

Independent Environmental Audit 2021

Centennial Airly Mine

May 2021



Revision		Lead Auditor	Auditor	Issue date
Final	0	Michael Woolley	Jenny MacMahon	3 May 20201

Report Issued by:

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Abbreviations

Abbreviation	Description
BCS or BCD	Biodiversity Conservation & Science Directorate within NSW Department of Planning, Industry and Environment
CCC	Community Consultative Committee
Centennial Airly	Centennial Airly Pty Ltd, a wholly owned subsidiary of Centennial Coal Company Limited, a wholly owned subsidiary of Banpu Public Company.
Cliff	Continuous rock face, including overhangs, having a minimum length of 20 metres, a minimum height of 10 metres and a minimum slope of 2 to 1 (> 63.4°)
Cliff Line Zone and Zone of First Workings	The area of proposed mining shown in Figure 2 in Appendix 3 of SSD_5581, as may be modified by an approved Extraction Plan
CoC	Condition of consent
CHPP	Coal Handling and Preparation Plant
DA	Development Application
DAWE	Commonwealth Department of Agriculture, Water and Environment which administers the EPBC Act
Department	Department of Planning, Industry and Environment
Director-General	Director-General of Department of Planning, Industry and Environment or delegate
DPIE	NSW Department of Planning, Industry and Environment
EIS	The environmental impact statement titled Airly Mine Extension Project, dated September 2014 and associated response to submissions titled Airly Mine Extension Project, dated February 2015, including the supplementary information comprising water licensing requirements letter dated 6 March 2015, noise assessment letter dated 10 March 2015, MSEC peer review report dated 18 March 2015, revised economic impact assessment dated March 2015, ecotoxicology assessment dated March 2015, supplementary letters and attachments dated 15 April 2015, 8 May 2015 and 18 June 2015, and Centennial's responses to the IPRP's Report in letters dated 8 July and 19 July 2016, as modified by: • MOD 1 - Airly Mine SSD_5581 MOD 1 – Statement of Environmental Effects including the associated Response to Submissions (dated 21 June 2018); and • MOD 2 - Statement of Environmental Effects - Airly Mine Extension Project State Significant Development 5581 - Modification 2 (dated April 2019) including the associated Response to Submissions (dated 13 June 2019), and additional information provided by the Applicant on 24 June 2019.
EC	Electrical Conductivity
ECD	Centennial Coal's Environment Compliance Database
Environmental consequences	Environmental consequences of subsidence impacts, including damage to infrastructure, buildings and residential dwellings; loss of surface flows to the subsurface; loss of standing pools; adverse water quality impacts; development of iron bacterial mats; cliff falls; rock falls; damage to Aboriginal heritage sites; impacts on aquatic ecology, ponding etc.
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPL	Environment Protection Licence
IEA	Independent Environmental Audit
IEP	Independent Expert Panel
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
LCC	Lithgow City Council
LDP	EPL 12374 Licensed Discharge Point
Minister	Minister for Planning and Public spaces, or delegate
Minor cliff	A continuous rock face, including overhangs, which has a: • minimum length of 20 metres and a height between 5 metres and 10 metres; and • minimum slope of 2 to 1 (> 63.4°)
Mtpa	Million tonnes per annum
MW	Miniwall
NPWS	National Parks and Wildlife Services

Abbreviation	Description
Pagodas	Conical or sub-conical rock formations, whether smooth, platy, stepped or terraced, generally between 5 and 20 metres in height and that are not cliffs or minor cliffs
Panel and pillar mining	Also referred to as Miniwall mining
Panel and Pillar Mining Zone	The area of proposed mining shown in Figure 2 in Appendix 3 of SSD_5581, as may be modified by an approved Extraction Plan
Partial Pillar Extraction Zone	The area of proposed mining shown in Figure 2 in Appendix 3 of SSD_5581, as may be modified by an approved Extraction Plan
Planning Secretary	Secretary of NSW Department of Planning, Industry and Environment or delegate
Pollution incident	The Protection of the Environment Operations Act defines a 'pollution incident' as <i>an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise; and 'material harm' as:</i> <i>a) harm to the environment is material if—</i> <i>(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or</i> <i>(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and</i> <i>(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.</i>
POEO Act	Protection of the Environment Operations Act, 1997
Privately owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary).
Project	The development as described in the EA
Proponent	Centennial Airly Pty Ltd, a wholly owned subsidiary of Centennial Coal Company Limited, a wholly owned subsidiary of Banpu Public Company
Resources Regulator	Resources Regulator, within the Department
ROM	Run of Mine
Second Workings	The extraction of coal by pillar extraction methods (including panel and pillar mining, single and double-sided lifting, and pillar splitting and quartering) except where remnant pillars are designed to be long-term stable and non-subsiding (ie leading to < 20 mm subsidence at the surface)
Site	Lands described in Schedule 1 of SSD_5581
SOC	Statement of Commitments
SSD	State Significant Development
SSGV	Site specific guideline value
Subsidence	The totality of subsidence effects, subsidence impacts and environmental consequences of subsidence impacts
Subsidence effects	Deformation of the ground mass due to mining, being all mining induced ground movements, including both vertical and horizontal displacement, tilt, strain and curvature
Subsidence impacts	Physical changes to the ground and its surface caused by Subsidence Effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface disturbance or troughs
TARP	Trigger Action Response Plan
TSS	Total Suspended Solids
VWP	Vibrating wire piezometers
Water Division	Water Division within NSW Department of Planning, Industry and Environment, responsible for surface and groundwater in NSW
WTP	Water Treatment Plant

Executive Summary

MCW Environmental Pty Ltd (MCW Environmental) was engaged by Centennial Airly Pty Ltd (Centennial Airly) to conduct an Independent Environmental Audit (IEA) of the Airly Mine Extension Project (Airly Mine) located at 319 Glen Davis Road, Capertee in the western coalfields of New South Wales. Centennial Airly is the operator of the Airly Mine and is a wholly owned subsidiary of Centennial Coal Company Pty Ltd.

Development Consent State Significant Development 5581 (SSD_5581) for the Airly Mine Extension Project was approved on 15 December 2016, and operation under SSD_5581 commenced on 31 January 2017. The consent allows for the continued operation of the existing mine with extraction of up to 1.8 million tonnes of run-of-mine coal per calendar year for a period of 20 years. Product coal is supplied by train to the domestic market.

The purpose of the IEA was to satisfy the requirements of NSW Department of Planning, Industry and Environment (DPIE) Development Consent (SSD_5581) Schedule 6 – Condition 12 to conduct an IEA every three years.

The period of this IEA is from 13 February 2018 to 10 February 2021.

The IEA included assessment of environmental performance and compliance with the Development Consent SSD_5581, Environment Protection Licence (EPL) 12374 and Mining Lease 1331. Conditions that were assessed as non-compliant, not verified and/or compliant with corresponding recommendations are provided in Section 2.2. Detailed compliance assessments are provided in Appendix A. A summary of the compliance assessment is provided in Table ES 1.

Table ES 1 Compliance Assessment Summary

Key Approval and Licence	Compliant ^{Note 1} (%)	Non-compliant and Not Verified Conditions (no.)
Development Consent SSD_5581	91%	6 ^{Note 2}
Airly Mine Extension Project EIS Statement of Commitments	95%	1
Environmental Protection Licence No. 12374	100%	0
Mining Lease 1331	100%	0

^{Note 1} In assessing the percentage compliance, where a condition has multiple parts, if one part has been assessed as non-compliant then the whole condition has been counted as non-compliant. Conditions assessed as compliant, not triggered or noted have been counted as compliant.

^{Note 2} This does not include non-compliance condition (NC-8) where compliance was assessed as outside the responsibility of Centennial Airly.

Mr Noel Merrick, Senior Principal Hydrogeologist of Hydro Algorithmics, was approved by DPIE as an independent expert to complete an independent expert review of the Airly Mine Groundwater Management Plan. The independent expert review was commissioned by Centennial Coal to meet the requirements of SSD_5581 Schedule 4 Condition 4 and is provided in Appendix G.

In 2020, regulators were notified of subsidence effects attributed to SSD_5581 mining operations, that exceeded EIS predictions and subsidence impacts (surface cracking). DPIE acknowledged receipt of incident details in December 2020 and advised Centennial Airly that an investigation had commenced as to whether Centennial Coal had potentially breached Section 4.2(1)(b) of the *Environmental Planning and Assessment Act 1979*, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent. At the time of preparing this IEA report, the outcome of the investigation had not been reported.

1 INTRODUCTION

1.1 Background

MCW Environmental Pty Ltd (MCW Environmental) was engaged by Centennial Airly Pty Ltd (Centennial Airly) to conduct an Independent Environmental Audit (IEA) of the Airly Mine Extension Project (Airly Mine) located at 319 Glen Davis Road, Capertee in the western coalfields of New South Wales (Figure 1-1). Centennial Airly is the operator of the Airly Mine and is a wholly owned subsidiary of Centennial Coal Company Pty Ltd.

The purpose of the IEA was to satisfy the requirements of NSW Department of Planning, Industry and Environment (DPIE) Development Consent SSD_5581 Schedule 6 – Condition 12 to conduct an IEA at the Airly Mine every three years. The previous IEA for the Airly Mine was conducted by MCW Environmental in 2018.

1.2 The Project

The Airly Mine Development Consent (DA 162/91) was originally granted on 14 April 1993 pursuant to Section 101 of the *Environmental Planning and Assessment Act 1979*. DA 162/91 authorised the extraction of up to 1.8 million tonnes per annum of run-of-mine (ROM) coal within the existing mining lease area, Mining Lease (ML) 1331 (Figure 1-2). Two subsequent modifications to DA 162/91 were approved and allowed an increased amount of trial mining coal throughput of up to 500,000 tonnes per annum for two years to be transported to Mount Piper Station by road, and for the construction and operation of a 66 kV power line to the pit top. The Airly Mine Extension Project was approved in December 2016 and allows mining operations for a period of 20 years (SSD_5581). Centennial Airly commenced operations under SSD_5581 on 31 January 2017. SSD_5581 was modified (MOD 1) in August 2018 to include additional clarification relating to angle of draw restrictions for secondary workings. A further modification of SSD_5581 (MOD 2) was approved in July 2019 to permit the importation of water by train from Charbon Colliery. A 2MW solar farm located within the proposed reject emplacement area was approved by Lithgow City Council in 2019 (DA033/99), constructed in 2019 and commissioned in 2020.

Land ownership is shown in Figure 1-2 with the Airly Mine mining lease area consisting primarily of rugged unpopulated bush land including Mugii Murum-Ban State Conservation Area (SCA), which is managed by the NSW National Parks and Wildlife Service. This SCA was created in 2011 in recognition of sensitive features in the area including scenic cliffs, pagodas and bee-hive geological formations. To protect these sensitive features and provide for different types of mining within the Lithgow Seam, Airly Mine has approval under SSD_5581 to conduct mining activities in accordance with an approved Extraction Plan for five different mining zones (Figure 1-3). Four of the mining zones with mining controls to protect sensitive features, are shown in Figure 1-4.

During the period of the IEA, the following mining methods were used:

- 2018: First workings with large pillars and secondary extraction in the form of splitting and quartering (207 and 206 Panel trial areas).
- 2019: First workings with large pillars and secondary extraction in the form of splitting and quartering (400 A and 400 panels) and, following approval of the Extraction Plan for Panel and Pillar mining technique (also referred to as Miniwall) in April 2019, secondary extraction using the miniwall method of panel and pillar extraction was introduced (Miniwalls 2, 3 and 4). As stated in the Panel and Pillar Extraction Plan (Centennial Airly, April 2019) Miniwall mining differs from long wall mining in that panel void widths supporting the overlying overburden are narrower and the final chain pillars remaining following panel extraction are designed to provide long term stable support to the surface with negligible ground movement, low angle of draw, and no expected surface cracking.
- 2020: First workings with large pillars and secondary extraction using the miniwall method of panel and pillar extraction (Miniwalls 4, 5, 6 and 7)

Coal from underground continuous miners is transported by conveyor belt to the pit top crushing and screening plant, with coal less than 50mm in size conveyed to the coal stockpile. Coal from the stockpile is transferred by a tunnel reclaim system to a train loading bin for dispatch off site by rail. Although approved, there is no coal washery or reject emplacement area on site. Mine workings during the period of the IEA are shown in Figure 1-6.

The main components of the Airly Mine operations are underground mining and the pit top surface facilities area including water management systems, car park, administration building, workshop, conveyors, coal handling and train loading as shown on Figure 1-5, and mine ventilation infrastructure. The underground mine is accessed via the pit top.

The nearest residential neighbours are located over 1 km to the west of the pit top, adjacent to the Wallerawang-Gwabegar railway.

In 2020, subsidence effects exceeding EIS predictions and subsidence impacts (surface cracking) were reported to regulators. DPIE acknowledged receipt of detailed incident reports in December 2020 and advised Centennial Airly that an investigation has commenced as to whether Centennial Coal has potentially breached Section 4.2(1)(b) of the *Environmental Planning and Assessment Act 1979*, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent. At the time of preparing this IEA report, the outcome of the investigation had not been reported. Further details are provided in Section 2.5.

1.3 IEA Team

The IEA was undertaken by:

- Michael Woolley, Lead Auditor (MCW Environmental) and certified Lead Auditor (Exemplar Global).
- Jenny MacMahon, Auditor (MacMahon Consulting) and certified Lead Auditor (Exemplar Global).

The IEA team was endorsed by DPIE on 13 January 2021 (Appendix C). A statement of independence of the Lead Auditor is included in Appendix D.

Mr Noel Merrick, Senior Principal Hydrogeologist of Hydro Algorithmics, was approved by DPIE as an independent expert to complete an independent expert review of the Airly Mine Groundwater Management Plan (Appendix C). The independent expert review was commissioned by Centennial Coal to meet the requirements of SSD_5581 Schedule 4 Condition 4, and is provided in Appendix G. MCW Environmental has not reviewed or undertaken any role in the independent expert review other than including it as an appendix to this IEA report.

1.4 Objective

The objective of the IEA was to meet the requirements of Development Consent of SSD_5581 Schedule 6-Condition 12.

1.5 Scope of Work

1.5.1 Independent Environmental Audit

The audit was conducted in accordance with the requirements of Development Consent SSD_5581 Schedule 6 – Condition 12 as shown in Table 1-1.

Table 1-1: Scope of Work

Condition	Requirement	This Report
12	<i>Within one year of the date of commencement and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:</i>	Section 1.5.2
(a)	<i>be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</i>	Section 1.3 Appendix C & G
(b)	<i>include consultation with the relevant agencies</i>	Appendix F

Condition	Requirement	This Report
(c)	<i>assess the environmental performance of the development and assess whether it is complying with the requirements in this consent, and any other relevant approvals, relevant EPL/s and/or Mining Lease/s (including any assessment, plan or program required under these approvals);</i>	Sections 2 , 3 and Appendix A
(d)	<i>review the adequacy of any strategies, plans or programs required under the abovementioned approvals; and</i>	Section 2 and Appendix A
(e)	<i>recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under these approvals; and</i>	Sections 2 and Appendix A
(f)	<i>be conducted and reported to the satisfaction of the Secretary.</i>	
<i>Note: This audit team must be led by a suitably qualified auditor, and include experts in any fields specified by the Secretary.</i>		

1.5.2 Period of the IEA

The period of this IEA is from the 13 February 2018 (the day following the last day of the previous IEA period) to 10 February 2021 (the day prior to the first day of the site visit conducted as part of this IEA).

1.5.3 Process

The IEA included the following activities:

- The IEA methodology was developed to be consistent with ISO 19011:2002 – Guidelines for Quality and/or Environmental Systems Auditing and in consideration of the Independent Audit Post Approval Requirements (DPIE, May 2020).
- Initial discussions were held with Centennial Airly to plan the IEA, develop the scope, identify key Centennial Airly personnel, request documentation, and confirm logistics for the site visit.
- A two-day site visit was conducted on 11 and 12 February 2021. Tasks undertaken during the IEA site visits included:
 - An opening meeting on 11 February 2021. A register of attendees is included in Appendix E.
 - Site inspections on 11 and 12 February 2021.
 - Review of documentation.
 - Interviews with the Environment & Community Coordinator; Mine Manager, Technical Services Manager. Mine Mechanical Supervisor and Control Room Operator.
 - A close out meeting on 12 February 2021. A register of attendees is included in Appendix E.
- Provision and review of additional documentation after the site visits.
- Review of feedback received from relevant regulatory agencies on the environmental performance of the project during the period of the IEA (summarised in Appendix F).
- An assessment of compliance for conditions within SSD_5581, EPL 12374 and ML1331 for current activities at the Airly Mine (Appendix A).
- Review of the Environment Compliance Database (ECD); monthly Environmental Monitoring Reports; complaint register; regulatory correspondence and consultation; EPA Public Register; and Annual Reviews; was undertaken to identify regulatory action, incidents and complaints that occurred during the period of the IEA.
- Assessment of the status of implementation of actions for recommendations (for non-compliances) in the previous IEA (Appendix B).
- Assessment of the adequacy of strategies, plans or programs developed as part of SSD_5581, EPL 12374 and ML 1331 (Section Table 2-2 and Appendix A).
- For conditions within SSD_5581, EPL 12374 and ML 1331 that were assessed as non-compliant, not verified and where there is an opportunity to improve environmental performance, recommendations have been provided (Table 2-2).

- Review of regulatory actions and the 2020 subsidence incident.
- Preparation of a draft report and finalisation of the report following review of comments from Centennial Airly.

1.5.4 Key Approvals and Licence

The IEA assessed compliance with conditions of consent in the following key approvals and licence for current activities at the Airly Mine:

- Development Consent SSD_5581 (2016) (Appendix A1) with the following modifications approved during the period of the IEA:
 - MOD 1 (2018) for additional clarification relating to angle of draw restrictions for secondary workings.
 - MOD 2 (2019) for the importation of water by train from Charbon Colliery.
- EPL 12374 as varied during the period of the IEA (Appendix A2):
 - Variation (2018) to revise the Electrical Conductivity (EC) limit due to naturally elevated EC in the upstream waters of Airly Creek.
- ML 1331 (Appendix A3).

A 2MW solar farm located within the proposed reject emplacement area was approved by Lithgow City Council in 2019 (DA033/99), constructed in 2019 and commissioned in 2020. The IEA assessed commitments and management measures triggered by Development Consent SSD_5581 regarding the Solar Farm and excluded an assessment of DA033/99.

1.5.5 Management Plans

Management and Extraction Plans required under SSD_5581, and the corresponding date of revision and approval during the period of this IEA, are summarised in Table 1-2 and Table 1-3 respectively. An assessment of compliance of management plans against SSD_5581 conditions of consent is provided in Appendix A.

Table 1-2: Management Plans required under SSD_5581

Management Plan (date)	Revision during the period of the IEA (date)	Approved by, date
Mining Operations Plan (MOP): 1 January 2018 to 31 December 2024) (September 2018)	• December 2017 • Amendment A, March 2020	• DPIE, 10 January 2018 • DPIE, August 2020
Environmental Management Strategy AIR-MP-2196 (April 2017)	July 2018	DPIE, 1 November 2018
Water Management Plan (July 2018)	• July 2018 • October 2019	• DPIE, 7 September 2018 • 2019: Not approved yet
Western Region Biodiversity Management Plan (April 2017)	August 2019	No
Western Region Noise Management Plan (2018)	June 2018	• DPIE, 4 July 2018 • DPIE, September 2018
Western Region Air Quality and Greenhouse Gas Management Plan (April 2017)	April 2018	DPIE, 4 July 2018
Western Region Historic Heritage Management Plan (February 2017)	No	DPIE, 4 July 2018
Western Region Aboriginal Cultural Heritage Management Plan (July 2017)	No	DPIE, 27 October 2017
Airly Bushfire Management Plan (June 2020)	No	N/A
Traffic Management Plan (2017)	July 2018	DPIE, 7 September 2018
Exploration Activities and Minor Surface Infrastructure Management Plan (July 2018)	No	DPIE, 1 November 2018

Table 1-3: Extraction Plans required under SSD_5581

Extraction Plan (Plan date)	Revision during the period of the IEA (Plan date)	Approved by, most recent t date
MOD 3 Extraction Plan Variation Approval (2016)	No	DPIE, September 2016
Airly Mine Splitting and Quartering Extraction Plan ML 1331 (2017)	• 2018 • 2019	• DPIE, 30 August 2018 • DPIE, May 2019
Mt Airly Panel and Pillar Mining Zone Extraction Plan (April 2019)	No	DPIE, April 2019
Cliff Line Zone and Zone of First Workings Extraction Plan (September 2017)	No	DPIE, 16 October 2017

1.5.6 Audits

The following independent audit was undertaken during the period of the IEA:

- Desktop Audit Report (Final)- Publishing Pollution Monitoring Report Data EPL 12374 (EPA, 18 August 2020). The audit was conducted by the EPA's Major Compliance and Investigations team and examined pollution monitoring data published in Centennial Airly website for the period starting 05 June 2019 to 04 June 2020. The EPA reported *"We acknowledge that Centennial Airly has published an extensive amount of monitoring data and additional information on their website. No non-compliances were identified by the auditor. It is noted that the licensee has immediately addressed the action suggested under 'areas for improvement' outlined in the summary of audit findings"*.

1.6 Assessment of Compliance

The assessment of compliance was based on evidence provided in documentation supported by observation and interview, and is provided in Appendix A. Compliance status categories are described in Table 1-4.

