026)
- Hot Work Permit – Surface (IMCF0023)
- Permit to Disturb Procedure (IMCP0207)
- Permit to Disturb Form (ICHF0209)

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- Schedule of Standard Exemptions to Total Fire Bans
<https://www.rfs.nsw.gov.au/fire-information/fdr-and-tobans/schedule-of-standard-exemptions-to-total-fire-bans>
- RFS Alert Levels - <https://www.rfs.nsw.gov.au/plan-and-prepare/alert-levels>
- RFS Fire Danger Ratings - <https://www.rfs.nsw.gov.au/plan-and-prepare/fire-danger-ratings>
- NSW Rural Fire Service (2019) Planning for Bushfire Protection Guideline
- NSW Rural Fire Service (2015 - 2020) Illawarra Bush Fire Risk Management Plan 2015 – 2020
(https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0020/2378/Illawarra-BFRMP.PDF)
- *Work Health and Safety Act (2011)*
- *Rural Fires Act (1997)*
- AS 3959 (2018) Construction of Buildings in Bushfire Prone Areas
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011-SEPP28

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11. PLANS

Plan 1: Dendrobium Mine Locality Plan

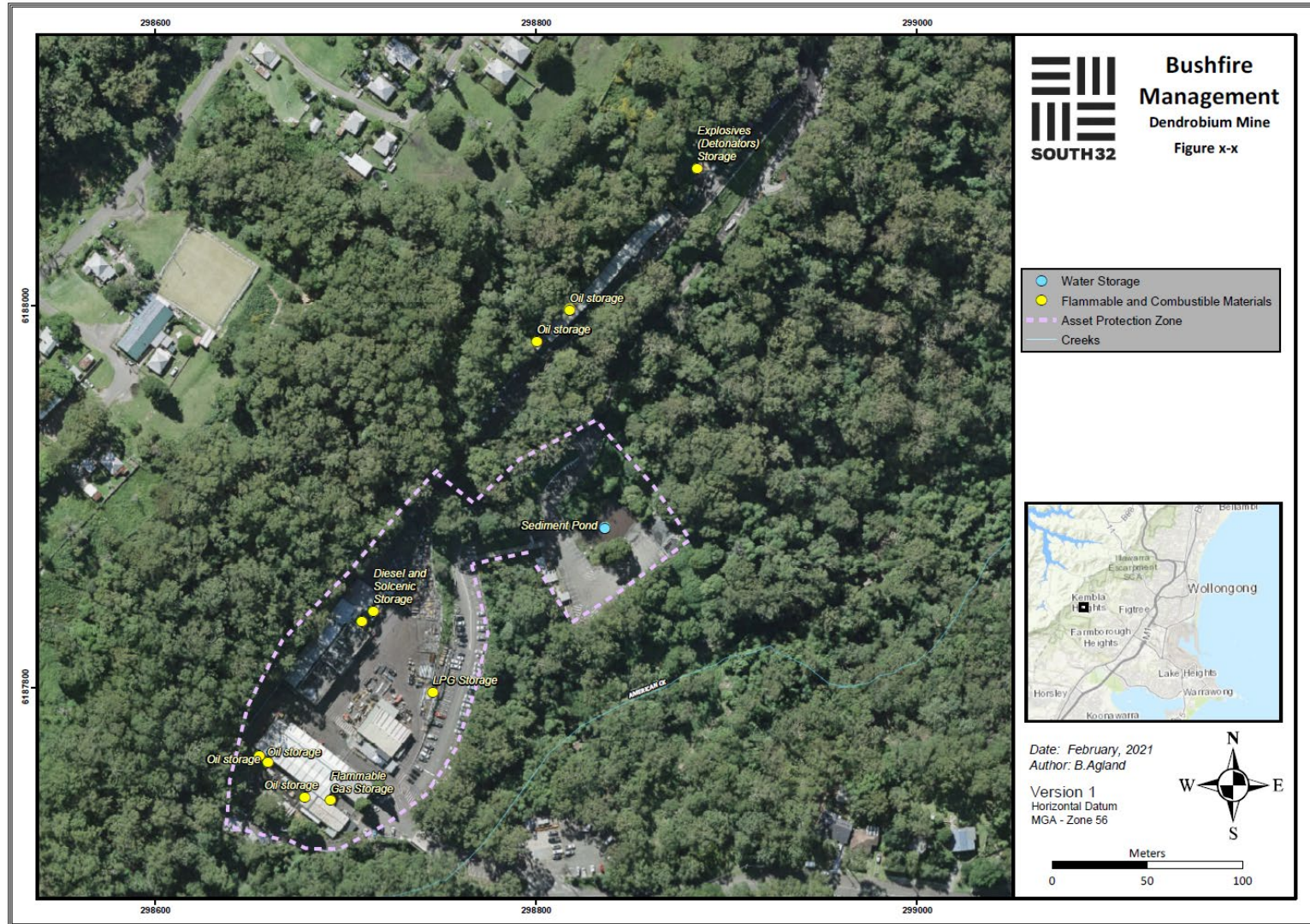


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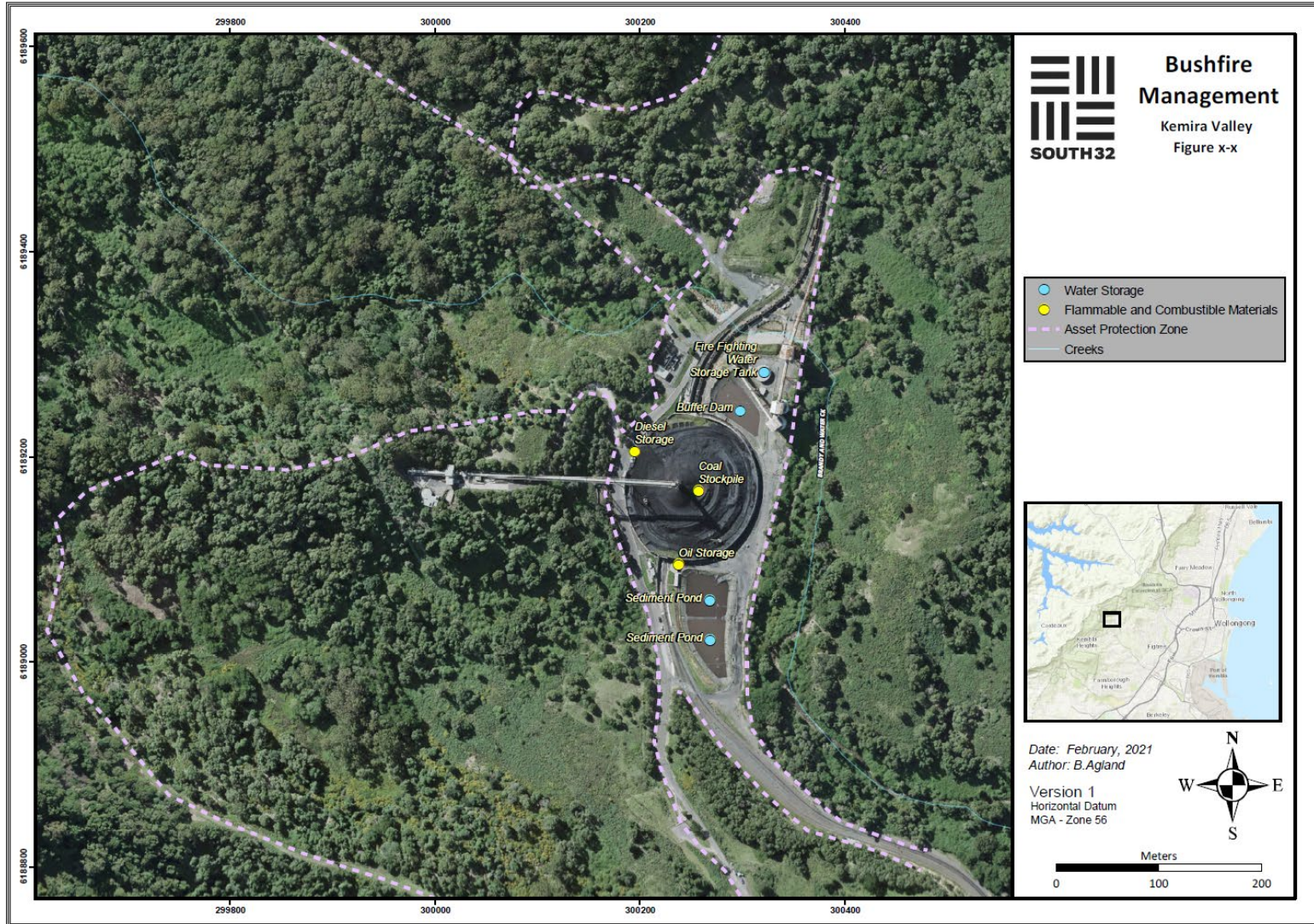
Plan 2: Dendrobium Mine Pit Top