Table 1-4: Compliance Status Description

Performance Category	Definition
Compliant (C)	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
Non-compliant (NC)	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit
Not triggered	A requirement has an activation or timing trigger that has not been met during the temporal scope of the audit being undertaken (may be a retrospective or future requirement), therefore an assessment of compliance is not relevant
Not verified	Where the auditor has not been able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit.

Where a condition was assessed as non-compliant, not verified and/or compliant and there is an opportunity to improve environmental performance, a recommendation has been made and included in Table 2-2.

1.7 Agency and Community Consultation

Consultation with agencies and community was undertaken in February and March 2021 with feedback and responses summarised in Appendix F.

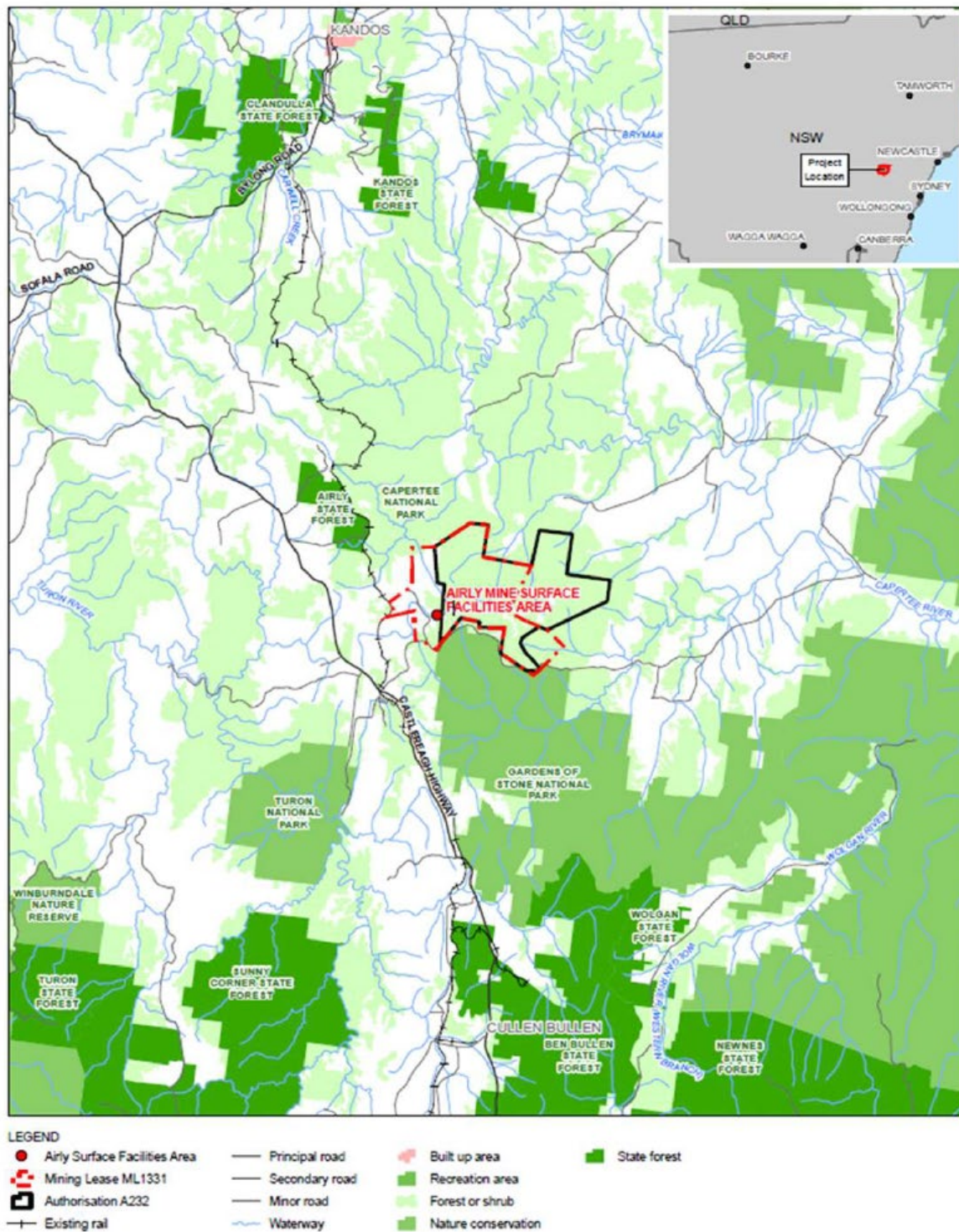


Figure 1-1: Regional Context
Source: 2019 Annual Review (Centennial Airly, March 2020)

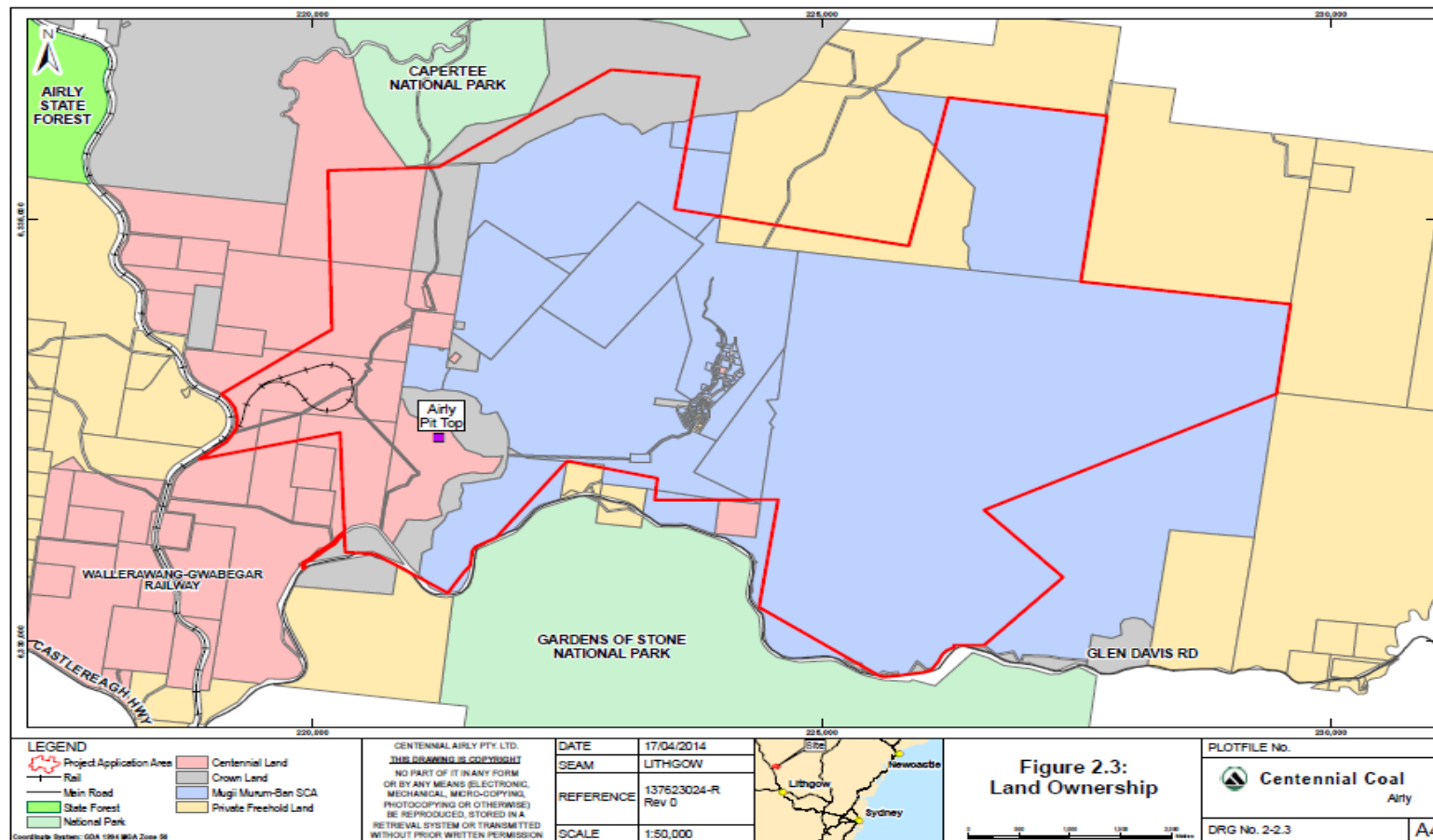


Figure 1-2: Land Ownership

Source: EIS Airly Mine Extension Project (Centennial Airly, 2014)

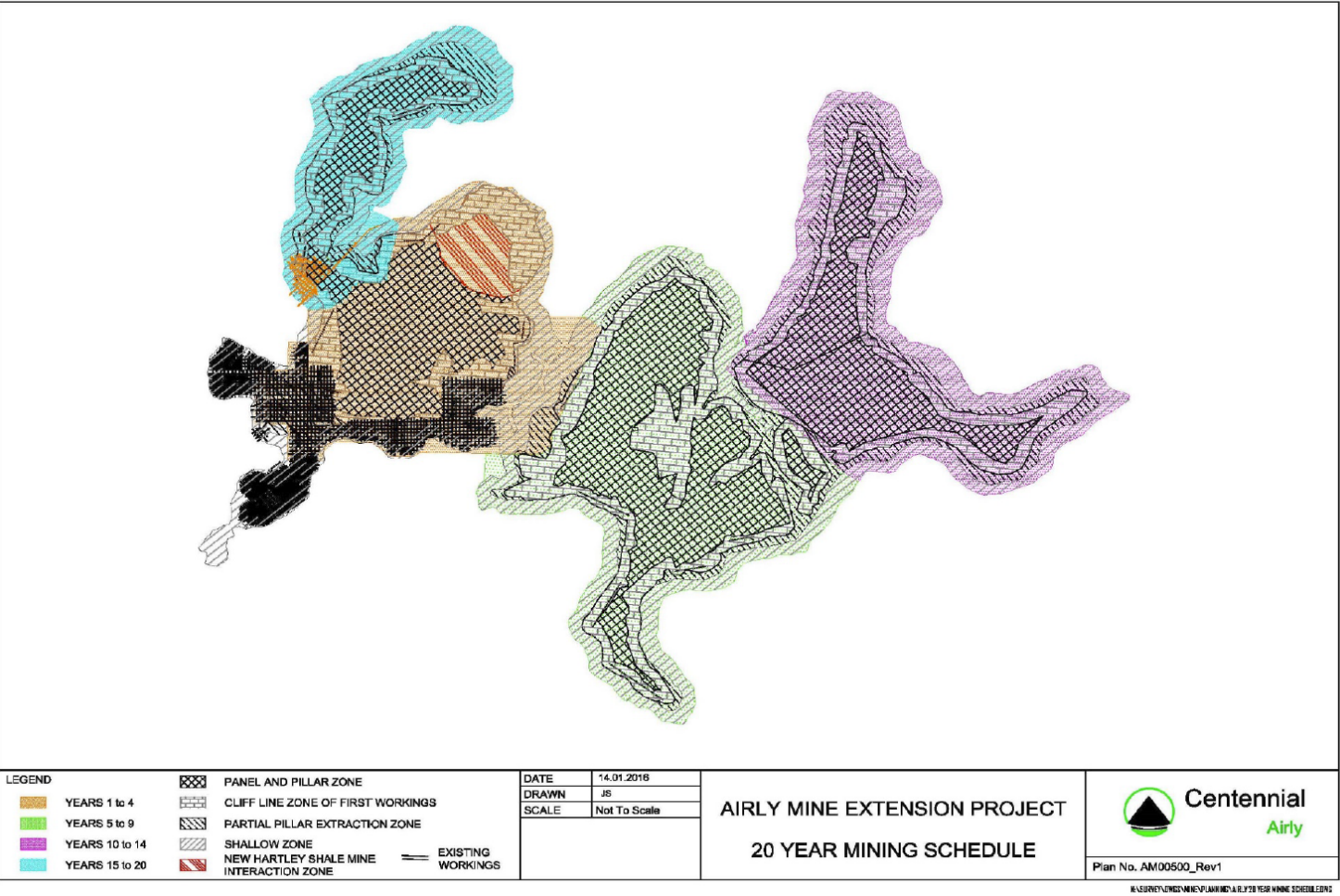


Figure 1-3: Mining Zones
Source: SSD_5581 Figure 3.

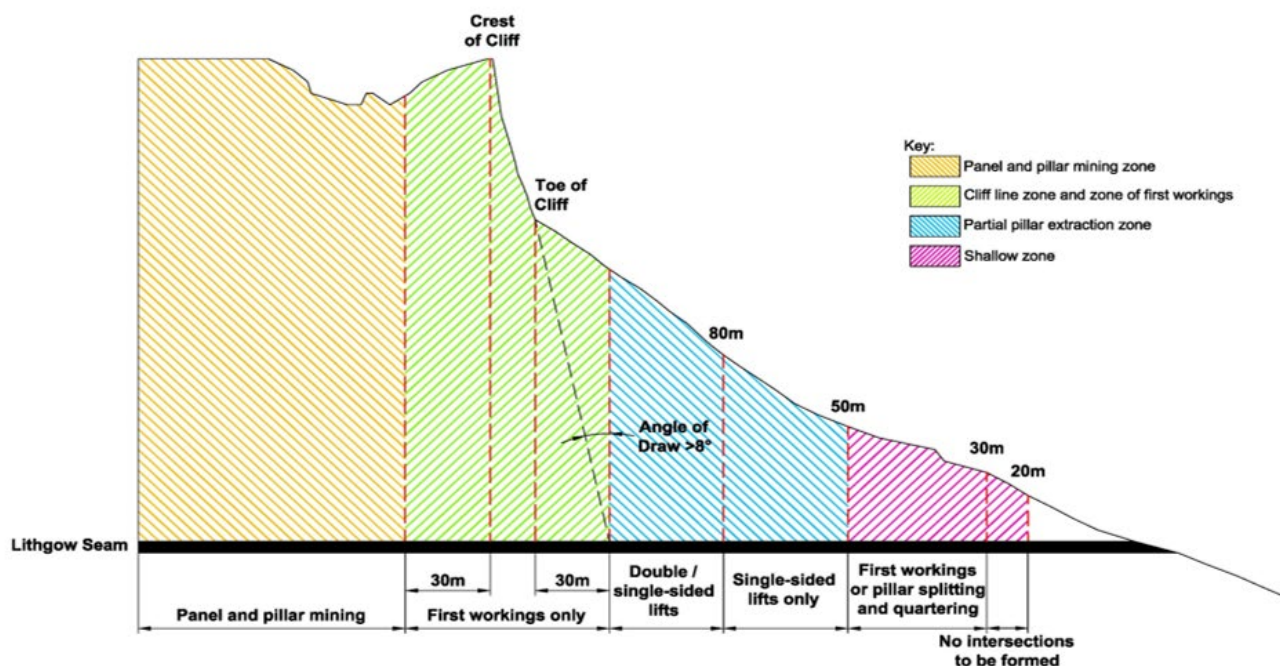


Figure 1-4: Mining Zone Controls around Cliffs

Source: 2021 IEA Opening Meeting presentation (Centennial Airly, 11 February 2021)

Note: Miniwall mining is covered under Panel and Pillar Mining Zone

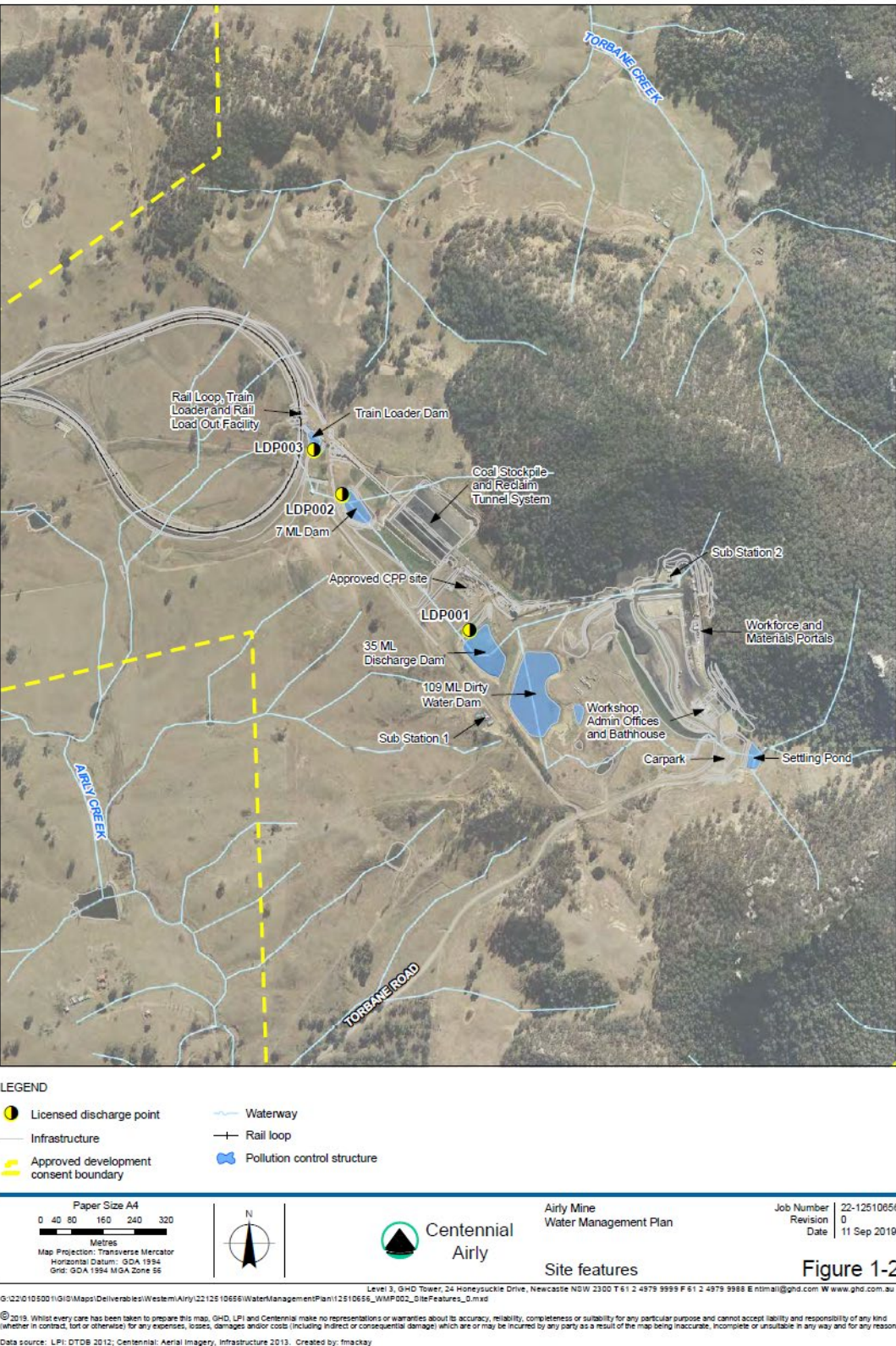


Figure 1-5: Site Features
Source: Water Management Plan (Centennial Airly, October 2019)

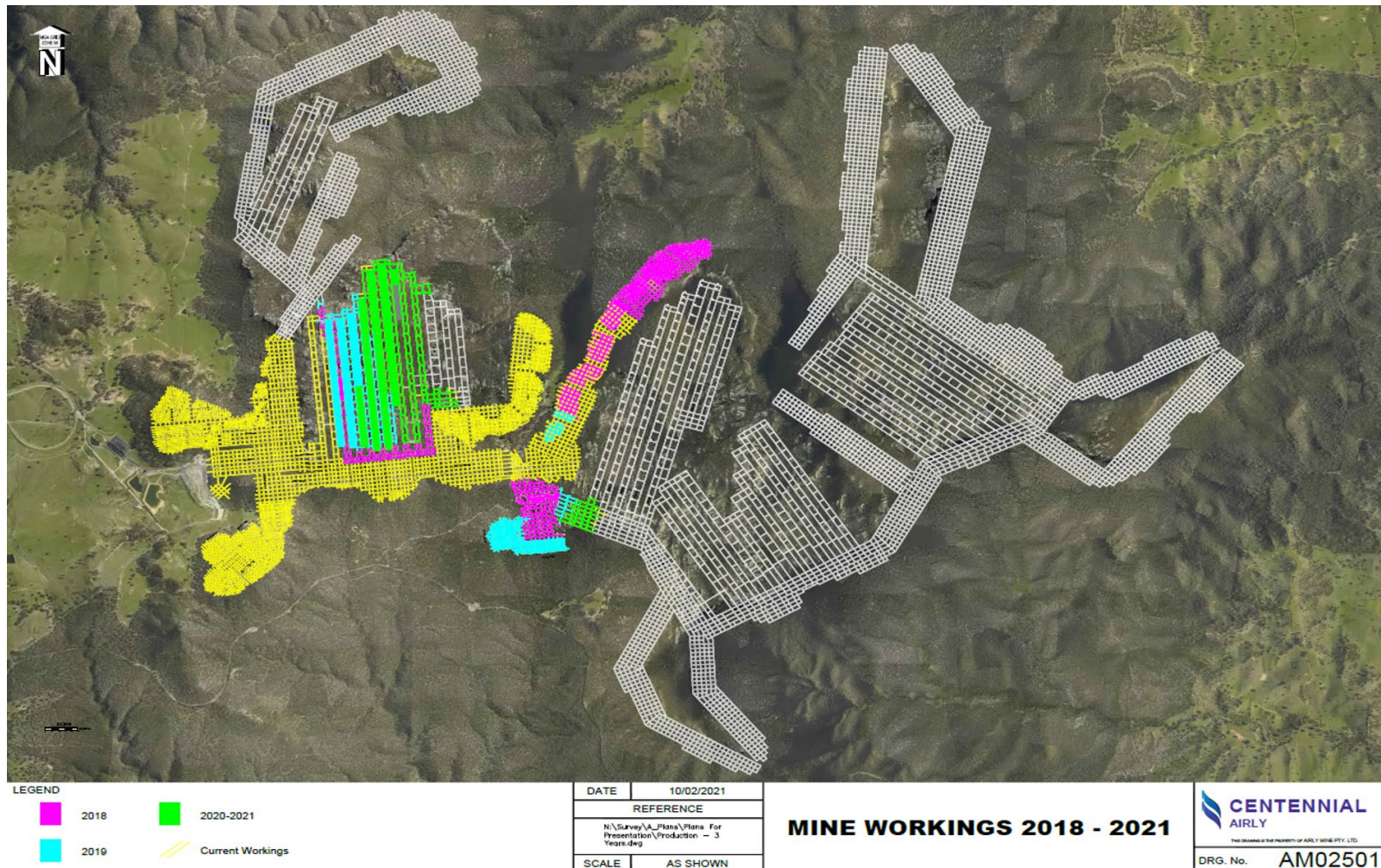


Figure 1-6: Mine workings during the period of the IEA
Source: 2021 IEA Opening Meeting presentation (Centennial Airly, 11 February 2021)

2 Audit Findings

2.1 Compliance Assessment

An assessment of compliance for conditions within key approvals for current activities is included in Appendix A. A summary of the compliance assessment is provided in Table 2-1.