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Plan 3: KVCLF



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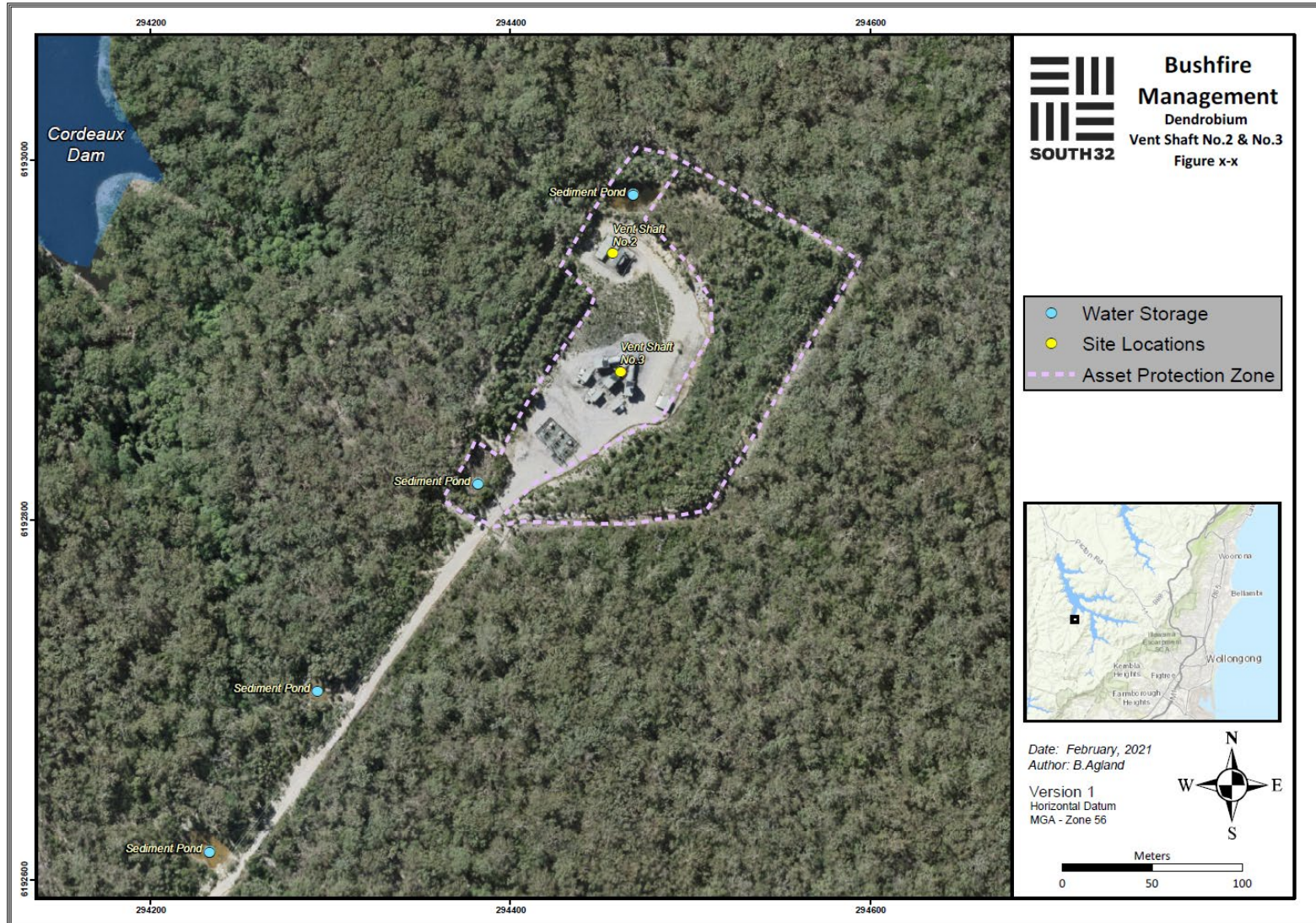
Plan 4: Ventilation Shaft 1