Table 2-1: Compliance Assessment Summary

Approval	Total Conditions (no.)	Compliant (%) ^{Note 1}	Non-compliant and Not verified (no.)
Development Consent SSD_5581	66	91%	6 ^{Note 2}
Airly Mine Extension Project EIS Statement of Commitments	20	95%	1
Environmental Protection Licence No. 12374	50	100%	0
Mining Lease 1331	9	100%	0

^{Note 1} In assessing the percentage compliance, where a condition has multiple parts, if one part has been assessed as non-compliant then the whole condition has been counted as non-compliant. Conditions assessed as compliant, not triggered or noted have been counted as compliant.

^{Note 2} This does not include SSD_5581 Schedule 6 Condition 8 where compliance was assessed as outside the responsibility of Centennial Airly.

2.2 Non-compliant, Not Verified and Compliant Conditions with Recommendations

Conditions within SSD_5581, ML1331 and EPL 12374 that were assessed as non-compliant or not verified, and corresponding recommended actions that are proposed to be taken or have been taken, are provided in Table 2-2.

SSD_5581 Schedule 6 Condition 8 (NC-8) was assessed as non-compliant and outside the responsibility of Centennial Airly. This condition is provided in Table 2-3.

Conditions within SSD_5581, ML1331 and EPL 12374 that were assessed as compliant and where there is an opportunity to improve environmental performance, and corresponding recommended actions that are proposed to be taken, are provided in Table 2-4.

Recommended actions from the Independent Expert Review of the Groundwater Management Plan (SLR, 30 April 2021), which was undertaken to meet SSD_5581 Schedule 4 Condition 14, are provided in Appendix G.

2.3 Previous IEA Action Status

An assessment of the status of implementation of the recommendations for non-compliances in the previous 2018 IEA is provided in Appendix B.

Table 2-2: Non-compliant and Not verified Conditions with Recommendations

ID #	Source	Requirement Summary	Finding	Recommendation #
Not verified-1	SSD_5581 Sch 2-1	Obligation to minimise harm to the environment In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	- There were no exceedances of EPL 12374 conditions during the period of the IEA. - The Pollution Incident Response Management Plan was not activated during the period of the IEA. Subsidence (refer Section 2.5 of this IEA report) - Reasonable and feasible measures to prevent and/or minimise harm from subsidence to the environment during the period of the IEA were demonstrated by: - Undertaking mining in accordance with the approved mine design (Annual Reviews 2018 -2020). The approved mine design specifically avoided impact where possible as proposed in the Mt Airly Extension Project EIS (Centennial Airly & Golder, 2014) and the Panel and Pillar Mining Zone Extraction Plan (Centennial Airly, 2019). For example, mine design included a range of mining zones with an associated range of extraction void widths to match extraction with natural and social sensitivity to minimise impacts (refer Figure 1 3); and to further avoid impacts to cliffs, Centennial Airly committed to a set back of 26.5 degree angle of draw from the tops of cliffs within the cliff line zone around all miniwall panels in the Panel and Pillar Mining Zone Extraction Plan (April 2019) and as shown in Plan AM 02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021). This additional setback commitment was more conservative than the approved approach in the SSD_5581 Schedule 3 Condition 1 (which required a set back of 26.5 degree angle of draw from the tops of cliffs within the cliff line zone around at least the first four panels). - Undertaking extensive and integrated monitoring, as described in the EIS and subsequent Extraction Plans, to validate mine design. In addition to underground coal pillar deformation and stress condition monitoring and	As the exceedance of SSD_5581 Schedule 3 Condition 2 subsidence impact performance measure is currently under investigation by DPIE, no further recommendations have been made.

ID #	Source	Requirement Summary	Finding	Recommendation #
			conventional subsidence monitoring (such as digital levelling, 3D total station, pegs in the ground and prisms on isolated rock features), subsidence monitoring focussed on sensitive features within the cliff line area using high resolution 3D photogrammetry and a network of prisms read by total station survey. ○ Analysing monitoring results and in response to higher than predicted subsidence results, triggering investigations and adaptive management in accordance with the approved Master Trigger Action Response Plan (Panel and Pillar Mining Zone Extraction Plan (April 2019)). ○ Following triggering of TARP actions for Surface Crack (Fracture 01) and Surface Crack (Fracture 02), the following adaptive management processes were implemented to transition Airly Mine to subsidence less than EIS predictions and minimise further impacts: • Increasing the length of pillars from MW5 onwards. • Revising Extraction Plan for MW10-MW15 to transition Airly Mine back to subsidence less than EIS predictions, has been submitted to DPIE for approval. At the time of preparing this IEA, approval for this Extraction Plan had not been received. • Increasing the width of pillars from MW10 onwards for Mt Airly. • Updating modelling and consultation with IEP on revised mining layout. • The Mt Airly Extension Project EIS (Centennial Airly & Golder, 2014) predicted “vertical subsidence not exceeding 125 mm, strains up to 2 mm/m, tilts up to 3.0 mm/m and no surface fracturing”. • Despite mining and monitoring having been undertaken in accordance with the approved EIS and subsequent Extraction Plans, subsidence effect was measured in 2020 subsidence surveys that exceeded EIS predictions for vertical subsidence (125mm predicted, maximum 612mm measured), tilt (3mm/m predicted, maximum 8.7mm/m measured,) and strain (2mm/m predicted, maximum 3.2 mm/m measured); and subsidence impacts were recorded (surface cracking - Fracture 01 and Fracture 02). Surface cracking was assessed in this	

ID #	Source	Requirement Summary	Finding	Recommendation #
			IEA as a non-compliance with SSD_5581 Schedule 3 Condition 2 (refer NC-3 in this table below). • Commitments for monitoring, investigation triggers and response as described in the EIS (Centennial Airly & Golder, 2014), and the subsequent Panel and Pillar Extraction Plan (Centennial Airly, 2019), were assessed during the IEA as having been generally met. • DPIE has commenced an investigation into whether Centennial Coal has potentially breached Section 4.2(1)(b) of the <i>Environmental Planning and Assessment Act 1979</i>, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of SSD_5581 Schedule 3, Condition 2. MCW Environmental has assumed that this investigation will include an assessment of environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of surface cracking; and consequently, whether harm to the environment has been minimised. Although there has been no exceedance of EPL 12374 conditions and no notifications of environmental harm were reported by Centennial Airly, as an assessment of environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of surface cracking has not been undertaken, and given an ongoing investigation by DPIE, compliance with this condition has not been assessed and has been nominated as 'Not verified'.	
Not verified 2	SSD_5581 Sch 2-2	Terms of Consent The Applicant must carry out the development (a) generally in accordance with the EIS and the Mining schedule (see Figure 3 in Appendix 2);	• Although Centennial Airly have generally carried out the development in accordance with the EIS, subsidence effect was measured in 2020 subsidence surveys that exceeded EIS predictions for vertical subsidence, tilt and strain; and surface cracking was recorded. • Surface cracking was assessed in this IEA as a non-compliance with SSD_5581 Schedule 3 Condition 2 (refer NC-3 in this table below) for exceeding the Table 1 subsidence impact performance measure '<i>No greater subsidence impacts or environmental consequences than predicted in the EIS</i>'. • Further discussion on subsidence including EIS subsidence predictions, monitoring, investigation triggers and responses is provided in Section 2.5 of this IEA report and NV-1 in this table above. • An assessment of the environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of	As the exceedance of SSD_5581 Schedule 3 Condition 2 subsidence impact performance measure is currently under investigation by DPIE, no further recommendations have been made.

ID #	Source	Requirement Summary	Finding	Recommendation #		
			surface cracking has not been undertaken, and given an ongoing investigation by DPIE, compliance with this condition has not been assessed and has been nominated as 'Not verified'.			
NC-3	SSD_5581 Sch 3-2	Performance Measures – Natural and Heritage Features, etc The Applicant must ensure that the development does not cause any exceedances of the performance measures (Table 1): <table><tr><td>All other land not covered by a performance measure above</td><td>No greater subsidence impacts or environmental consequences than predicted in the EIS</td></tr></table>	All other land not covered by a performance measure above	No greater subsidence impacts or environmental consequences than predicted in the EIS	- Refer Section 2.5 of this IEA report. - Subsidence effect was measured in 2020 subsidence surveys that exceeded EIS predictions for vertical subsidence (125mm predicted, maximum 612mm measured), tilt (3mm/m predicted, maximum 8.7mm/m measured,) and strain (2mm/m predicted, maximum 3.2 mm/m measured); and subsidence impacts were recorded (surface cracking - Fracture 01 and Fracture 02). The land where surface cracking was observed was classified under SSD_5581 Schedule 3 Condition 2 Table 1 as '<i>All other land not covered by a performance measure above</i>' with a corresponding subsidence impact performance measure '<i>No greater subsidence impacts or environmental consequences than predicted in the EIS</i>'. As the EIS predicted '<i>no surface fracturing</i>', surface cracking represents a non-compliance with SSD_5581 Schedule 3 Condition 2 Table 1 performance measure for '<i>All other land not covered by a performance measure above</i>'. - MCW Environmental has not undertaken an assessment of environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of surface cracking.	As the exceedance of SSD_5581 Schedule 3 Condition 2 subsidence impact performance measure is currently under investigation by DPIE, no further recommendations have been made.
All other land not covered by a performance measure above	No greater subsidence impacts or environmental consequences than predicted in the EIS					
NC-4	SSD_5581 Sch 4-5	Air Quality Criteria The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 5 at any residence on privately-owned land.	Although dust deposition gauge monitoring indicates that depositional dust results recorded during the period of the IEA were below the air quality criteria, as there was no HVAS monitoring of annual PM10 or Total Suspended Particulates in 2018, 2019 and 2020, this condition was assessed as Non-compliant. As the HVAS was commissioned on 1 January 2021, no further recommendations have been made.	As the HVAS was commissioned on 1 January 2021, no further recommendations have been made.		

ID #	Source	Requirement Summary	Finding	Recommendation #
NC-5	SSD_5581 Sch 4-15	Biodiversity Management Plan Prior to carrying out any development under this consent that would cause surface disturbance, the Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must: (d) include a detailed description of the measures that would be implemented to: control weeds and feral pests including, but not limited to goats, rabbits, European Red Fox, cats and pigs; Note: The Biodiversity Management Plan and Rehabilitation Management Plan need to be substantially integrated for achieving biodiversity objectives for the rehabilitated mine-site.	- Although the extent of weeds (particularly Blackberry) was notably reduced in grazing lands surrounding the Airly Mine since the previous 2018 IEA, given the proximity of the Airly Mine site to the Mugii Murum-ban State Conservation Area and requirements specified within the Western Region Biodiversity Management Plan, weed management requires routine inspection and treatment. During the site inspection the following observations were made: - Blackberry (a noxious weed) was observed in grazing lands on the road entering the Airly mine car park and adjacent to the weather station (near Airly homestead). - Pampas Grass on the bank of the 35ML Dam (removed on 12 February 2021). - General weeds on the leased property near the Mt Airly camping ground. - The Airly site-specific Biodiversity Management Plan references Section 4.4.2 in the Regional Biodiversity Management Plan (RBMP) for weed management. There is no Section 4.4.2 in the RBMP, alternatively Section 6.6.2 includes weed management treatment and timing.	R1: Develop a regular weed inspection and treatment regime; and raise awareness of Centennial Airly's weed control obligations under SSD_5581, by informing lessees of Centennial Airly's aim to continue to progress the control and suppression of weeds and minimise potential weed impacts on the adjacent Mugii Murum-ban State Conservation Area. R2: Correct weed management reference numbering in the Western Region Biodiversity Management Plan Appendix B Airly e.g. the Airly site-specific Biodiversity Management Plan references Section 4.4.2 in the RBMP for weed management. There is no Section 4.4.2, alternatively Section 6.6.2 includes weed management treatment and timing.
NC-6	SSD_5581 Sch 6-2	Management Plan Requirements The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (b) a description of: the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Management plans were assessed as meeting the requirements of SSD_5581 Schedule 6, Condition 2 with the exception of the Water Management Plan (Centennial Airly, July 2018). The 2018 Water Management Plan does not identify the requirements of SSD_5581 Schedule 6, Condition 2(b) in Table 1-2 and does not include all of the management and reporting requirements for Condition 2 (e), (f), (g) and (h). The 2018 Water Management Plan was revised in 2019, and addressed these missing requirements e.g., a revised Table 1-2, Section 7 and new reporting Action Plan (Section 8). The revised 2019 Water Management Plan was submitted to DPIE for approval in	As the 2018 Water Management Plan was revised in 2019 to address feedback from DPIE and meet the requirements of SSD_5581 Schedule 4 Condition 13 and Schedule 6 Condition 2; and submitted to DPIE for approval, no further recommendations have been made.

ID #	Source	Requirement Summary	Finding	Recommendation #
		(e) a contingency plan to manage any unpredicted impacts and their consequences; (f) a program to investigate and implement ways to improve the environmental performance of the development over time; (g) a protocol for managing and reporting any: - incidents; - complaints; - non-compliances with statutory requirements; and - exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan.	October 2019 consequently, no further recommendations for Water Management Plan improvements were identified. - The Western Region Biodiversity Management Plan (April 2017) was revised in 2019 and submitted to DPIE. Approval has not been received. - The 2018 Water Management Plan (July 2018) was revised in 2019 and submitted to DPIE. Approval has not been received.	R3: Consult with DPIE regarding the approval status of new and/or revised environmental management plans, programs and strategies.
NC-7	2014 EIS SoC 7	Water Management Plan The Plan will be updated in accordance with the conditions of the new Development Consent	The 2018 Water Management Plan did not meet the requirements of SSD_5581 Schedule 6, Condition 2(b) and does not include all of the management and reporting requirements for Condition 2 (e), (f), (g) and (h). Refer NC-6 SSD_5581 Schedule 6 Condition 2.	Refer NC-6 (SSD_5581 Schedule 6 Condition 2).

Table 2-3: Non-Compliance Condition (not responsibility of Centennial Airly) with Recommendation

ID #	Source	Requirement Summary	Finding	Recommendation #
NC-8	SSD_5581 Sch 6-8	Community Consultative Committee The Applicant must operate a Community Consultative Committee for the development to the satisfaction of the Secretary. This CCC must be operated in accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007) or its latest version.	- Although a CCC Annual Report for year ended 31 December 2020 (in accordance with the DPIE CCC guidelines) was sighted, Annual Reports for 2018 and 2019 were not provided. - It is the responsibility of the CCC Chair, appointed by DPIE, to provide an annual report (in accordance with CCC Guidelines. Centennial Airly is not responsible for the provision of CCC Annual Reports.	R4: CCC Chair to provide an Annual Report to DPIE (in accordance with Community Consultative Committee Guidelines, State Significant Projects (DPIE, November 2016).

Table 2-4: Compliant Conditions with Recommendations

ID #	Source	Requirement Summary	Finding	Recommendation #		
C-1	SSD_5581 Sch 3-3	Performance Measure – Built Features The Applicant must ensure that the development does not cause any exceedances of the performance measures in Table 2 to the satisfaction of the Secretary. <table><tr><td>Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates</td><td>Use should be maintained wherever practicable in consultation with BCD</td></tr></table>	Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates	Use should be maintained wherever practicable in consultation with BCD	- No incident or complaints were recorded regarding the campground, gates, fences or the 4WD track. - This condition was assessed as Compliant as the 4WD track to Mt Airly monitoring locations was accessible, the condition of the track was improved since the 2018 IEA site inspection, and there was no damage to the 4WD track observed as a result of Airly mine activities such as subsidence. - Following agency consultation for this IEA, BCD advised “NPWS should again be consulted regarding MMBSCA access and trail management” as part of ongoing management of the area; consequently, a recommendation has been included to consult with NPWS regarding agreement of a program to maintain Mugii Murum-ban State Conservation Area access and trail management and not exceed SSD_5581 Schedule 3 Condition 3 performance measures for ‘Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates’.	R5: Consult with NPWS to agree a program for maintenance of Mugii Murum-ban State Conservation Area access and trail management and meet SSD_5581 Schedule 3 Condition 3 performance measures for ‘Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates’.
Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates	Use should be maintained wherever practicable in consultation with BCD					
C-2	SSD_5581 Sch 4-8	Meteorological Monitoring Prior to commencement of development under this consent and for the life of the development, the Applicant must ensure that there is a meteorological station in the vicinity of the site that: (a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy; and (b) is capable of continuous real-time measurement of atmospheric stability category determined by the sigma theta method in accordance with the NSW Industrial Noise Policy.	a) The 6-month and 12-month automatic weather station verification certificate states that the operation and maintenance of the weather station conforms to AS3508.14, rather than the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy. Consequently, a recommendation has been made to report on the 6-month and 12-month verification certificate, that the weather station has been assessed against the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy and is capable of continuous real-time measurement of atmospheric stability category determined by the sigma theta method in accordance with the NSW Industrial Noise Policy.	R6: Include on the 6-month and 12-month weather station verification report, that the weather station has been assessed against the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy and is capable of continuous real-time measurement of atmospheric stability category determined by the sigma theta method in accordance with the NSW Industrial Noise Policy.		
C-3	SSD_5581 Sch 4-10	Water Pollution Unless an EPL authorises otherwise, the Applicant must comply with Section 120 of the POEO Act.	- Surface water drains in the area adjacent to the train loading bay sump were observed to contain high sediment/coal loads. - Although the sediment dams were observed to have sufficient freeboard at the time of the inspection, areas of reeds were present in the 35ML	R7: Reduce the sediment load and potential for surface water contamination in the area adjacent to the train loading bay		

ID #	Source	Requirement Summary	Finding	Recommendation #		
			Dam. Calculations of the capacity of the freeboard were not undertaken by the auditors. - As there were no discharges from LDP1 and LDP2; and a single discharge event for LDP3 (36kL) in January 2019 (subject to rainfall exemption under condition EPL 12374 L2.5) following a high rainfall storm event., this condition was assessed as Compliant. - Recommendations have been made to reduce the sediment load and potential surface water contamination in the area adjacent to the train loading bay sump to prevent loss of containment to the Airly Creek catchment area and potential breach of Section 120 Protection of the Environment Operations Act 1997; and assess the impact of reed growth on capacity within the 35 ML Discharge Dam.	sump to prevent loss of containment to the Airly Creek catchment area and potential breach of Section 120 POEO Act; and assess the impact of reed growth on the capacity of the 35 ML Discharge Dam and conduct corrective actions if required.		
C-4	SSD_5581 Sch 4- 12	Water Management Performance Measures The Applicant must comply with the performance measures in Table 6 to the satisfaction of the Secretary. <table><tr><td>Chemical and petroleum storage</td><td>Chemical and hydrocarbon products to be stored in banded areas in accordance with relevant Australian Standards</td></tr></table>	Chemical and petroleum storage	Chemical and hydrocarbon products to be stored in banded areas in accordance with relevant Australian Standards	During the site inspection the following observations were made; staining from historic overflow/spills from the waste oil storage area at the rear of the workshop; a waste/ chemical storage area with sediment laden bunds; and sediment/coal fines in road drains at the pit top area. Consequently, although considerable improvement has been made in the storage of chemicals and hydrocarbons since the 2018 IEA, this condition was assessed as Non-compliant.	R8: Monitor the effectiveness of recent improvements in hydrocarbon and chemical storage in the pit top area against Australian Standards and take corrective action where required; progress improvements to the storage of waste oils in the workshop; and provide capacity in bunds to contain leaks and spills and prevent bund overflow.
Chemical and petroleum storage	Chemical and hydrocarbon products to be stored in banded areas in accordance with relevant Australian Standards					
C-5	SSD_5581 Sch 4-14	Independent Expert Review As part of any Independent Environmental Audit of the development (see condition 12 of schedule 6), the Applicant must commission an independent expert whose appointment has been endorsed by the Secretary, to carry out a review of the Groundwater Management Plan for the development, including the groundwater model. This review must include a: (a) review of all available monitoring data; (b) comparison of predicted and actual groundwater impacts; and	- Mr Noel Merrick, Senior Principal Hydrogeologist of Hydro Algorithmics, was proposed and endorsed by DPIE to undertake the independent review of the Groundwater Management Plan in accordance with the requirements of this condition. According to the document control table on the independent review report, the draft independent review (620.30368.00000-R01-v0.2) was prepared by SLR and checked by Noel Merrick. The final independent review (620.30368.00000-R01-v1.0) was prepared and checked by SLR. The independent review report includes: - Review of monitoring data (Section 3). - Comparison of predicted and actual groundwater impacts (Section 4). - Review of the groundwater management plan (Section 5).	R9: Confirm acceptability of the independent expert review process, to meet the requirements of SSD_5581 Schedule 4 Condition 12, with DPIE.		

ID #	Source	Requirement Summary	Finding	Recommendation #
		(c) review of the effectiveness of the Groundwater Management Plan for the development, including the groundwater model.	As Noel Merrick was endorsed by DPIE, and Noel Merrick conducted a check of the draft independent review report, this condition as assessed as Compliant. However, a recommendation has been made to confirm acceptability of the independent expert review process with DPIE.	
C-6	SSD_5581 Sch 6-1	Environmental Management Strategy Prior to carrying out any development under this consent, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (f) include: a clear plan depicting all the monitoring to be carried out in relation to the development.	- The Environmental Management Strategy (Sections 2.2.1 and 2.3) references the management plans that are required under SSD_5581. Management plans are not attached to the Strategy, however a diagram identifying the name of the management plans is included in Appendix 1. - As the Environmental Management Strategy was approved by DPIE in 2018, this condition was assessed as Compliant. However, a recommendation has been included as although approved management plans required by SSD_5581 are available on the Centennial Airly website and monitoring requirements are included within these plans, a clear plan depicting all of the monitoring to be carried out at Airly Mine is not included in the Environment Management Strategy.	R10: Consult with DPIE to confirm if the current approach is acceptable where the Environmental Management Strategy references management plans required by SSD_5581, and that these separate management plans include the monitoring requirements to meet SSD_5581 Schedule 4, Condition 1 (f).
C-7	EPL 12374 P1.3	LDPs are identified in EPL12374 for the purposes of the monitoring and/or the setting of limits for pollutants to water from the point.	At the V-notch weir and associated telemetry at LDP1, there was no sign identifying that the location was an EPL 12374 licenced discharge point.	R11: Clearly label EPL 12374 licensed discharge monitoring points.
C-8	EPL 12374 O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	Refer SSD_5581 Schedule4 Condition 12 (C-4).	Refer C-4 Recommendation 8
C-9	EPL 12374 M5.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	Contact phone numbers (+61 2 9266 2700) for the site were sighted on signs at the site entry and on the Centennial Airly website, however the website does not indicate the public complaints number (02 6359 2100).	R12: Clearly indicate the public complaints line on the Centennial Airly website.
C-10	ML1331 – 3(f)	The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must:	The Resources Regulator issued a new guideline in September 2020 that sets out the prescribed Form and Way required for an annual	R13: Engage with DPIE and the Resources Regulator to agree on the format of the Annual

ID #	Source	Requirement Summary	Finding	Recommendation #
		iii. be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at www.resources.nsw.gov.au/environment	rehabilitation report and forward program for small and large mines, in accordance with CI 8 of Schedule 8A to the Mining Regulation 2016. - Centennial Airly have reported on rehabilitation during the period of the IEA in Annual Reviews. The Annual Review has been prepared to meet the requirements of the <u>Annual Review Guideline 2015 (DPIE, 2015)</u>. - Many of the requirements in the Form and Way are not triggered by Airly Mine as there has been no rehabilitation undertaken during 2018, 2019 and 2020 as there is limited opportunity for progressive rehabilitation to occur at Airly Mine prior to the cessation of life-of-mine operations. The 2020 Annual Review also reports that there is no rehabilitation planned for 2021. A high level review of the 2020 Annual Review against the requirement of the Form and Way guideline for Annual Rehabilitation Reports by the auditors indicated that it has been generally prepared in accordance with the guideline with some minor exceptions.	Review on how to meet the requirements of the Annual Review Guideline (DPIE, 2015) and the Form and Way Annual Rehabilitation Report and Forward Program for Small and Large Mines (Resources Regulator, September 2020).
C-11	2018 IEA Section 6.4.2	Recommendation from 2018 IEA: <i>Given the involvement of the IEP as subsidence subject matter experts on the project, it is recommended that DPE and Airly consider directing the IEP to conduct Independent Third Party reviews of the subsidence findings in the Annual Review, in particular assessment of whether Airly are meeting the requirements for the performance measures as defined in the Development Consent.</i>	- Refer Section 2.5 of the main 2021 IEA report. - An Independent Expert Panel (IEP) has been established for the project and has been involved in the 2020 Subsidence Incident. - In feedback received during consultation for the 2021 IEA, BCD requested that this recommendation be re-considered. - Given the involvement of the IEP as subsidence subject matter experts during the period of the IEA, the 2020 subsidence incident and the request from BCD, the 2018 IEA recommendation remains relevant.	R14: DPIE and Centennial Airly to consider directing the IEP to conduct independent third party reviews of the subsidence findings in the Annual Review, in particular assessment of whether Airly are meeting the requirements for the performance measures as defined in the Development Consent.

2.4 Regulatory Action

The following regulatory action relating to SSD_5581 was reported during the period of the IEA:

- A warning letter (26 June 2020) was received from DPIE for not undertaking photogrammetry and LiDAR data capture survey during the extraction of MW2 and MW3 in 2019 due to supplier issues.
- Centennial Airly submitted incident notifications in relation to subsidence impacts of surface cracking which was attributed to SSD_5581 mining operations for surface crack (Fracture 01) to DPIE on 10 July 2020; and notification for surface crack (Fracture 02) to DPIE on 24 November 2020. An incident investigation report was provided to DPIE on 2 December 2020. Additional information was provided to DPIE and the IEP in September 2020. A letter 'Airly Coal Mine (SSD_5581) Incident Subsidence Impact of Surface Fractures' (11 December 2020), was received from DPIE. The letter advises:

"The Department notes the notification and detailed incident reports have been submitted in accordance with the requirements of Schedule 6, Condition 9 of the Consent."

Please be advised the Department has commenced an investigation into the incident and is carefully reviewing the details provided. The Department is investigating whether Centennial Coal has potentially breached Section 4.2(1)(b) of the Environmental Planning and Assessment Act 1979, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent.

As part of the investigation process, the Department may request further information regarding this matter."

The Incident Investigation Report was provided to the Resources Regulator, NPWS, Commonwealth Department of Agriculture, Water and Environment (Compliance Division) and CCC on 25 November 2020.

Further information regarding the subsidence incident is provided in Section 2.5.

2.5 Subsidence Incident

In 2020, regulators were notified of subsidence effects attributed to SSD_5581 mining operations, that exceeded EIS predictions and subsidence impacts (surface cracking). DPIE acknowledged receipt of incident details in December 2020 and advised Centennial Airly that an investigation had commenced as to whether Centennial Coal had potentially breached Section 4.2(1)(b) of the *Environmental Planning and Assessment Act 1979*, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent. At the time of preparing this IEA report, the outcome of the investigation had not been reported.

A high level overview of information on the context of subsidence performance measures, management, notification, investigation and adaptive management relating to the subsidence notifications is provided below.

EIS (Centennial Airly and Golder, 2014)

The Mt Airly Extension Project EIS (Centennial Airly & Golder, 2014) described that the proposed mining design specifically avoided impact where possible. For example, mine design included a range of mining zones with an associated range of extraction void widths to match extraction with natural and social sensitivity to minimise impacts (refer Figure 1 3); and to further avoid impacts to cliffs, Centennial Airly committed to a set back of 26.5 degree angle of draw from the tops of cliffs within the cliff line zone around all miniwall panels in the Panel and Pillar Mining Zone Extraction Plan (April 2019). This additional setback commitment was more conservative than the approved approach in the SSD_5581 Schedule 3 Condition 1 (which required a set back of 26.5 degree angle of draw from the tops of cliffs within the cliff line zone around at least the first four panels).

The EIS also described:

- Extensive and integrated monitoring to validate mine design. In addition to underground coal pillar deformation and stress condition monitoring and conventional subsidence monitoring (such as digital levelling, 3D total station, pegs in the ground and prisms on isolated rock features), subsidence monitoring focussed on sensitive features within the cliff line area using high resolution 3D photogrammetry and a network of prisms read by total station survey.
- Analysis of monitoring results and in response to higher than predicted subsidence results, triggering investigations and adaptive management in accordance with the approved Master Trigger Action Response Plan (Panel and Pillar Mining Zone Extraction Plan (April 2019)).

The Mt Airly Extension Project EIS (Centennial Airly & Golder, 2014) predicted “*vertical subsidence not exceeding 125 mm, strains up to 2 mm/m, tilts up to 3.0 mm/m and no surface fracturing*”.

SSD_5581

The development application for the Mt Airly Extension Project was approved by DPIE subject to conditions in SSD_5581 Schedule 2 to 6. SSD_5581 includes the following definitions:

- Subsidence effects - Deformation of the ground mass due to mining, including all mining induced ground movements, such as vertical and horizontal displacement, tilt, strain and curvature.
- Subsidence impacts - Physical changes to the ground and its surface caused by subsidence effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface depression or troughs.

SSD_5581 Schedule 3 Condition 2 states that “*the development does not cause any exceedances of the performance measures in Table 1 to the satisfaction of the Secretary*”. Table 1 details the subsidence impact performance measures for Land. Land areas are divided into separate sub categories with each area of land assigned a corresponding subsidence impact performance measure:

- Cliffs within a 26.5° angle of draw of the Airly underground mine workings: No greater subsidence impacts or environmental consequences than predicted in the EIS (i.e. occasional rock falls, displacement or dislodgement of boulders or slabs of less than 30m³, or fracturing, that do not impact Aboriginal heritage, EECs or public safety), that in total do not impact more than 2% of the total area of such cliffs.
- Pagodas within a 26.5° angle of draw of the Airly underground mine workings (other than pagodas affected by the New Hartley interaction zone): No greater subsidence impacts or environmental consequences than predicted in the EIS (i.e., occasional rock falls, displacement or dislodgement of boulders or slabs of less than 30m³, or fracturing, that do not impact Aboriginal heritage, EECs or public safety), that in total do not impact more than 2% of the total area of the pagodas.
- All other areas, including minor cliffs and steep slopes: No greater subsidence impacts or environmental consequences than predicted in the EIS.

Surface cracking (Fracture 01 and Fracture 02) that occurred on Mt Airly in 2020 is associated with mining in the Panel and Pillar Mining Zone in the area described in Table 1 as ‘*All other land not covered by a performance measure above*’. The subsidence impact performance measure for ‘*All other land not covered by a performance measure above*’ is ‘*No greater subsidence impacts or environmental consequences than predicted in the EIS.*’

Subsidence impacts predicted in the EIS include ‘*no surface fracturing*’.

Pillar and Partial Mining Zone Extraction Plan MW 02 - MW15

Airly Mine has undertaken a staged approach to Extraction Plans within approved mining zones. The Mt Airly Pillar and Partial Mining Zone Extraction Plan MW2 - MW15 (Centennial Airly, April 2019) describes baseline conditions and subsidence monitoring for natural and built / heritage features. Subsidence monitoring specified in the Pillar and Partial Mining Zone Extraction Plan includes:

- Six monthly surveys during mining and assessment against baseline conditions for:
 - Conventional subsidence monitoring:
 - Digital levelling

- 3D total station
 - Pegs in the ground
 - Prisms on isolated rock features
- GNSS units:
 - Continuous GPS position monitoring
 - Measurement of 3D position
- 3D Photogrammetry
 - 3D terrain model of the mountain
 - Developing this as a remote monitoring technique
- Targeted visual ground inspection with photographic records in active mining area if issues are identified from aerial work / underground monitoring as per TARP triggers.
- Underground coal pillar deformation and stress condition monitoring.
- Independent reviews of subsidence monitoring undertaken by Strata² in 2018, 2019 and 2020 with reports included as appendices in the 2018, 2019 and 2020 Annual Reviews.
- High-definition vertical photogrammetry, high resolution 3D photogrammetry and visual inspections conducted to monitor subsidence in 2018, 2019 and 2020.

For General Land Surface (excluding cliffs, minor cliffs, pagodas and steep slopes), the Master TARP (Pillar and Partial Mining Zone Extraction Plan Rev3 190419) states:

- Revised Predictions (current Extraction Plan): *"No adverse impact and no surface cracking"*.
- Performance Criterion: *"No greater subsidence impacts or environmental consequences than predicted in the EIS (i.e., **Negligible** impacts under cliffs (or tracks within 26.5 degrees of second workings), surface cracking is not expected, no impact on current land use)"*.
- 'Amber' response is triggered by- Ground movement monitoring and inspections of the integrated Subsidence Monitoring Program confirms ground movements are greater than maximum predictions of the EIS, as follows:
 - Vertical subsidence >125mm
 - Tensile strain 2mm/m or greater
 - Compressive strain 2mm/m or greater
 - Tilt 3mm/m or greater
- 'Red' response is triggered by- Ground movement monitoring and inspections of the integrated Subsidence Monitoring Program, and/or subsequent further investigations triggered in Condition Amber, confirms mining-induced impacts greater than approved by Consent SSD_5581.

The Master TARP (Pillar and Partial Mining Zone Extraction Plan Rev3 190419) also includes adaptive management that allows for modifications to be made to the mine design in the event that performance measures are not met.

Sequence of Events

A sequence of events relating to the 2020 subsidence incidents is provided in Table 2-5. This sequence was developed following review of the following documents, and presentations and information provided by Centennial Airly for the IEA:

- 3-2002 B LINE.xls, 3-2005-A LINE.xls, 3-2005 C LINE.xls and 3-2005-D-LINE.xls
- PPMZ EP MASTER TARP Rev3_190419
- 2019 Annual Review (Centennial Airly, 2020)
- 2019 Subsidence Review (AIR-012-Rev1) (Strata², 5 December 2019)
- 2020 Annual Review (Centennial Airly, 2021)
- 2020 Annual Subsidence Review (AIR-018-Rev0) (Strata², 20 February 2021)
- Incident Investigation Report (Centennial Airly, 2 December 2020)
- Subsidence Overview 2018 -2020 presentation (Centennial Airly, 11 February 2021)

A summary of consultation with regulatory agencies and stakeholders regarding the subsidence effects exceeding EIS predictions and subsidence impacts (surface cracking) is provided in Table 2-6.

Photographs of surface cracking (Fracture 01 and Fracture 02) observed during the IEA site inspection on 11 and 12 February 2021 are provided in Table 2-7.

Table 2-5: Sequence of Events

Date	Event	Comment
25 October 2019	Subsidence Effect: Maximum subsidence value of 95mm measured along B-survey line over Maingate 2 chain pillar in the Mt Airly Panel and Pillar Mining Zone.	- Following extraction of MW3 in the Panel and Pillar mining zone (PPMZ) on Mt Airly in 2019, subsidence approaching 50mm was measured along the B-Line survey over the Maingate 2 chain pillar in August and September 2019. In October 2019, subsidence at 95mm was measured on the B-Line survey, triggering TARP Level A Amber actions and responses. In accordance with the TARP, a review was undertaken (Annual Subsidence Review, Strata², 5 December 2019): - The 95mm subsidence value exceeds model predicted values of ≤ 60mm and ≤ 70mm (short-term and long-term respectively). Tilts and strains subsequent to Miniwall extraction were consistent with previous estimates. - Review of subsidence results and subsidence model undertaken by Strata² and the following model review outcome made <i>"It is considered likely that long-term maximum subsidence values of 100mm to 120mm will be experienced at the maximum depth of cover of 270m associated with Mt. Airly. It is possible, however, that the 125mm limit suggested by the EIS could be exceeded."</i> and <i>"The data indicates that the only Mt. Airly cliffs that might be at any appreciable risk are those within the PPMZ that would be directly undermined. There are no features in the MW4 to 6 area that are considered to be at risk"</i>.
December 2019	Subsidence Monitoring: No subsidence survey undertaken.	The December 2019 survey planned for the first quarter of MW4 panel was not able to be done due to the closure of the Mugii Murum-ban State Conservation Area as a result of bushfire threat from the Gaspers Mountain fire. The survey was combined with the survey conducted on 31 January 2020.
31 January 2020	Subsidence Effect: Subsidence greater than the EIS prediction of 125mm was measured on the B-survey line.	- The following initial actions were taken: - Initial visual inspection of the surface (week commencing 10 February 2020). - Presentation to DPIE and the Airly Mine Independent Expert Panel members (19 February 2020). - An independent review of subsidence data (MSEC, 1 May 2020) which was provided to DPIE and the Resources Regulator on 10 June 2020. - An update of the subsidence model (Strata², 18 May 2020) which was provided to DPIE and the Resources Regulator on 10 June 2020.
7 July 2020	Subsidence Impact: Surface Crack (Fracture 01) identified during visual surface inspections by Centennial Airly on Mt Airly.	- Surface Fracture 01 was reported in the Incident Investigation Report (December 2020) as approximately 55 metres long, 11 millimetres wide and 120 metres from the nearest cliff in the Cliff Zone of First Workings. - In accordance with the requirements of the PPMZ Extraction Plan TARP (Amber), a notification of the subsidence crack was provided to DPIE on 10 July 2020. - On 1 September 2020, the notification was again provided to DPIE with a request it be provided to the Airly Mine IEP for their information.

Date	Event	Comment
10 July 2020	Subsidence Impact: Surface Crack (Fracture 02) identified during visual surface inspections of Mt Airly.	Fracture 02 was reported in the Incident Investigation Report (December 2020) to be in two parts: an approximately 90 metre section and a 15 metre section to the east; less than 20 millimetres wide and approximately 70 metres from the nearest cliff in the Cliff Zone of First Workings.
September 2020	Subsidence and Surface crack (Fracture 01) monitoring: Presentation to DPIE and IEP.	Centennial Airly conducted a presentation with an update on subsidence monitoring results and the identified subsidence crack (Fracture 01) to DPIE and IEP in September 2020.
March to November 2020	Subsidence Effect: Vertical subsidence, tilt and tensile strain greater than the EIS predictions were measured in survey lines above MW4, MW5, MW6 and MW7.	- Following extraction of MW2 (August 2019) to MW7 (October 2020) in the Mt Airly Panel and Pillar mining zone, vertical subsidence was measured above 125 mm on each of the seven subsidence surveys undertaken between January 2020 and November 2020, with a maximum vertical subsidence of 612mm, maximum tilt of 8.7mm/m and maximum tensile strain of 3.2mm/m, measured on the B-Line survey over MW7 on 26 November 2020. The 2020 Annual Review (Table 23) includes the following 2020 subsidence results: - Maximum vertical subsidence (Smax) on the A, B, C and D survey lines above MW4, MW5, MW6 and MW7 exceeded the EIS prediction of 125mm. - Maximum tilt on the B survey line above MW5, MW6 and MW7 exceeded the EIS prediction of 3mm/m or greater (measured as average over 3 pegs). - Maximum tensile and compressive strain on the A and B survey lines above MW6 and MW7 exceeded the EIS prediction of 2mm/m or greater (measured as average over 3 pegs).
September to December 2020	Additional subsidence investigations.	- Additional investigations were taken: - Further review of subsidence data (Strata², 25 September 2020) - Updated modelling (UNSW, SCT and MSEC, 2020-2021)
11 February 2021	IEA opening meeting subsidence overview	- Centennial Airly advised MCW Environmental at the 11 February 2021 IEA Opening Meeting that: - Subsidence movement is still occurring over MW 2 but that it was 'not accelerating'. - Subsidence is concentrated at the deepest central part of the void. - Subsidence decreases significantly with reduced Depth of Cover. - Subsidence at the ends of the B-Line survey was <20mm width, with the western end of the B-Line survey 80m from the nearest SSD_5581 defined Cliff. - Photogrammetry data referenced to GNSS and terrestrial survey data for improved areal subsidence monitoring, confirmed that elevated subsidence is not near cliffs.
20 February 2021 (after the period of this IEA)	Subsidence impact: Cracks in the minor cliff and pagoda areas, east of the southern half of MW6 on Mt Airly	- The 2020 Annual Subsidence Review (AIR-018-Rev0) (Strata², 20 February 2021) states: <i>"No surface subsidence impacts were noted after the extraction of MW4, at an associated Smax value of 297mm. Surface subsidence impacts first became apparent after the extraction of MW5, at an Smax of 403mm. The first observed impact was a tensile crack just outside the western margin of the extraction area near GNSS 5; over time this crack has dilated from ~5mm to currently ~20mm, see Figure 6 and 7 of report AIR-018-Rev0. Although this sub-vertical crack persists through the adjacent pagodas, negligible damage (e.g. rock spalling) has resulted. Key features of the surface impacts to-date are as follows:</i> <i>i) No impacts are evident at the location of maximum subsidence of 612mm, even though this is also the location of maximum</i>

Date	Event	Comment
		compressive strain. The topography and vegetation completely mask potential impacts. ii) Cracks have also become evident in the minor cliff and pagoda areas, east of the southern half of MW6, see Figure 9 of report AIR-018-Rev0. Smax over MW6 ranges from around ~370mm in the northern plateau area (depth of ~270m) to 150-250mm in the south at depths of 210-230m, where the cracking is evident. Hill concludes that: ○ These isolated cracks have negligible impact on the stability of the associated rock structures, including caves up to 9m deep. ○ The surface features, especially the caves, are practically inaccessible and the minor cracking does not therefore represent a loss of public amenity. ○ The tensile cracks at the margins of the overall extraction area are attributed in part to large-scale overburden "plate" movements; these have occurred in cycles associated with the extraction of individual panels". The cracks referenced in ii) above were reported after the period of this IEA and consequently have not been included in the assessment of compliance by MCW Environmental for this 2021 IEA.