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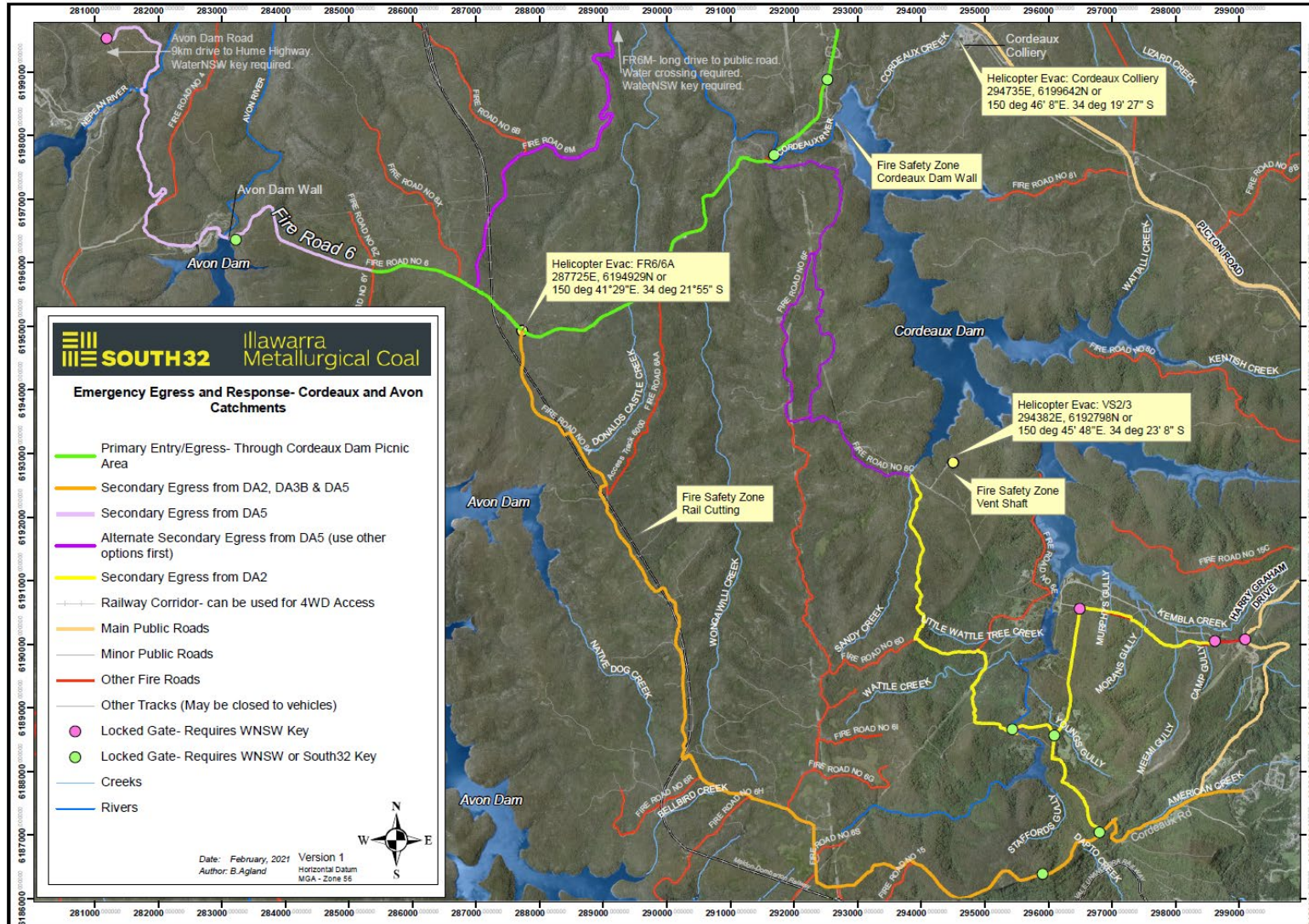
Plan 5: Ventilation Shaft 2/3