Table 2-6: Communications with Agencies and Stakeholders

Date	Type	Description
19 February 2020	• Letter from Centennial Airly to DPIE	• Notification that vertical subsidence was measured at greater than 125mm. • TARP Level Amber triggered.
19 February 2020	• Presentation to DPIE and IEP	• Update on performance of Airly Mine including elevated subsidence and observed cracking/fracturing.
17 June 2020	• Presentation to DPIE and IEP	• Update on performance of Airly Mine including elevated subsidence and observed cracking/fracturing.
10 July 2020	• Letter and Plan AM02257 from Centennial Airly to DPIE, Resources Regulator and NPWS	• Notification for Surface Crack (Fracture 01). • TARP Level Orange Level B triggered.
17 September 2020	• Presentation to DPIE and IEP	• Update on performance of Airly Mine including elevated subsidence and observed cracking/fracturing.
16 October 2020	• Letter from Centennial Airly to Resources Regulator (WHS Act Section 155 Notice NTCE0006637)	• Response to request for information on the observations of subsidence impacts including: ○ Dilation monitoring of Mt Airly Subsidence Crack 1 (adjacent to GNSS unit 5). ○ Photos and description of one additional surface crack at the inbye end of the starting edge of MW02 and MW03 panels (Mt Airly Subsidence Crack 2).
24 November 2020	• Letter from Centennial Airly to DPIE	• Notification for exceedance of subsidence performance measures. • TARP Level Red actions for Surface Crack (Fracture 01) and Surface Crack (Fracture 02).
25 November 2020	• Letter from Centennial Airly to EPBC monitoring email address, NPWS, Resources Regulator, NPWS and the Commonwealth Department of	• Notification of incident for exceeding subsidence performance measures, Surface Crack (Fracture 01) and Surface Crack (Fracture 02).

Date	Type	Description
	Agriculture, Water and Environment (DAWE)	
2 December 2020	Email from Centennial Airly to DPIE	- Detailed Incident Investigation Report including: - Immediate actions - Reporting - Independent review of subsidence data and surface site inspection - Updated subsidence model - Incident details - Additional investigations - Consultation - Status of adaptive management
2 December 2020	Email from Centennial Airly to DAWE	Detailed Incident Investigation Report for exceeding subsidence performance measures, Surface Crack (Fracture 01) and Surface Crack (Fracture 02).
11 December 2020	Letter from DPIE to Centennial Airly	- Acknowledgement of notification and detailed incident report of the subsidence impact of surface fractures greater than 125 mm - Advises that DPIE has commenced an investigation into whether Centennial Airly has <i>potentially breached s4.2(1)(b) of the EP&A Act 1979 by carrying out the development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent.</i>

Table 2-7: Surface Cracks (Fracture 01 and Fracture 02) Photographs

Surface Cracking (IEA Site Inspection, 11 February 2021)	
Photo 1: Surface crack (Fracture 01). 	Photo 2: Surface crack (Fracture 01). 
Photo 3: Surface crack (Fracture 02). 	Photo 4: Surface crack (Fracture 02). 

Adaptive Management

Following triggering of TARP Level Red actions for Surface Crack (Fracture 01) and Surface Crack (Fracture 02), the following adaptive management processes have been implemented by Centennial Airly to transition Airly Mine to subsidence less than EIS predictions and minimise further impacts:

- Increasing the length of pillars from MW5 onwards.
- Revising Extraction Plan for MW10-MW15 to transition Airly Mine back to subsidence less than EIS predictions, has been submitted to DPIE for approval. At the time of preparing this IEA, approval for this Extraction Plan had not been received.
- Increasing the width of pillars from MW10 onwards for Mt Airly.
- Updating modelling and consultation with IEP on revised mining layout.

Annual Reviews

The following non-compliances relating to SSD_5581 subsidence monitoring and measurement were reported in the 2018, 2019 and 2020 Annual Reviews by Centennial Airly:

- There were no incidents and/or non-compliances recorded for the 2018 Annual Review reporting period.
- Two non-compliances were reported in the 2019 Annual Review reporting period:
 - The first quarter MW4 conventional subsidence survey was delayed from December 2019 until January 2020 and combined with subsequent surveys, due to access restrictions in place for the Mugii Murumban State Conservation Area for several months due to safety concerns from nearby encroaching bushfires.
 - September 2019 photogrammetry and LiDAR data capture survey during extraction of MW2 and MW3, was unable to be completed due to supplier issues. Centennial Airly subsequently received a warning letter from DPIE on 26 June 2020 for this non-compliance.
- Two incident/non-compliances were reported in the 2020 Annual Review reporting period:
 - 7 July 2020 – a surface crack (Fracture 01) was identified during visual surface inspections 5m west of GNSS unit (120 metres from the nearest cliff in the Cliff Zone of First Workings).
 - 10 July 2020 – a surface crack (Fracture 02) was identified during visual surface inspections (70 metres from the nearest cliff in the Cliff Zone of First Workings).

The 2020 incident/ non-compliances were separately reported to the Resources Regulator and NPWS.

The 2020 Annual Review (Centennial Airly, March 2021), which references and includes a specialist 2020 Annual Subsidence Review (Strata², 20 February 2021), also states:

- Panel and Pillar Extraction mining was carried out only within consented Mt Airly Panel and Pillar Extraction Plan area of the mine.
- All conventional subsidence monitoring committed to in the Extraction Plan was conducted.
- All photogrammetry was completed as planned.
- No evidence of any rock falls within an angle of draw of 26.5° of workings.
- Subsidence exceeded predicted values.
- No evidence of pillar failure underground.
- Amber and red PPMZ EP TARP trigger values were exceeded during 2020 relating to surface cracking and subsidence exceedance.

Assessment of Compliance

Commitments to monitoring, investigation triggers and response as described in the EIS, and the subsequent Panel and Pillar Extraction Plan (Centennial Airly, 2019), were assessed during the IEA as having been generally met.

Subsidence effect greater than the EIS prediction for vertical subsidence (125mm), tilt (3mm/m) and strain (2mm/m) was measured in the Mt Airly subsidence surveys conducted in January, March, April, June, August, September, October and November 2020; and subsequent subsidence impacts were recorded (surface cracking - Fracture 01 and Fracture 02). The land where surface cracking was observed was classified under SSD_5581

Schedule 3 Condition 2 Table 1 as '*All other land not covered by a performance measure above*' with a corresponding subsidence impact performance measure '*No greater subsidence impacts or environmental consequences than predicted in the EIS*'. As the EIS predicted '*no surface fracturing*', surface cracking represents a non-compliance with SSD_5581 Schedule 3 Condition 2 Table 1 performance measure for '*All other land not covered by a performance measure above*'.

DPIE has written to Centennial Airly (11 December 2020) and advised "*The Department has commenced an investigation into the incident and is carefully reviewing the details provided. The Department is investigating whether Centennial Coal has potentially breached Section 4.2(1)(b) of the Environmental Planning and Assessment Act 1979, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent.*"

As the exceedance of SSD_5581 Schedule 3 Condition 2 performance measure is currently under investigation by DPIE, no further recommendations have been made by IEA auditors.

3 Photographs

Table 3-1: Photographs (IEA Site Inspection, 11 and 12 February 2021)

Photo #	Comment	Photo
Photo 5	Visual appearance of buildings and structures, blend with the surrounding landscape. (SSD_5581 Schedule 4 Condition 23).	
Photo 6	New roof for chemical storage area at pit top. (SSD_5581 Schedule 4 Condition 12 and EPL12374 Condition O1.1).	
Photo 7	Bunded diesel and lubricant tanks at pit top. (SSD_5581 Schedule 4 Condition 12 and EPL12374 Condition O1.1).	

Photo 8 New waste oil bunded tank at pit top.
(SSD_5581 Schedule 4 Condition 12 and
EPL12374 Condition O1.1).



Photo 9 Improved hard stand area and oil/water separator for vehicle wash bay at pit top.
(SSD_5581 Schedule 4 Condition 12 and
EPL12374 Condition O1.1).



Photo 10 Waste oil storage in workshop (SSD_5581
Schedule 4 Condition 12 and EPL12374
Condition O1.1)



Photo 11 Loss of containment of waste oils staining soil
at back of workshop.
(SSD_5581 Schedule 4 Conditions 10 and 12
and EPL12374 Conditions L1.1 and O1.1).



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Airly Mine

Photo 12 Reduced bund capacity from sediment load.
(SSD_5581 Schedule 4 Condition 12 and
EPL12374 Condition O1.1).



Photo 13 Sediment / coal fines in surface water drains at
pit top.
(SSD_5581 Schedule 4 Condition 10 and
EPL12374 Condition O1.1).



Photo 14 Product coal stockpile



Photo 15 Blackberries on grazing land on the track to
weather station (east of train loading area)
(SSD_5581 Schedule 4 Condition 15).



Photo 16 Weather station and HVAS
(SSD_5581 Schedule 4 Condition 8)



Photo 17 Pump at the Train Loader Dam and discharge point LDP2. Water is pumped from this dam to the Production Dam for re-use.
(SSD_5581 Schedule 4 Condition 12 and EPL12374 Condition O1.1).



Photo 18 Discharge Dam/Production Dam with adequate freeboard and presence of reeds in dam. Water is re-used back into the mining operation from this dam and pump house.
(SSD_5581 Schedule 4 Condition 10 and EPL12374 Condition O4.1).



Photo 19 V notch weir discharge point LDP1 at the Discharge Dam.
(SSD_5581 Schedule 4 Condition 10 and EPL12374 Conditions M1.1 and O4.1).



Photo 20 Coal collection traps at the Train Loader bin.



Photo 21 Loss of containment of minor volumes of coal and coal fines adjacent to Train Loader bin.
(SSD_5581 Schedule 4 Condition 10 and EPL12374 Condition O1.1).



Photo 22 2MW solar plant commissioned in 2020.
(SSD_5581 Schedule 4 Condition 6).



Photo 23 B-Line survey markers on Mt Airly



Photo 24 Stone cottage near Gap Creek.
(SSD_5581 Schedule 3 Condition 3)



Photo 25 Ecomax® effluent treatment system including
irrigation area.



4 Limitations of Report

MCW Environmental Consulting Pty Limited (MCW Environmental) has conducted this Independent Environmental Audit (IEA) and generated this report in accordance with the usual care and thoroughness of the consulting profession for the use of Centennial Airly Pty Ltd and only those third parties who have been authorised in writing by MCW Environmental to rely on this Report.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report. This IEA report did not assess any aspects relating to safety or soil or groundwater contamination at the site.

The IEA Report is prepared in accordance with the scope of work and for the purpose outlined in the MCW Environmental Proposal dated 26 November 2020 and the signed contract executed between MCW Environmental and Centennial Coal Company Ltd.

Where this IEA Report indicates that information has been provided to MCW Environmental by third parties, MCW Environmental has made no independent verification of this information except as expressly stated in the Report. MCW Environmental assumes no liability for any inaccuracies in or omissions to that information.

This IEA Report was prepared between February 2021 and May 2021 and is based on the conditions encountered and information reviewed at the time of the site visit on 11 and 12 February 2021. MCW Environmental disclaims responsibility for any changes that may have occurred after this time.

This IEA Report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This IEA Report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

Except as required by law, no third party may use or rely on this IEA Report unless otherwise agreed by MCW Environmental in writing. Where such agreement is provided, MCW Environmental will provide a letter of reliance to the agreed third party in the form required by MCW Environmental.

To the extent permitted by law, MCW Environmental expressly disclaims and excludes liability for any loss, damage, cost or expenses suffered by any third party relating to or resulting from the use of, or reliance on, any information contained in this IEA Report. MCW Environmental does not admit that any action, liability or claim may exist or be available to any third party.

Except as specifically stated in this section, MCW Environmental does not authorise the use of this IEA Report by any third party.

It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

Appendix A: Compliance Assessment

- **A1: Development Consent SSD_5581 (as modified) (DPIE)**
- **A2: Environment Protection Licence 12374 (Environment Protection Authority)**
- **A3: Mining Lease 1331 (Resources Regulator)**

Appendix A1:

- Development Consent SSD_5581 (as modified) (DPIE)

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
SCHEDULE 2 – ADMINISTRATIVE CONDITIONS					
OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT					
2-1	In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	- This 2021 IEA - Environmental Impact Statement, Airly Mine, Airly Mine Extension Project, SSD_5581 (Centennial Airly & Golder, 2014) - Airly Mine SSD_5581 MOD 1 Statement of Environmental Effects (Centennial Airly, 2018) - Airly Mine Extension Project SSD_5581 MOD 2 Statement of Environmental Effects (Centennial Airly, 2019) - Plan AM 02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - IEA opening meeting presentation (Centennial Airly, 2021) - Letter to DPIE: 2018 IEA Non-compliance Sch 2-2 (a) issue to be addressed (Centennial Airly, 7 August 2018) - Email to Centennial Airly: IEA Issues to be addressed (DPIE, 8 August 2018)	- There were no exceedances of EPL 12374 conditions during the period of the IEA. - The Pollution Incident Response Management Plan was not activated during the period of the IEA. Subsidence (refer Section 2.5 of the Main IEA Report) - Reasonable and feasible measures to prevent and/or minimise harm from subsidence to the environment during the period of the IEA were demonstrated by: - Undertaking mining in accordance with the approved mine design (Annual Reviews 2018 - 2020). The approved mine design specifically avoided impact where possible as proposed in the Mt Airly Extension Project EIS (Centennial Airly & Golder, 2014) and the Panel and Pillar Mining Zone Extraction Plan (Centennial Airly, 2019). For example, mine design included a range of mining zones with an associated range of extraction void widths to match extraction with natural and social sensitivity to minimise impacts (refer Figure 1 3); and to further avoid impacts to cliffs, Centennial Airly committed to a set back of 26.5 degree angle of draw from the tops of cliffs within the cliff line zone around all miniwall panels in the Panel and Pillar Mining Zone Extraction Plan (April 2019) and as shown in Plan AM 02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021).. This additional setback commitment was more conservative than the approved approach in the SSD_5581 Schedule 3 Condition 1 (which required a set back of 26.5 degree angle of draw from the tops of cliffs within the cliff line zone around at least the first four panels). - Undertaking extensive and integrated monitoring, as described in the EIS and subsequent Extraction Plans, to validate mine design. In addition to underground coal pillar deformation and stress condition monitoring and conventional subsidence monitoring (such as digital levelling, 3D total station, pegs in the ground and prisms on isolated rock features), subsidence monitoring focussed on sensitive features within the cliff line area using high resolution 3D photogrammetry and a network of prisms read by total station survey. - Analysing monitoring results and in response to higher than predicted subsidence results, triggering investigations and adaptive management in accordance with the approved Master Trigger Action Response Plan (Panel and Pillar Mining Zone Extraction Plan (April 2019)). - Following triggering of TARP actions for Surface Crack (Fracture 01) and Surface Crack (Fracture 02), the following adaptive management processes were implemented to transition Airly Mine to subsidence less than EIS predictions and minimise further impacts: - Increasing the length of pillars from MW5 onwards. - Revising Extraction Plan for MW10-MW15 to transition Airly Mine back to subsidence less than EIS predictions, has been submitted to DPIE for approval. At the time of preparing this IEA, approval for this Extraction Plan had not been received. - Increasing the width of pillars from MW10 onwards for Mt Airly. - Updating modelling and consultation with IEP on revised mining layout. - The Mt Airly Extension Project EIS (Centennial Airly & Golder, 2014) predicted “vertical subsidence not exceeding 125 mm, strains up to 2 mm/m, tilts up to 3.0 mm/m and no surface fracturing”. - Despite mining and monitoring having been undertaken in accordance with the approved EIS and subsequent Extraction Plans, subsidence effect was measured in 2020 subsidence surveys that exceeded EIS predictions for vertical subsidence (125mm predicted, maximum 612mm measured), tilt (3mm/m predicted, maximum 8.7mm/m measured,) and strain (2mm/m predicted, maximum 3.2 mm/m measured); and subsidence impacts were recorded (surface cracking - Fracture 01 and Fracture 02). Surface cracking was assessed in this IEA as a non-compliance with SSD_5581 Schedule 3 Condition 2 (refer NC-3 in this table below). - Monitoring, investigation triggers and response described in the EIS (Centennial Airly & Golder, 2014), and the subsequent Panel and Pillar Extraction Plan (Centennial Airly, 2019), were assessed during the IEA as having been generally met. - DPIE has commenced an investigation into whether Centennial Coal has potentially breached Section 4.2(1)(b) of the Environmental Planning and Assessment Act 1979, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of SSD_5581 Schedule 3, Condition 2. MCW Environmental has assumed that this investigation will include an assessment of environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of surface cracking; and consequently, whether harm to the environment has been minimised. Although there has been no exceedance of EPL 12374 conditions and no notifications of environmental harm were reported by Centennial Airly, as an assessment of	Not verified (NV-1 pending completion of the subsidence impact investigation by DPIE)	Refer SSD_5581 Schedule 3 Condition 2.

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
			environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of surface cracking has not been undertaken, and given an ongoing investigation by DPIE, compliance with this condition has not been assessed and has been nominated as 'Not verified'.		
TERMS OF CONSENT					
2-2	The Applicant must carry out the development (a) generally in accordance with the EIS and the Mining schedule (see Figure 3 in Appendix 2); and	- This 2021 IEA - Environmental Impact Statement, Airly Mine, Airly Mine Extension Project, SSD_5581 (Centennial Airly & Golder, 2014) - Airly Mine SSD_5581 MOD 1 Statement of Environmental Effects (Centennial Airly, 2018) - Airly Mine Extension Project SSD_5581 MOD 2 Statement of Environmental Effects (Centennial Airly, 2019) - Letter to DPIE – Revision of strategies, plans and programs (Centennial Coal, 12 September 2018) - Plan AM 02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021) - MOD 3 Extraction Plan Variation (Centennial Airly, May 2016) 2019 Annual Review (Centennial Airly, 2020) - Letter to DPIE: 2018 IEA Non-compliance Sch 2-2 (a) issue to be addressed (Centennial Airly, 7 August 2018) - Email to Centennial Airly: IEA Issues to be addressed (DPIE, 8 August 2018)	(a): - Although Centennial Airly have generally carried out the development in accordance with the EIS, subsidence effect was measured in 2020 subsidence surveys that exceeded EIS predictions for vertical subsidence, tilt and strain; and surface cracking. - Surface cracking was assessed in this IEA as a non-compliance with SSD_5581 Schedule 3 Condition 2 (refer NC-3 in this table below) for exceeding the Table 1 subsidence impact performance measure '<i>No greater subsidence impacts or environmental consequences than predicted in the EIS</i>'. - Further discussion on subsidence including EIS subsidence predictions, monitoring, investigation triggers and responses is provided in Section 2.5 of this IEA report and NV-1 in this table above. - An assessment of the environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of surface cracking has not been undertaken, and given an ongoing investigation by DPIE, compliance with this condition has not been assessed and has been nominated as 'Not verified'. - Based on a review of mining operations as reported in Plan AM 02503 as presented in the IEA Opening Meeting, Centennial Airly has undertaken mining in accordance with the Mining Schedule (SSD_5581 Figure 3). As identified in the previous 2018 IEA, some workings have been undertaken north west of Mt Genowlan in area that appears to be outside of the area scheduled for Years 1-4 in SSD_5581 Figure 3. Centennial Airly clarified with DPIE (August 2018) that SSD_5581 does not apply to these workings as they were undertaken under the MOD 3 Extraction Plan Variation (2016). An email response from DPIE (August 2018) advised that no further action was planned at this time.	Non-compliant (NV-2: Exceedance of EIS subsidence effect predictions and subsidence impact performance measure for surface fracturing).	Refer SSD_5581 Schedule 3 Condition 2.
	(b) in accordance with the IPRP's Report and the conditions of this consent. <i>Note: The layout of the development is shown in Appendices 2, 3 and 10</i>	- Report of the Independent Review Panel Established to Review and Report on Accuracy and Reliability of Mine Subsidence Impacts on Sensitive Features Across the Airly Mine Extension Project Application Area (Ken Mills, SCT; Ismet Canbulat, UNSW; Don Kay, MSEC; 1 July 2016) - Email to MCW Environmental 'Evidence of Consultation' (Centennial Airly, 26 March 2021). 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	b) - The Independent Review Panel Report, dated 1 July 2016, reviewed and reported on the accuracy and reliability of mine subsidence impacts on sensitive features across the Airly Mine Extension Project Application Area. - Under Definitions in SSD_5581, the IPRP is defined as the IEP (Independent Expert Panel). - In email correspondence to MCW Environmental on 26 March 2021 regarding a 2014 EIS SOC on consultation with relevant geotechnical expertise on the Strata Failure Management Plan, Centennial Airly advised that "<i>Don Kay (MSEC) peer reviewed the original work done by Golder Associates. Don then formed part of the Independent Review Panel along with Ken Mills (SCT) and Ismet Canbalat (UNSW) that reviewed the geotechnical aspects. Ken Mills and Ismet Canbulat currently form the Independent Expert Panel for SSD5581.</i>" - In August 2018 new conditions were included in SSD 5581 MOD 1 including restrictions on mining replacing 30m cliff protection zones (Schedule 3, Condition 1); and requirements for Extraction Plans to undertake additional consultation with the IEP (Schedule 3, Condition 7). - Centennial Airly commissioned an annual review of subsidence monitoring by geological consultants, Strata². Copies of these reviews are included as an appendix to the Annual Review. - MCW Environmental are not experts in subsidence. This IEA has assessed compliance against Development Consent SSD_5581 (as modified) and has not assessed compliance with the 2016 IPRP's Report.		
2-3	If there is any inconsistency between the documents in condition 2 (a) above, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.	This 2021 IEA	This IEA assessed compliance with SSD_5581, EPL 12374 and ML 1331 and no inconsistencies were reported by Centennial Airly or identified through the IEA process	Not triggered	
2-4	The Applicant must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this consent (including any stages of these documents); (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this consent; and (c) the implementation of any actions or measures contained in these documents.	- Approved management plans are available on Centennial Airly website. - Email to DPIE on feedback on Airly Mine (MCW Environmental, February 2021)	- The Environmental Coordinator reported that DPIE had not issued specific requirements in relation to this condition, during the period of the IEA. - Consultation with DPIE was undertaken as part of this IEA. There were no outstanding requirements identified arising from DPIE's assessment of strategies, plans, programs, reviews, audits, reports or correspondence; reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this consent; or corresponding actions or measures contained in these documents. A summary of issues raised by DPIE and responses are provided in Appendix F.	Not triggered	