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Plan 6: Egress Routes from MSA



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12. APPENDICES

Appendix 1: Consent Conditions: Bushfire Management

Condition	Requirement	Section
Condition 22 of Schedule 4	<p>Bushfire Management Plan</p> <p>The Applicant must prepare and implement a Bushfire Management Plan for the site, with particular reference to the mining area, in consultation with WaterNSW and to the satisfaction of the Rural Fire Service.</p>	This document
Condition 2 of Schedule 8	<p>Management Plan Requirements</p> <p>Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <p>(a) a summary of relevant background or baseline data;</p> <p>(b) details of:</p> <p>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</p> <p>(ii) any relevant limits or performance measures and criteria; and</p> <p>(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</p> <p>(c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;</p> <p>(d) a program to monitor and report on the:</p> <p>(i) impacts and environmental performance of the development; and</p> <p>(ii) effectiveness of the management measures set out pursuant to condition 2(c);</p> <p>(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>(g) a protocol for managing and reporting any:</p>	<p>Section 4</p> <p>Section 3</p> <p>Section 5</p> <p>Section 7</p> <p>Section 5</p> <p>Section 7</p>

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Condition	Requirement	Section
	(i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and (h) a protocol for periodic review of the plan.	Section 6 Section 7.3

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Appendix 2: Agency Consultation

Agency Comments	IMC Response
Rural Fire Service	
<p><u>Comment received 6 May 2021</u></p> <p>Section 3.5 Mt Kembla Community Protection Plan (draft at time of writing)</p>	Included
<p>Section 5.2 Fire Trails under (South 32) care/ control are maintained in accordance with NSW RFS Fire Trail Standards and the Fire Access and Fire Trail Register.</p> <p>Asset Protection Zones are maintained in accordance with the NSW RFS Standards for Asset Protection Zones. The RFS may be consulted as required for review of these areas.</p> <p>South 32 will provide assistance and expertise to relevant government agencies in relation to bush fire matters affecting its infrastructure, assets, and operations, including representation on the Illawarra Bush Fire Management Committee.</p>	Included
<p>Section 5.10 – If a Hot Fire Work TOBAN exemption applies the conditions within the exemption will be complied with.</p>	Included
<p>I also assume that the APZ locations and specifications have been provided by an appropriate bush fire protection specialist.</p>	The location and adequacy of APZs will be reviewed on a periodic basis as required.
Water NSW	
<p><u>Email received 10 May 2021</u></p> <p>WaterNSW has reviewed the bushfire management plan and find it satisfactory.</p>	Noted