LIMITS ON CONSENT

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation												
2-5	Mining Operations The Applicant may carry out mining operations on the site for a period of 20 years from the date of commencement. <i>Note: Under this consent, the Applicant is required to rehabilitate the site and perform additional undertakings to the satisfaction of the Secretary and the Resources Regulator. Consequently, this consent will continue to apply in all other respects other than the right to conduct mining operations until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily.</i>	MOP Amendment A (Centennial Airly, 2020)	The date of the Airly Mine Extension Project commencement was 31 January 2017. Mining operations under this consent may be carried out up until 31 January 2037.	Compliant													
2-6	Coal Extraction The Applicant must not extract more than 1.8million tonnes of ROM coal from the site in any calendar year.	- Airly-Scheduling Report – 1 Jan 2019 to 31 Dec 2019.xlsm - Airly-Scheduling Report – 1 Jan 2020 to 31 Dec 2020.xlsm 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - CCC Presentation August 2020	Production tonnages during the period of the IEA were reported in 2018, 2019 and 2020 Annual Reviews and in rail scheduling reports were within the limits specified by this Condition. <table><tr><th>Calendar year</th><th>Limit</th><th>Tonnes of ROM coal</th></tr><tr><td>2018</td><td>1,800,000</td><td>906,308</td></tr><tr><td>2019</td><td>1,800,000</td><td>1,177,386</td></tr><tr><td>2020</td><td>1,800,000</td><td>1,476,209</td></tr></table>	Calendar year	Limit	Tonnes of ROM coal	2018	1,800,000	906,308	2019	1,800,000	1,177,386	2020	1,800,000	1,476,209	Compliant	
Calendar year	Limit	Tonnes of ROM coal															
2018	1,800,000	906,308															
2019	1,800,000	1,177,386															
2020	1,800,000	1,476,209															
2-7	Hours of Operation The Applicant may undertake mining operations 24 hours a day, 7 days a week.	2018 -2021 ECD 2018 -2021 Complaints Register	Airly operates when required 24 hours a day, 7 days a week. No noise complaints from operations were recorded.	Compliant													
2-8	Rail Movements The Applicant must ensure that: (a) all product coal is transported from the site by rail; (b) no more than an average of 2 laden trains leave the site each day over any calendar year; and (c) no more than 5 laden trains leave the site on any day. <i>Note: The rail transfer route for the water train is shown in Figure 13 in Appendix 12.</i>	- Spreadsheet – APP153109 Train Schedule 2018-2021 - Work Order with Train Loading User Input Procedure including rail schedule (30 October 2020) - Airly-Scheduling Report – 1 Jan 2019 to 31 Dec 2019.xlsm - Airly-Scheduling Report – 1 Jan 2020 to 31 Dec 2020.xlsm - EPL 12374 Monthly Environmental Monitoring Report (Centennial Airly, Jan - Dec 2018)	(a) The Annual Reviews and Environmental Coordinator reported that all product coal is transported from site by rail. (b) A review of the 2019 and 2020 Airly Scheduling report and EPL Environmental Monitoring Reports for 2018 identified that less than 2 laden trains left the site each day during 2018, 2019 and 2020. (c) A review of the 2019 and 2020 Airly Scheduling report and EPL Environmental Monitoring Reports for 2018 identified that less than 5 laden trains left the site on any day during 2018 - 2021. - Train coal loading facilities were observed on site. There were no truck coal loading facilities or coal haulage trucks observed during the site inspection.	Compliant													
NOTIFICATION OF COMMENCEMENT																	
2-9	Prior to commencing any development under this consent, the Applicant must notify the Department in writing of the date on which it will commence the development permitted under this consent.	Letter to DPIE: Notification of commencement (Centennial Airly, 22 December 2016)	This condition was assessed as Compliant in the previous IEA	Not triggered													
SURRENDER OF EXISTING DEVELOPMENT CONSENTS																	
2-10	Within 12 months of the date of commencement, unless the Secretary agrees otherwise, the Applicant must surrender the existing Development Consent DA162/91 (as modified) in accordance with clause 97(1) of the EP&A Regulation, to the satisfaction of the Secretary. Following the commencement of development under this consent, the conditions of this consent must prevail to the extent of any inconsistency with the conditions of those consents and approvals. <i>Note: This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrender of a consent should not be understood as implying that works legally constructed under a valid consent can no longer be legally maintained or used.</i>	- Letter to DPIE, Notice of surrender of Development Consent DA162/91 (as Modified) for Airly Mine (Centennial Airly, 31 January 2018) - Letter to Centennial Airly: Surrender of Development Consent DA 162/91 (DPIE, 10 December 2018) - Airly Development Consent 162-91 Surrender - Land Ownership Table (Centennial Airly, 12 January 2018)	DPIE accepted the surrender of Development Consent DA 162/91 in a letter dated 10 December 2018.	Compliant													
STRUCTURAL ADEQUACY																	
2-11	The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.	2018 Structural Integrity Assessment of Surface Structures (Bureau Veritas, July 2018) 2019 Structural Integrity Assessment of Surface Structures (Bureau Veritas, December 2019)	- The Environment and Community Coordinator advised that no new infrastructure had been constructed during the period of the IEA. - No new infrastructure was observed during the site inspection. - Structural integrity audits are completed by Bureau Veritas on an annual basis. The 2020 report found “that the plant inspected can generally be classed as a low to moderate risk in its current	Not triggered													

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	<i>Note: Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates (where applicable) for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.</i>	2020 Structural Integrity Assessment of Surface Structures (Bureau Veritas, November 2020)	<i>condition; however some plant currently pose a high risk to personnel safety generally where lifting equipment, guarding and access-ways do not comply with current Australian Standards".</i> Structures that were the subject of these audits were existing and constructed prior to the period of the IEA.		
DEMOLITION					
2-12	The Applicant must ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.		The Environmental Coordinator advised that no infrastructure had been demolished during the period of the IEA.	Not triggered	
PROTECTION OF PUBLIC INFRASTRUCTURE					
2-13	Unless the Applicant and the applicable authority agree otherwise, the Applicant must: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development. <i>Note: This condition does not apply to damage to roads caused as a result of general road usage.</i>	- Procedure - AIR-TL-7066 Authority to Mine Permit 206 and 207 Panel Authority to Mine Permit (15 October 2018) – not signed by EC 400 and 400A Authority to Mine Permit (20 June 2019) - MW7 Authority to Mine Permit (2 March 2020) - MW8 Authority to Mine Permit (19 May 2020)	- The Environment and Community Coordinator advised that during the period of the IEA no public infrastructure had been damaged, or needed to be relocated, as a result of the development. - Airly reportedly has an agreement with National Parks and Wildlife Service (NPWS) (not sighted) whereby NPWS maintain public access trails within Mugii Murum-Ban State Conservation Area (which Airly used for surveying and environmental monitoring during the period of the IEA) and Airly pay for those maintenance works. - Refer SSD_5581 Schedule 3 Condition 3 compliance assessment (below in this table) which states that following agency consultation for this IEA, BCD advised “NPWS should again be consulted regarding MMBSCA access and trail management” as part of ongoing management of the area; and a recommendation (R3) has been included in this IEA to consult with NPWS regarding access and trail management. - Prior to the commencement of a new area of underground mining, internal procedure AIR-TL-7066 requires an Authority to Mine Permit to be completed. This permit requires signoff from various mine departments and managers including the Environment Coordinator, and a specific question in the permit is “what infrastructure overlies the proposed panel?” and if there is “are there any special management requirements”.	Compliant	
OPERATION OF PLANT AND EQUIPMENT					
2-14	The Applicant must ensure that all plant and equipment used on site, or to monitor the performance of the development is:	- IEA site inspection - Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021 6-monthly automatic weather station verification certificate Airly Homestead (ALS, 25 October 2018) - Tipping Bucket Rain Gauge Calibration Certificate (ALS, 14 March 2018) - Water level sensor verification certificate (ALS, 20 February 2019, AMGAPCRK on 30 September 2019 and AMLDP1 on 20 August 2020) - Airly Electrical Control Plan AIR-MP-0101 v9 (Centennial Airly, 2019) - Airly Mechanical Control Plan AIR-MP-0101 v7 (Centennial Airly, 2019) - Surface Induction AIR-TA-6039 and Assessor Guide - Visitor Induction AIR-TA-6016 and Assessor Guide - Compliance Database (screenshot with examples of actions for Environment and Community Coordinator to comply with SSD_5581) - AS1940 Compliance Assessment Report (Viva Energy Australia, 23 December 2019) - Hazardous Spills AIR-TA-6130 Assessment Tool - Assessment of quantity of gas bottle storage (AS 4332) (Centennial Airly, 17 December 2019) - Training and Competency Management Plan including Training Needs Assessment	Evidence that plant and equipment at the site were (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner; during the period of the IEA included: - Plant and equipment generally are registered within the PULSE Mining System. Through PULSE the plant and equipment are subject to a planned maintenance program in order to reduce the potential for failures that may, amongst other things, lead to environmental incidents. PULSE automatically generates work orders to undertake planned maintenance activities. The work order generally includes a specific standard work procedure to carry out the action. The auditors sighted a number of inspection and maintenance work orders that had been implemented during the period of the IEA, a selection of those sighted are referenced in the Evidence Source column. - Environmental monitoring equipment including discharge water flow meters, v-notch weir telemetry, dust gauges and meteorological station are operated by ALS and are subject to ALS internal QA testing and ongoing maintenance requirements. ALS is a NATA accredited analytical service provider (Accreditation No: 825). Evidence of equipment calibration was provided. - Spill kits were present and were observed to have cable tie “seals aiding in maintaining the kit in a useable condition. - Training and competence is assessed. Airly provided examples of induction training and assessment packages and standard work procedures for the equipment and tasks on site. - The mandatory site induction for employees, contractors and visitors includes environmental awareness and obligations to undertake works and to protect the environment. The Surface Induction includes: - Key environmental risks - Storage of oils and fuel - Waste management - Spill response: assess, control, contain and repair - Contact by residents. - Hazardous Materials (specific training package) was available. - A number of improvements to prevent of loss of containment in the pit top area since the 2018 IEA had been made including: - Roof over hydrocarbon storage area and concrete bund that drains to the sump near the diesel tank. - Improved diesel refuelling area. - Installed new wash down bay and oil/water separator. - Additional hardstand and dirty water collection near the train loading bay. - The pit top area was generally maintained in a good condition although there was evidence of overflow from the oil storage bund in the Workshop. Refer SSD_5581_Schedule 4 Condition 12. - Improved onsite water management system to help prevent unlicensed discharge events. The upgrades included the installation of level sensors on dams and pump automation works. - The effluent treatment system and corresponding irrigation area were observed during the site inspection to be in good condition and no odour was detected.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
			- There were no complaints or incidents generated by operation of maintenance of plant and equipment. - Based on the documentation reviewed and the plant and equipment observed during the site inspection, the requirements of this condition were assessed as being met.		
COMMUNITY ENHANCEMENT					
2-15	From the date of commencement, the Applicant must pay a community contribution to Council of \$0.03 per saleable tonne of coal produced at Airly mine capped at a maximum payment of \$200,000 in total from the Springvale, Angus Place and Airly mines (ie for all 3 mines collectively). The community contribution is to be paid on an annual basis to Council and no later than 31 March each year (for the preceding calendar year). The contribution must be used for long-term community activities and projects to be agreed by both the Applicant and Council and must be reported publicly.	- Community Contribution Procedure (Centennial Coal) - Email to Lithgow City Council advising community contribution for 2020 (Centennial Airly, 4 February 2021) - Invoice to Centennial Airly INV171878 (Lithgow City Council, 20 March 2019) - Invoice to Centennial Airly INV172478 (Lithgow City Council, 29 March 2020) - Remittance Advice 17775 (Lithgow City Council, 28 February 2020) - Remittance Advice 16636 (Lithgow City Council, 20 March 2019)	- Centennial Airly provided Lithgow City Council a request for an invoice for \$44,286.27 (the amount calculated for 2020 community contributions in accordance with this condition). The amount calculated is consistent with the reported 2020 annual production of 1,476,209 tonnes ROM coal (= saleable product coal as Centennial Airly has no washery) multiplied by \$0.03 per tonne. - Lithgow City Council invoices and remittance advice were sighted for \$35,321.58 and \$27,189.24 for Lithgow City Council Miscellaneous Projects Community Contribution for 2019 and 2018, respectively. - Lithgow Council advised Centennial Airly in 2018 on how the funds were used.	Compliant	
SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS – UNDERGROUND MINING					
SUBSIDENCE					
Subsidence Impact Assessment Criteria					
3-1	Restrictions on Mining The Applicant must not carry out any second workings: a) in the Panel and Pillar Extraction Zone within an angle of draw of 26.5 degrees of the crest of any cliffs identified in the Cliff Line Zone of First Workings before at least four adjacent extraction panels in the Panel and Pillar Zone beneath Mount Airly have been completed; b) in the Partial Pillar Extraction Zone within an angle of draw of 26.5 degrees of the toe of any cliffs identified in the Cliff Line Zone of First Workings before it has completed the Trial Mining Area in Panels 206 and 207 as shown in Appendix 11; and c) within an angle of draw of 26.5 degrees plus 50 metres of the limit of the New Hartley Shale Mine workings. <i>Note: For more detail on the zones referred to in this condition, see the Figure 2 in Appendix 3</i>	- CCC minutes (October 2020): - CCC minutes (August 2020): 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Airly Mine Extraction Plan MOD 3 DA162/091 for pillar splitting and quartering within the Extraction Plan area in ML1331 g MOD3 (DA162/91) (Centennial Airly, May 2016) 2018 IEA (MCW Environmental, 2018) - Panel & Pillar Mining Zone Extraction Plan – Master TARP - Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2018) - Mt Airly Panel & Pillar Mining Zone Extraction Plan (Centennial Airly, April 2019) - Subsidence Monitoring Program: Mt Airly Panel & Pillar Mining Zone Extraction Plan (EP-SMP) (Centennial Airly, April 2019) - Letter to Centennial Airly Extraction Plan for Panel and Pillar Mining MW02 - MW05 (DPIE, 31 May 2019) - Letter to Centennial Airly Extraction Plan for Panel and Pillar Mining MW02 – MW15 (DPIE, 25 June 2019) - Mt Airly Panel & Pillar Mining Zone Extraction Plan – Modification 1 (MW08 - MW09) (Centennial Airly, December 2020) - Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2018) - Plan AM02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021)	- Centennial Airly is pursuing staged approval of mining with the SSD_5581 approved Mining Zones for Airly Mine. - Airly Mine has five approved mining zones under Development Consent SSD_5581, which are illustrated on Figure 2 of SD_5581 and described as: - Cliff line zone and zone of first workings. - Panel and pillar mining zone. - Partial pillar extraction zone. - Shallow zone. - New Hartley shale mine potential intersection zone. - These five zones provide for different types of mining in specific areas to protect surface features. After the first Extraction Plan under SSD_5581 was approved for mining in the Cliff Line zone of first workings in 2017, Airly Mine has been undertaking a staged approach to Extraction Plans within approved mining zones. - The Extraction Plan for Splitting and Quartering within ML1331 (prepared in 2017 and revised in 2018) was relevant to mine development (first workings) and splitting and quartering (second workings) in parts of the Shallow Mining Zone up to 100m Depth of Cover and the Partial Pillar Mining Zone up to 160m Depth of Cove resulting in predicted vertical subsidence of up to 65mm. In August 2018, the Splitting and Quartering Extraction Plan received conditional approval for splitting and quartering in a trial area in 206 and 207 panels, with review required prior to progressing to other parts of the approved extraction area. Following consultation with DPIE, IEP and Resources Regulator, mine design was revised to provide long term stable pillars and Extraction Plan conditional approval was issued by DPIE on 7 May 2019, for mining within the remainder of the Splitting and Quartering Extraction Plan area within ML 1331, upon satisfactory completion of notification requirements. The Splitting and Quartering Extraction Plan that was approved in 2019, replaced the Pillar Lifting methods proposed within the Partial Pillar Mining Zone up to 160m Depth of Cover resulting in predicted vertical subsidence of up to 65 mm as approved; with the lower subsidence method of splitting and quartering only with no pillar lifting proposed and limited to 110m depth of cover and worst case vertical subsidence of <30mm. - A Panel and Pillar Mining Zone (also referred to as Miniwall (MW)) Extraction Plan for MW 02 – 05, was approved by DPIE in May 2019. SSD_5581 does not define 'Miniwall' however the Panel and Pillar Extraction Plan (Centennial Airly, April 2019) states that Miniwall mining differs from long wall mining in that panel void widths supporting the overlying overburden are narrower and the final chain pillars remaining following panel extraction are designed to provide long term stable support to the surface with negligible ground movement, low angle of draw, and no expected surface cracking. A Panel and Pillar Mining Zone Extraction Plan for MW 02 – 15, was approved by DPIE in June 2019. Further to subsidence effects exceeding EIS predictions and subsidence impact (surface cracking) in 2020, a modification to the Mt Airly Pillar and Partial Extraction Plan focussing on the southern end of MW08 and MW09, was completed in December 2020 and had not been approved at the time of preparing this IEA report. - In summary: - Under SSD_5581: - Airly prepared an Airly Mine Cliff Line Zone of First Workings Extraction Plan (ML1331) (EP) in September 2017. The 2018 IEA auditors sighted a letter from DPIE approving this Extraction Plan in October 2017. There has been no revisions	Compliant	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
			to the Cliff Line Zone of First Workings Extraction Plan during the period of this IEA. ▪ A Splitting and Quartering Extraction Plan for ML 1331 was approved by DPIE in 2017 and revised in 2018 (trial area for panels 206 and 207) and 2019 (following review of trial area results approval was provided for mining within the remainder of the Splitting and Quartering Extraction Plan area within ML 1331). ▪ Panel and Pillar Mining Zone Extraction Plans were approved by DPIE for MW02 - MW05 in April 2019, and for MW02 - MW15 in June 2019. In response to subsidence effects exceeding EIS predictions and subsidence impact (surface cracking) in 2020, a modification to the 2019 Mt Airly Pillar and Partial Extraction Plan focussing on the southern end of MW08 and MW09, was completed in December 2020 and was not approved at the time of preparing this IEA report. ○ Some second workings in the form of splitting and quartering were undertaken under the former approved Extraction Plan for splitting and quartering under Modification 3 (as varied) for the former Development Consent DA162/91. Extraction Plans approved under the former Development Consent DA 162/91 (as modified), for development and splitting and quartering are: ▪ Airly MOD3 Extraction Plan (2015) ▪ Airly MOD3 EP Variation Extraction Plan (2016) • Descriptions of second workings undertaken during the period of the IEA provided in the 2018, 2019 and 2020 Annual Reviews, CCC presentations in 2020, a high level review of Plan AM02503 (dated 10 February 2021) and the presentation provided by Centennial Airly during the site inspection; identified that second workings occurred only within areas of approved Extraction Plans. Consequently, this condition has been assessed as Compliant. • The 2018 IEA reported that second workings in the form of pillar splitting and quartering were undertaken in 400 A and 400 panels in 2017, under Extraction Plan MOD 3 Variation which was approved prior to the current Development Consent SSD_5581. The IEA included an Opportunity for Improvement to confirm with DPE that second workings under the MOD 3 EP Variation are not applicable under SSD_5581 Sch 3-1. Centennial Airly informed DPIE in writing (August 2018) that SSD_5581 does not apply to these workings as they were undertaken under the MOD 3 Extraction Plan Variation (2016). In response, an email from DPIE (August 2018) advised that no further action was planned at this time.		
3-2	Performance Measures – Natural and Heritage Features, etc The Applicant must ensure that the development does not cause any exceedances of the performance measures in Table 1 to the satisfaction of the Secretary. Table 1: Subsidence Impact Performance Measures – Natural and Heritage Features, etc	• 2018 Annual Review (Centennial Airly, 2019) • 2019 Annual Review (Centennial Airly, 2020) • 2020 Annual Review (Centennial Airly, 2021) • 2021 IEA Opening Meeting presentation (Centennial Airly, 11 February 2021) • Airly Mine Water Monitoring 2019 Annual Report (GHD, March 2020) • Airly Mine Water Monitoring 2018 Annual Report (GHD, February 2019) • Plan AM02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021) • Plan 3 AM02130 Airly Consent Mining Zones Workings 2017, 2018 and 2019 30/12/2019 Mine Workings (Centennial Airly, 19 March 2020) • Panel & Pillar Mining Zone Extraction Plan – Master TARP Rev3 (190419) • Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2018) • Subsidence Monitoring Program: Splitting and Quartering Extraction Plan (ML1331) (EP-SMP) (Centennial Airly, May 2018) • 121 and 200 Panel Subsidence Monitoring Outcomes (Strata², March 2019) • Stress Change Monitoring Results in 207 Panel at Airly Mine (Strata 2, December 2018) • 121 and 200 Panel Subsidence Monitoring Outcomes (Strata², May 2019) • 2018 Annual Subsidence Review (Strata², March 2019) • 2019 Annual Subsidence Review (Strata², December 2019)	• Refer Section 2.5 of the Main IEA Report.		

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation
			2020 Annual Subsidence Review (Strata², 20 February 2021) - Incident Investigation Report (Centennial Airly, 2 December 2020) - Letter to Centennial Airly Warning Letter failure to complete photogrammetry and LiDAR capture survey in September 2019 (DPIE, 26 June 2020) - EIS Airly Mine Extension Project (Golders, 2014)			
	Water Resources	Performance Measure				
	Gap and Genowlan Creeks	- Wherever depth of cover is < 40 m, no first or second workings within 20 m of the edge of the creek bed, measured horizontally in the seam - Negligible environmental consequences to water quality and to bed and bank stability - No greater environmental consequences than predicted in the EIS to water flows (including base flow)	- Water Management Plan (Centennial Airly, September 2018) 2019 Aquatic Ecology Monitoring Report (GHD, March 2020) - Airly Mine environmental monitoring 2020 – 2020 watercourse stability monitoring report (GHD, February 2021) - Airly aquatic ecology monitoring Annual Report 2018 (GHD, March 2019) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- AM02130 (Plan 3) Mining Zones with 2018 and 2019 Mine Workings (within the 2018 and 2019 Annual Reviews show a 40m wide zone along Gap Creek as being excluded from the mining zone. This was also evident in plan AM02503 Extraction Workings and Approved Areas 2018 -2021 which shows current mine workings and depth of cover isopaches within the Gap Creek catchment area. AM02568 (Plan 3) shows Mining Zones (within the 2020 Annual Review). - The 2018 and 2019 Annual Reviews report, and Plan AM02503 (dated 10 February 2021) indicates, that all workings have been mined to maintain at least 20m from the edge of Gap Creek in areas where depth is less than 40m. - Mining has not occurred beneath the Genowlan Creek catchment during the period of the IEA. The Water Management Plan (approved in 2018) reports that surface water monitoring is undertaken at The Grotto, Gap Creek and Genowlan Creek 2 (located within the Genowlan Creek catchment) to provide baseline water quality within this catchment for the assessment of potential future subsidence impacts. - The Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2018) specifies design criteria as “No mining within the Creek Protection Zone (20m either side of creek centreline where depth of cover is less than 40m on Gap Creek, Genowlan Creek)”. - The Airly Mine Extraction Plan under former Development Consent MOD 3 DA162/091 for pillar splitting and quartering within the Extraction Plan area in ML1331 (Centennial Airly, May 2016) states “No mining in the creek protection zone where less than 40m depth of cover and 20m each side of the creek...”. - The Water Management Plan (Centennial Airly, 2018) includes surface water quality monitoring (Table 4-1) and surface water flow monitoring requirements for Gap and Genowlan Creeks. Continuous flow monitoring was undertaken at Gap Creek in 2018 and 2019. Water quality samples were taken if there was water flow in Gap and Genowlan Creeks at the time of sampling. - The 2018 Annual Review reported “No flows were recorded at the Gap Creek or Genowlan Creek monitoring sites, located within the Genowlan Creek catchment, during 2018 with the exception of periods of flow in late November 2018 and December 2018. Flow occurred in Gap Creek and Genowlan Creek following periods of heavy rainfall while periods of no flow corresponded with low or no rainfall. Therefore, no water quality samples were collected from Gap Creek during 2018.” - The 2019 Annual Review reported measurable surface water flow in Gap Creek following periods of heavy rainfall in 2019 and “Gap Creek was fresh, slightly acidic, of chloride/bicarbonate type with no dominant cation. This signature is similar to alluvial groundwater in the Gap Creek catchment while considerably different to the Airly Creek catchment. Minor Site Specific Guideline Value (SSGV) exceedances occurred for EC and pH in January, February, March and April but remained consistently with historical ranges. Dissolved metals were below all SSGVs.” - The 2019 Aquatic Ecology Monitoring Report reported that “no surface flow was observed at any of the sites visited in 2019, with the exception of a small amount of flow through the flow gauging weir at GEN”. - The 2018 Airly aquatic ecology monitoring Annual Report states “Geomorphology monitoring conducted in 2018 found that there were no exceedances of the stream health performance criteria for geomorphic condition and watercourse stability, as presented in the water management plan. The next round of geomorphology monitoring is planned for 2020”. - The 2020 watercourse stability report (section 4) states that Watercourse stability monitoring was undertaken at Airly Mine on 26 and 27 October 2020; and “Based on the visual assessment undertaken, there is no evidence of exceedances of the stream health performance criteria for geomorphic condition and watercourse stability, as presented in the WMP”.	Compliant	
	All other watercourses	No greater subsidence impacts or environmental consequences than predicted in the EIS		A review of 2018 and 2019 Subsidence monitoring reports for subsidence impacts on other water courses, did not identify greater subsidence impacts or environmental consequences than predicted in the EIS.	Compliant	
	Land					
	The Grotto	Negligible subsidence impacts or environmental consequences		Plan 3 Mining Zones with 2017, 2018 and 2019 Mine Workings (within the 2019 Annual Review) indicate that existing mine workings are greater than 600m from The Grotto.		
	Cliffs within a 26.5 degree angle of draw of the Airly underground mine workings	No greater subsidence impacts or environmental consequences than predicted in the EIS (i.e. occasional rock falls,	Subsidence Monitoring Program: Splitting and Quartering Extraction Plan (ML1331) (EP-SMP) (Centennial Airly, May 2018)	The Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2018) specifies design criteria as “No Splitting and Quartering within 26.5 degrees of the toe of Cliffs located within publicly accessibly areas (e.g. vehicle access tracks)”and “No proposed workings within or immediately adjacent to the New Hartley Shale Mine Potential Interaction Zone (NHSMPIZ),	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation
		displacement or dislodgment of boulders or slabs of less than 30 m3, or fracturing, that do not impact Aboriginal heritage, EECs or public safety), that in total do not impact more than 2% of the total area of such cliffs	121 and 200 Panel Subsidence Monitoring Outcomes (Strata², March 2019) - Stress Change Monitoring Results in 207 Panel at Airly Mine (Strata 2, December 2018) 121 and 200 Panel Subsidence Monitoring Outcomes (Strata², May 2019) - Panel and Pillar Mining Zone Extraction Plan MW02 – MW15 (Centennial Airly, April 2019) 2019 Annual Subsidence Review (Strata², December 2019) 2020 Annual Subsidence Review (Strata², February 2021) 2020 Annual Review (Centennial Airly, 2021)	<i>including within 26.5 degree Angle of Draw plus 50m from the crest and toe of cliffs defined in the EIS in the vicinity of the NHSMPIZ</i>. - The Panel and Pillar Mining Zone Extraction Plan MW02 – MW15 (Centennial Airly, April 2019) specifies a “26.5 degree setback from the tops of cliffs located within the Cliff Line Zone of First Workings (CLZ) to all panels MW02-MW15”. - No cliff falls were identified during the site inspection. - Centennial Airly reported in the 2018, 2019 and 2020 Annual Reviews that no falls were detected during the period of the IEA. - During consultation for this IEA, MCW Environmental contacted BCD who provided feedback on behalf of NPWS. Feedback included “<i>In addition to the surface fracturing of rock NPWS identified a significant rockfall event which occurred at the same time as the subsidence incident. NPWS Manager Mudgee Area would have more detail on this</i>”. Evidence of a cliff fall located > 1 kilometre from Airly mining activities on Mt Airly was identified by Centennial Airly in 2020 using photogrammetry. The cliff fall was reported by Centennial Airly to NPWS. MCW Environmental sighted email approval for provision of 3D mesh (photogrammetry) information on the cliff fall to a NPWS consultant dated 7 May 2020. NPWS were advised by Centennial Airly that the cliff fall was not related to Airly activities (due to distance from Airly mining activities). The 2020 Annual Review (Table 24 SSD_5581 Compliance Summary) states “<i>No falls detected within an angle of draw of 26.5° of Airly underground mine workings</i>”. MCW Environmental contacted the NPWS Manager Mudgee area on 13 April 2021 to assess if this issue had been closed out. At the time of finalising this IEA report, a response from NPWS had not been received.		
	Pagodas within a 26.5 degree angle of draw of the Airly underground mine workings (other than pagodas affected by the New Hartley interaction zone)	No greater subsidence impacts or environmental consequences than predicted in the EIS (i.e. occasional rock falls, displacement or dislodgment of boulders or slabs of less than 30 m3, or fracturing, that do not impact Aboriginal heritage, EECs or public safety), that in total do not impact more than 2% of the total area of such pagodas	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) 2019 Annual Subsidence Review (Strata², 5 December 2019) - CCC presentation (October 2020) - Letter to Centennial Airly Incident Subsidence Impact of Surface Fractures (DPIE, 11 December 2020) - EIS Airly Mine Extension Project (Golders, 2014) - Master TARP Rev3_190419 (PPMZ Extraction Plan) - Incident Investigation Report (Centennial Airly, 2 December 2020)	Centennial Airly reported in their 2018, 2019 and 2020 Annual Reviews that no falls were detected during the period of the IEA.	Compliant	
	Pagodas within a 26.5 degree angle of draw of the New Hartley interaction zone	No greater subsidence impacts or environmental consequences than predicted in the EIS		Airly reported in their 2018 and 2019 and 2020 Annual Reviews that no falls were detected during the period of the IEA.	Compliant	
	Minor cliffs	No greater subsidence impacts or environmental consequences than predicted in the EIS		- Airly reported in their 2018, 2019 and 2020 Annual Reviews that no falls were detected during the period of the IEA. - The definition of a minor cliff in SSD_5581 is: “<i>A continuous rock face, including overhangs, which has a:</i> <i>Minimum length of 20 metres and a height between 5 metres and 10 metres; and</i> <i>Minimum slope of 2 to 1 (> 63.4°)</i>”. - During the site inspection by MCW Environmental in February 2021, Surface Crack (Fracture 02) was observed on a cliff face. Centennial Airly confirmed that Fracture 2 was not located in an area that was defined as a ‘minor cliff’ (as defined in SSD_5581). The Incident Investigation Report (Centennial Airly, 2 December 2020) reports that surface crack (Fracture 01) was approximately 120m from the nearest cliff in the Cliff Zone of First Workings, and surface crack (Fracture 02) was approximately 70m from the nearest cliff in the Cliff Zone of First Workings.	Compliant	-
	Steep slopes	No greater subsidence impacts or environmental consequences than predicted in the EIS		Airly reported in their 2018, 2019 and 2020 Annual Reviews that no impacts were detected on steep slopes during the period of the IEA.	Compliant	
	All other land not covered by a performance measure above	No greater subsidence impacts or environmental consequences than predicted in the EIS		- Refer Section 2.5 of the Main IEA Report. - Subsidence effect was measured in 2020 subsidence surveys that exceeded EIS predictions for vertical subsidence (125mm predicted, maximum 612mm measured), tilt (3mm/m predicted, maximum 8.7mm/m measured,) and strain (2mm/m predicted, maximum 3.2 mm/m measured); and subsidence impacts were recorded (surface cracking - Fracture 01 and Fracture 02). The land where surface cracking was observed was classified under SSD_5581 Schedule 3 Condition 2 Table 1 as ‘<i>All other land not covered by a performance measure above</i>’ with a corresponding subsidence impact performance measure ‘<i>No greater subsidence impacts or environmental consequences than predicted in the EIS</i>’. As the EIS predicted ‘<i>no surface fracturing</i>’, surface cracking represents a non-compliance with SSD_5581 Schedule 3 Condition 2 Table 1 performance measure for ‘<i>All other land not covered by a performance measure above</i>’. - As the exceedance of SSD_5581 Schedule 3 Condition 2 performance measures is currently under investigation by DPIE, no further recommendations have been made by MCW Environmental. MCW Environmental has assumed that investigation by DPIE will include assessment of the impact of mining induced surface cracking.	Non-compliant (NC-3: Subsidence impacts (surface cracking - Fracture 01 and Fracture 02) represent a non-compliance with SSD_5581 Schedule 3 Condition 2 Table 1 Performance Measure for ‘ <i>All other land not covered by a</i>	As the exceedance of SSD_5581 Schedule 3 Condition 2 subsidence impact performance measure is currently under investigation by DPIE, no further recommendations have been made.

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No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation
				- MCW Environmental were not provided with evidence that investigations were being undertaken by other regulators (e.g. Resources Regulator) – Refer Appendix A3 ML1331 and no further investigations were raised by regulators during consultation for this IEA. - MCW Environmental has not undertaken an assessment of environmental consequences from subsidence effects exceeding EIS predictions and the subsidence impact of surface cracking.	<i>performance measure above</i> .	
Biodiversity						
	Threatened species, threatened populations, EECs and groundwater dependent ecosystems (with the exception of those listed below)	Negligible environmental consequences	- Annual Flora and Fauna Monitoring Report 2019 (RPS, March 2020) - Annual Flora and Fauna Monitoring Report 2018 (RPS, March 2019) - Annual Flora and Fauna Monitoring Report 2020 (RPS, March 2021) 2020 Annual Review (Centennial Airly, 2021)	- Ongoing independent seasonal ecological monitoring (flora and fauna) has been conducted by RPS during the period of the IEA to examine the potential effects, if any, of underground mining on threatened species and communities of flora and fauna that are present onsite. The monitoring methodology was refined each year and adjusted to specifically target threatened species and to identify potential changes to these overtime as a result of mining activities on site. The independent reports assessed this condition as Compliant i.e., negligible environmental consequences to threatened species, threatened populations, EEC and groundwater dependant ecosystems including in: 2018: No adverse impacts to flora health as a result of mining practices. Some areas were reported as experiencing impacts as a result of a controlled burn on Mount Airly in May 2018. Fauna monitoring results were comparable with previous seasonal monitoring events. 2019: Annual surveys for the 2019/20 monitoring program were significantly affected by bushfires and site restrictions associated with bushfire activity. The controlled burn that took place in May 2018 affected the presence of <i>P. stricta</i> in plots that were surveyed. <i>“Percent cover of P. stricta was substantially lower in plots that had experienced burning through the controlled burn which is to be expected. Vegetation surveys within MU 20 demonstrated the highest plant species richness to date, across all four BAM plots. The primary contributing factor to this result was likely due to the uncharacteristically high rainfall experienced in January of 2019 (~229 mm) at Glen Alice, that likely aided in the germination of more herbs and forbes than usual.”</i> - In response to a 2017 monitoring report recommendation, Centennial Airly engaged Apex Predator Solutions to undertake feral cat trapping and control measures within the Airly Mining Lease area in December 2018. The 2018 Annual Review reports <i>“Three foxes, one rabbit and one feral boar was controlled but no cats. Whilst no cats were trapped or controlled during this control round, some minor evidence of their continued presence (be it in low abundance) was observed via the observation of tracks (footprints).”</i> Camera trapping and opportunistic sightings for feral species was undertaken in 2019 with no feral species recorded. - Recommendations in the 2019 RPS Ecological Monitoring Report for feral cat trapping, more camera trapping for spotted quoll and expanded surveys for threatened birds and surveys for koalas was undertaken and the 2020 RPS Ecological Monitoring Report reports that a larger number of camera traps were installed. - The 2020 Annual Review advises that activities that will be completed in 2021 will include <i>“Continue the feral animal control program on mine owned lands to target feral cats and wild dogs. This program has been designed in consultation with Local Land Services, National Parks & Wildlife Service and RPS Consultancy. The program is designed to reduced impacts of feral animal predation to native fauna”</i>.	Compliant	
	Pultenaea sp Genowlan Point population and Genowlan Point Allocasurina nana Heathland community	No environmental consequences	Plan 3 AM02130 Airly Consent Mining Zones Workings 2017, 2018 and 2019 30/12/2019 Mine Workings (Centennial Airly, 19 March 2020)	Plan 3 Mining Zones with 2019 Mine Workings (2019 Annual Review) indicates that existing mine workings are a significant distance (in excess of 600m) from Genowlan Point therefore potential impacts from subsidence are not triggered.	Compliant	
Heritage sites						
	Aboriginal heritage sites identified in Appendix 5	Negligible environmental consequences	- Plan 3 AM02130 Airly Consent Mining Zones Workings 2017, 2018 and 2019 30/12/2019 Mine Workings (Centennial Airly, 19 March 2020) - Western Region Aboriginal Heritage Management Plan (Centennial Airly, 2017) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- As documented in 2018, 2019 and 2020 Annual Review proposed mine schedule and figures identifying the location of Aboriginal heritage sites in Aboriginal Cultural Heritage Management Plan, no registered Aboriginal heritage sites were undermined in 2018, 2019 and 2020. - The 2018 IEA identified that heritage site 45-1-2748 (isolated find) was undermined in May 2017. As required by the Western Region Aboriginal Cultural Heritage Management Plan, a Phase 1 pre-mining inspection was conducted in 2017, a Phase 2 post mining initial inspection was conducted in 2017 and a Phase 3 post mining inspection was scheduled to be conducted in 2020. The 2020 Annual Review reports that <i>“Following higher than predicted subsidence levels on Mt Airly, a periodic in field assessment of all cultural heritage sites within the Project Area was completed in August 2020. No mining related impacts were observed at any of the registered sites”</i>. The 2017 and 2020 inspections were attended by RPS Cultural Heritage Specialist, Airly Environmental Representative and community representatives from various Aboriginal parties. No mining induced impacts were observed.	Compliant	
	Non-Aboriginal heritage sites identified in Appendix 6	Negligible environmental consequences	- Plan 3 AM02130 Airly Consent Mining Zones Workings 2017, 2018 and 2019 30/12/2019 Mine Workings (Centennial Airly, 19 March 2020) - Western Region Historic Heritage Management Plan (Centennial Airly, 2018) - ECD (Centennial Airly, 2018-2021)	There were no non-compliances relating to heritage matters reported in the 2018, 2019 and 2020 Annual Reviews.	Compliant	

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No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation
			Complaints Register (Centennial Airly (2018-2021))			
	Mine workings					
	First workings beneath any feature where performance measures in this table require no or negligible environmental consequences and to all first workings beneath cliffs	To remain long-term stable and non-subsiding	Airly Cliff Zone of First Workings Extraction Plan (Centennial Airly, 2017)	- The 2018, 2019 and 2020 Annual Reviews report that First Workings were: - Conducted in accordance with the approved Extraction Plans for Airly Cliff Zone of First Workings, Shallow Zone, Partial Pillar Extraction Zone and the Panel and Pillar Zone. - Assessed as complying with the Airly Cliff Zone of First Workings Extraction Plan. - Long term stable and non-subsiding in accordance with SSD_5581 Schedule 3 Condition 6. - The 2020 Annual Review also advises that the Resources Regulator provided advice that they were satisfied that the proposed pillar dimensions were long term stable and non-subsiding on 13 July 2016. Pillar dimensions have remained consistent with those provided to the Resources Regulator in 2016. - Although no orange or red TARP triggers for first workings were reached during 2019 and 2020, in 2018 orange TARP triggers occurred in the 207 panel <i>"These pillars were not scheduled for extraction and showed no further signs of further deterioration after the spalling of the ribs immediately after the mining of the first workings."</i> - Weekly statutory inspections and tell-tale monitoring of the roof have been undertaken to verify that First Workings remain stable.	Compliant	
	Second workings	To be carried out only in accordance with an approved Extraction Plan	- Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2018) - Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2019) - Mt Airly Panel and Pillar Mining Zone Extraction Plan ((Centennial Airly, April 2019) - Cliff Line Zone and Zone of First Workings Extraction Plan (Centennial Airly, September 2017) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Second workings were carried out in accordance with the Splitting and Quartering Extraction Plan. - Evidence of second workings in the Panel and Pillar zone being conducted in accordance with the Panel and Pillar Extraction plan include the following (as reported in the 2020 Annual Review Section 87.9.3 Subsidence Performance Summary (and not fully verified): - Panel and Pillar Extraction mining was carried out only within consented Mt Airly Panel and Pillar Extraction Plan area of the mine. - There were three exceedance of consent conditions or performance measures relating to subsidence notified to the DPIE during 2020. - All conventional subsidence monitoring committed to in the Extraction Plan was conducted. - All photogrammetry was completed as planned. - No evidence of any rock falls within an angle of draw of 26.5° of workings. - Subsidence exceeded predicted values. - No evidence of pillar failure underground. - Amber and red trigger values were exceeded during 2020 relating to subsidence impact (surface cracking) and subsidence effect exceedance of EIS predictions. - MCW Environmental did not assess compliance with the pre-existing MOD 3 Extraction Plan.	Compliant	
	Notes: <i>These performance measures apply to all mining taking place after the date of this consent.</i> <i>The Applicant will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this consent (see condition 5 below).</i> <i>Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.</i>			- As the performance measure for "All other land not covered by a performance measure above exceeded subsidence impacts predicted in the EIS in Table 1, this condition was assessed Non-Compliant. - Centennial Airly has generally met the remaining performance measures defined in Table 1.		
3-3	Performance Measures – Built Features The Applicant must ensure that the development does not cause any exceedances of the performance measures in Table 2 to the satisfaction of the Secretary. Table 2: Subsidence Impact Performance Measures – Built Features				Compliant	
	Built Features	Performance Measures				
	Emergency services communication tower and associated sheds and infrastructure	- Always safe and serviceable - Damage must be fully repairable, and must be fully repaired	Plan AM02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021)	- Airly reported that there has not been mining within a distance of the asset that could cause damage. - Airly reported that the emergency services tower had not been damaged and was safe and serviceable. Auditors observed the tower from Mt Airly. - No incident or complaints were recorded regarding the tower and associated infrastructure. - Consultation with stakeholders did not identify any concerns with the tower.	Compliant	
	State survey mark at Genowlan Trig Station, Telstra copper cable and Nissen Hut and outbuilding	Always safe and serviceable, unless	Plan AM02503 Extraction Workings and Approved Areas 2018 -2021 (Centennial Airly, 10 February 2021)	- Airly reported that there has not been mining within a distance of the assets described that could cause damage. - Airly reported that the Genowlan Trig Station, Telstra copper cable and Nissen Hut and outbuilding had not been damaged and were safe and serviceable.	Compliant	

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No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation
		- otherwise agreed with the owner - Damage must be fully repairable, and must be fully repaired		Consultation with stakeholders did not identify any concerns with these items.		
"Stone Cottage"		- No second workings to occur within a setback distance defined by half the depth of cover from the building, measured horizontally in the seam, unless otherwise agreed with the owner - Always safe and serviceable, unless otherwise agreed with the owner - Damage must be fully repairable, and must be fully repaired, unless otherwise agreed with the owner	- Built Features Management Plan for pillar splitting and quartering MOD3 (DA162/91) area ML 1331 (Centennial Airly, November 2020) - Subsidence Monitoring Program for pillar splitting and quartering MOD3 (DA162/91) area ML1331 (Centennial Airly, November 2020) - Subsidence Monitoring Program: Mt Airly Panel & Pillar Mining Zone Extraction Plan (EP-SMP) (Centennial Airly, April 2019)	- The 2018 and 2019 Annual Reviews report that a Dilapidation survey was carried out pre- first workings (sighted by auditors in the 2018 IEA) and that no secondary extraction carried out to date. The stone cottage was observed during the site inspection and was intact, although a detailed assessment was not undertaken. - No incident or complaints were recorded regarding the Stone Cottage.	Compliant	
Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates		- Use should be maintained wherever practicable in consultation with BCD - Damage must be fully repair able and must be fully repaired	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- The 2018 and 2019 Annual Reviews report that weekly inspections have not found damage to infrastructure. Although the Airly campground was not inspected by the auditors, the site inspection included accessing Mt Airly subsidence monitoring locations using a 4WD track. Fences and gates were operational and the condition of the 4WD track on Mt Airly was noted as improved since the 2018 IEA site inspection. - No incident or complaints were recorded regarding the campground, gates, fences or the 4WD track. - This condition was assessed as Compliant as the 4WD track to Mt Airly monitoring locations was accessible, the condition of the track was improved since the 2018 IEA site inspection, and there was no damage to the 4WD track observed as a result of Airly mine activities such as subsidence. - Following agency consultation for this IEA, BCD advised "<i>NPWS should again be consulted regarding MMBSCA access and trail management</i>" as part of ongoing management of the area; consequently, a recommendation has been included to consult with NPWS to agree a program for maintenance of Mugii Murum-ban State Conservation Area access and trail management and meet SSD_5581 Schedule 3 Condition 3 performance measures for '<i>Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates</i>'.	Compliant (C-1)	C-1 Recommendation 5: Consult with NPWS to agree a program for maintenance of Mugii Murum-ban State Conservation Area access and trail management and meet SSD_5581 Schedule 3 Condition 3 performance measures for ' <i>Other built features and improvements including Airly Camp Ground, walking and 4WD tracks, fences and gates</i> '.
Public Safety						
Public Safety		Negligible additional risk, in consultation with the Resources Regulator and BCD	20190413-WO 20190913-WO 20190613-WO 20201029-WO - ECD (Centennial Airly, 2018-2021) - Complaints (Centennial Airly, 2018 -2021) - Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021	- Airly reported that there were no public safety related incidents identified from subsidence due to mining operations. - Monthly work orders for surface inspections are generated by the Centennial Airly maintenance program, Pulse. Completed work orders from 2019 and 2020 for the Production Area general inspections were sighted. - No incident or complaints were recorded regarding public safety. - MCW Environmental are not safety specialists and have not assessed the adequacy of public safety risk.	Compliant	
Notes: <i>These performance measures apply to all mining taking place after the date of this consent.</i> <i>The Applicant will be required to define more detailed performance indicators for each of these performance measures in the Built Features Management Plans or Public Safety Management Plan (see condition 7 below).</i> <i>Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods</i>				Based on the information provided and the discussion above, it is considered that Airly has generally met the performance measures defined in Table 2.		

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No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter. Requirements regarding safety or serviceability do not prevent preventative or mitigatory actions being taken prior to or during mining in order to achieve or maintain these outcomes.				
3-4	Any dispute between the Applicant and the owner of any built features over the interpretation, application or implementation of the performance measures in Table 2 is to be settled by the Secretary, following consultation with the Resources Regulator. Any decision by the Secretary shall be final and not subject to further dispute resolution under this consent.	- ECD (Centennial Airly, 2018-2021) - Complaints (Centennial Airly, 2018 -2021)	No disputes between the Applicant and the owner of any built features were reported.	Not Triggered	
3-5	Independent Review and Monitoring Panel The Applicant must pay all costs incurred by the Department to establish and operate an IEP for the development	- Incident Investigation Report (Centennial Airly, 2 December 2020) - Email to MCW Environmental 'Evidence of Consultation' (Centennial Airly, 26 March 2021) - Telephone discussion between MCW Environmental and Senior Environmental Assessment Officer (DPIE's Energy, Industry & Compliance Division, Planning & Assessment Group), 12 April 2021	- The Independent Expert Panel (IEP) was established after Development Consent SSD_5581 was granted. Airly have consulted with the IEP during preparation of Extraction Plans and in response to subsidence effects exceeding EIS predictions and subsidence impact (surface cracking). - Centennial Airly acknowledge that costs related to the IEP are to be borne by Airly, however as at the date of the IEA, no invoices relating to the IEP had been received consequently this condition was assessed as Not triggered. - In email correspondence to MCW Environmental on 26 March 2021 regarding a 2014 EIS SOC on consultation with relevant geotechnical expertise on the Strata Failure Management Plan, Centennial Airly advised that "Don Kay (MSEC) peer reviewed the original work done by Golder Associates. Don then formed part of the Independent Review Panel along with Ken Mills (SCT) and Ismet Canbalat (UNSW) that reviewed the geotechnical aspects. Ken Mills and Ismet Canbalat currently form the Independent Expert Panel for SSD5581". The Incident Investigation Report regarding subsidence effects exceeding EIS subsidence predictions and subsidence impact (surface cracking) (December 2020) reports the following regarding updated modelling undertaken in December 2020; "The University of NSW (UNSW) were engaged through MSEC to build a new Universal Distinct Element Code (UDEC) 2D and ultimately 3D subsidence model for Airly" and "MSEC utilise the outcomes of the modelling to assess and determine impacts to natural and built features based on the subsidence levels predicted by the model.....In addition to the above, the Airly Mine IEP suggested that SCT be engaged to construct a 2D FLAC model to explore the mechanism of higher than expected subsidence and predict the expected maximum subsidence on Mt Airly. SCT were engaged on 6 October 2020 and a FLAC model has subsequently been prepared for Airly Mine which has been calibrated to measured subsidence data.... Modelling works by SCT are now being undertaken to determine required pillar sizes to limit subsidence to 125 millimetres or less. The outcomes of this modelling work are not anticipated until Friday 3 December 2020.... The outcomes of the work done by SCT will, once completed, be used by MSEC to update the 2D and 3D UDEC subsidence model." MCW Environmental recognise that subsidence modelling is a specialised technical field, however due to the complexities of the role of the IEP and involvement of IEP businesses in undertaking actual modelling, MCW Environmental contacted the Senior Environmental Assessment Officer (DPIE's Energy, Industry & Compliance Division, Planning & Assessment Group) and ascertained that DPIE were satisfied with the independence of the IEP members and geotechnical specialists updating modelling for Centennial Airly in response to the incident regarding subsidence effects exceeding EIS predictions and subsidence impact (surface cracking).	Not triggered	
3-6	First Workings With the exception of first workings in the Cliff Line Zone and Zone of First Workings, the Applicant may carry out first workings within the underground mining area, other than in accordance with an approved Extraction Plan, provided that the Resources Regulator is satisfied that the first workings are designed to remain stable and non-subsiding in the long-term, except insofar as they may be impacted by approved second workings. <i>Note: The intent of this condition is not to require an additional approval for first workings, but to ensure that first workings are built to geotechnical and engineering standards sufficient to ensure long term stability, with negligible resulting direct subsidence impacts</i>	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- The 2018, 2019 and 2020 Annual Reviews reported that Resources Regulator (DRG, formerly DRE) provided a letter stating satisfaction that all first workings pillars are long term stable and non-subsiding issued under DA 162/91 on 13/7/16 (sighted during previous IEA). Pillar dimensions were reportedly not changed. - The IEA auditors are not Subsidence Specialists and have not conducted an independent assessment of the Resources Regulator letter or its requirements. The compliant finding is based on the statements made in the Annual Reviews by Airly.	Compliant	
3-7	Extraction Plan Prior to carrying out any first workings within the Cliff Line Zone and Zone of First Workings (refer to	Cliff Line Zone of First Workings Extraction Plan (Centennial Airly, September 2017)	- Airly Mine has five approved mining zones under Development Consent SSD_5581, which are illustrated on Figure 2 of SD_5581 and described as: - Cliff line zone of first workings.	Compliant	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	Figure 2 in Appendix 3) or second workings, the Applicant must prepare an Extraction Plan for the relevant workings to the satisfaction of the Secretary. Each Extraction Plan must:	- MOD 3 Extraction Plan Variation Approval (Centennial Airly, 2016) - Airly Mine Splitting and Quartering Extraction Plan ML 1331 (Centennial Airly, 2017) - Airly Mine Splitting and Quartering Extraction Plan ML 1331 (Centennial Airly, 2018) - Airly Mine Splitting and Quartering Extraction Plan ML 1331 (Centennial Airly, May 2019) - Mt Airly Panel and Pillar Mining Zone Extraction Plan (Centennial Airly, April 2019) - Letter to Centennial Airly approving of Splitting and Quartering Extraction Plan 400 and 400A Panels (DPIE, 7 May 2019) - Letter to Centennial Airly for approval of Splitting and Quartering Extraction Plan Rev1 for MW02-MW05 (DPIE, 31 May 2019) - Letter to Centennial Airly for approval of Extraction Plan for Panel and Pillar Mining Operations MW02-MW15 (DPIE, 25 June 2019)	- New Hartley shale mine potential intersection zone. - Panel and pillar mining zone. - Partial pillar extraction zone. - Shallow zone. - These five zones provide for different types of mining in specific areas to protect surface features. After the first Extraction Plan under SSD_5581 was approved for mining in the Cliff Line zone of first workings in 2017, Airly Mine has been undertaking a staged approach to Extraction Plans within approved mining zones. - The Extraction Plan for Splitting and Quartering within ML1331 (approved in 2018 and revised and re-approved in 2019) was relevant to mine development (first workings) and splitting and quartering (second workings) in parts of the Shallow Mining Zone up to 100m Depth of Cover and the Partial Pillar Mining Zone up to 160m Depth of Cover resulting in predicted vertical subsidence of up to 65mm. In August 2018, the Splitting and Quartering Extraction Plan received conditional approval for splitting and quartering in a trial area in 206 and 207 panels, with review required prior to progressing to other parts of the approved extraction area. Following consultation with DPIE, IEP and Resources Regulator, mine design was revised to provide long term stable pillars and Extraction Plan conditional approval was issued by DPIE on 7 May 2019, for mining within the remainder of the Splitting and Quartering Extraction Plan area within ML 1331, upon satisfactory completion of notification requirements. The Splitting and Quartering Extraction Plan that was approved in 2019, replaced the Pillar Lifting methods proposed within the Partial Pillar Mining Zone up to 160m Depth of Cover resulting in predicted vertical subsidence of up to 65 mm as approved; with the lower subsidence method of splitting and quartering only with no pillar lifting proposed and limited to 110m depth of cover and worst case vertical subsidence of <30mm. - Following approval of the Extraction Plan using the Panel and Pillar mining technique (also referred to as Miniwall) in April 2019, secondary extraction using the Miniwall method of panel and pillar extraction was introduced with Miniwall mining in Miniwalls 2, 3 and 4 conducted in 2019. As stated in the Panel and Pillar Extraction Plan (Centennial Airly, April 2019) Miniwall mining differs from long wall mining in that panel void widths supporting the overlying overburden are narrower and the final chain pillars remaining following panel extraction are designed to provide long term stable support to the surface with negligible ground movement, low angle of draw, and no expected surface cracking. - During the period of the IEA, the following mining methods were used: 2018: First workings with large pillars and secondary extraction in the form of splitting and quartering (207 and 206 Panels). 2019: First workings with large pillars and secondary extraction in the form of splitting and quartering (400 A and 400 panels) and, following approval of the Extraction Plan for Panel and Pillar mining technique (also referred to as Miniwall) secondary extraction using the miniwall method of panel and pillar extraction was introduced (Miniwalls 2, 3 and 4). As stated in the Panel and Pillar Extraction Plan (Centennial Airly, April 2019) Miniwall mining differs from long wall mining in that panel void widths supporting the overlying overburden are narrower and the final chain pillars remaining following panel extraction are designed to provide long term stable support to the surface with negligible ground movement, low angle of draw, and no expected surface cracking. 2020: First workings with large pillars and secondary extraction using the miniwall method of panel and pillar extraction (Miniwalls 4, 5, 6 and 7) - In summary: - Airly prepared an Airly Mine Cliff Line Zone of First Workings Extraction Plan (ML1331) (EP) in September 2017. The 2018 IEA auditors sighted a letter from DPIE approving this Extraction Plan in October 2017. There has been no revisions to the Cliff Line Zone of First Workings Extraction Plan during the period of this IEA. - Under SSD_5581: - A Splitting and Quartering Extraction Plan for ML 1331 was approved by DPIE in 2017 and revised in 2018 and 2019. - A Panel and Pillar Mining Zone Extraction Plan was approved by DPIE in April 2019. - Some second workings in the form of splitting and quartering were undertaken under the approved Extraction Plan for splitting and quartering under Modification 3 (as varied) DA162/91.		
3-7	(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;	- Letter to Centennial Airly – Endorsement of Splitting and Quartering Extraction Plan Project Team (DPIE, 20 February 2018) - Letter to Centennial Airly – Endorsement of Panel and Pillar Mining Zone Extraction Plan Project Team (DPIE, 21 September 2018)	(a) Centennial Airly sought and received written approval from DPIE for the Splitting and Quartering Extraction Plan project team in February 2018; and Panel and Pillar Mining Zone Extraction Plan project team in September 2018.	Compliant	
	(b) provide a detailed justification for any proposed divergence from the advice of the IEP or the Resources Regulator;	- Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) - Presentation to IEP on Splitting and Quartering Extraction Plan (ML1331) (Centennial Airly, 22 February 2018)	- Section 2.1.2 and Appendix 4 of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) and the Panel and Pillar Mining Zone Extraction Plan (ML 1331) (Centennial Airly, 2019) references consultation and confirmation of plans with stakeholders (which includes the IEP). - Centennial Airly has evidence of regular consultation with DPIE including for approval of extraction plans and management plans and incident notification. Centennial Airly has evidence of consultation with the IEP regarding Extraction Plans and the 2020 subsidence incidents including:	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
		- Letter to Centennial Airly on review of Management Plans for Splitting and Quartering Extraction Plan (IEP, 24 May 2018) - Estimation of Surface Impacts due to the Extraction of Miniwalls 2 to 15 (Strata², March 2019) - Letter to Centennial Airly for approval of Splitting and Quartering Extraction Plan Rev1 for MW02-MW05 (DPIE, 31 May 2019) - Presentation to IEP on MW7-9 Extraction Plan (Centennial Airly, 17 June 2020) - Letter to Centennial Airly for approval of Extraction Plan for Panel and Pillar Mining Operations MW02-MW15 (DPIE, 25 June 2019) - Presentation to IEP on Splitting and Quartering Extraction Plan (ML1331) (Centennial Airly, 5 April 2019) - Letter to Centennial Airly IEP review of Updated Mt Airly Panel and Pillar Mining Zone Master TARP and Subsidence Monitoring Plan (IEP, 27 May 2019) - Presentation to Centennial Airly on Miniwall panels: IEP observations (IEP, 16 June 2020) - Presentation to DPIE and IEP (Centennial Airly, 18 January 2021) - Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) - Airly Mine Splitting and Quartering Extraction Plan (ML1331) SSD_5581 (Centennial Airly, May 2019) - Mt Airly Panel and Pillar Mining Zone Extraction Plan (Centennial Airly, April 2019) - Cliff Line Zone and Zone of First Workings Extraction Plan (Centennial Airly, September 2017)	- Presentation to IEP on subsidence management strategy and Mt Airly Panel and Pillar zone Extraction Plan modification Miniwall 8-9 in January 2021. - Presentation to Centennial Airly on Miniwall panels: IEP observations including recognition of subsidence monitoring working well in June 2020. - Presentation to IEP on subsidence monitoring and modelling, completion of MW05, cliff mapping and impact assessment and public safety management in June 2020. - Reference to advice from the IEP in the approval letter from DPIE for the Extraction Plan for Panel and Pillar Mining Operations Miniwall 02-Miniwall 15 in June 2019. - An estimate of surface impact due to the Extraction of Miniwall 02-15 was conducted by specialists Strata² in March 2019, to support the Splitting and Quartering Extraction Plan including “<i>the conservative approach to mine design, management, monitoring and approval to protect sensitive features</i>”. The estimate reports that it was prepared in consultation with the IEP. - Presentation to IEP on Splitting and Quartering Extraction Plan following completion of 207 and 206 trial mining areas on 5 April 2019. - IEP review in May 2018 of Subsidence Monitoring Plan, Public Safety Management Plan and Land Management Plan that form part of the Splitting and Quartering Extraction Plan acknowledging that “<i>The monitoring plan is appropriate and in line with IEP’s suggestion to closely monitor cliff formations</i>” - Presentation to IEP on Splitting and Quartering Extraction Plan in February 2018. - Refer also to SSD_5581 Schedule 6 Condition 9 Incident Reporting regarding the exceedance of EIS subsidence effect predictions and subsidence impact (surface cracking).		
	(c) include detailed plans of existing and proposed first and second workings and overlying surface features, including the identification of appropriate setback distances between cliffs, steep slopes and pagodas and second workings and any applicable adaptive management measures;		Detailed plans are provided in Volume 3 of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) and the Panel and Pillar Mining Zone Extraction Plan (ML 1331) (Centennial Airly, 2019).	Compliant	
	(d) include adequate consideration of mine roof and floor conditions, pillar width to height ratio, final pillar design dimensions and the long-term stability of pillars, following consultation with the IEP;		- Mine planning and design is discussed in Section 3.4, pillar stability assessment report is provided as Appendix 5, and consultation with IEP is documented in Appendix 4 of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). - Mine planning and design is discussed in Section 3.3 Subsidence Predictions & Impact Assessment Report is provided as Appendix 5, and consultation with IEP is documented in Appendix 4 of the Panel and Pillar Mining Zone Extraction Plan (ML 1331) (Centennial Airly, 2019).	Compliant	
	(e) give express consideration to the design parameters underpinning the advice in the IPRP’s report, and if the proposed mine layout diverges from these parameters, provide a detailed justification for the proposed divergence, following consultation with the IEP;		- Mine planning and design referencing is discussed in Section 3.4, pillar stability assessment report is provided as Appendix 5, and consultation with IEP is documented in Appendix 4 of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). - Mine planning and design is discussed in Section 3.3, Subsidence Predictions & Impact Assessment Report is provided as Appendix 5, and consultation with IEP is documented in Appendix 4 of the Panel and Pillar Mining Zone Extraction Plan (ML 1331) (Centennial Airly, 2019).	Compliant	
	(f) provide an assessment of the likely stability of cliff lines, pagodas and steep slopes, in consultation with the IEP;		- Mine planning and design is discussed in Section 3.4, pillar stability assessment report is provided as Appendix 5, performance measures including cliffs, pagodas and steep slopes in Section 3.6 and consultation with IEP is documented in Appendix 4 of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). - Mine planning and design is discussed in Section 3.3, Subsidence Predictions & Impact Assessment Report is provided as Appendix 5, performance measures including cliffs, pagodas and steep slopes in Section 3.5 and consultation with IEP is documented in Appendix 4 of the Panel and Pillar Mining Zone Extraction Plan (ML 1331) (Centennial Airly, 2019).	Compliant	
	(g) provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed mining covered by the Extraction Plan, incorporating any relevant information obtained since this consent, in consultation with the IEP;		- Subsidence predictions are discussed in Section 3.5, subsidence management strategies in Section 3.7, pillar stability assessment report is provided as Appendix 6, and consultation with IEP is documented in Appendix 4 Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). - Subsidence predictions are discussed in Section 3.4, subsidence management strategies in Section 3.6, Subsidence Predictions & Impact Assessment Report is provided as Appendix 5, and consultation with IEP is documented in Appendix 4 Panel and Pillar Mining Zone Extraction Plan (ML 1331) (Centennial Airly, 2019).	Compliant	
	(h) describe in detail the performance indicators and measures that would be implemented to ensure compliance with the performance measures in Tables 1 and 2, and manage or remediate any impacts and/or environmental consequences to meet the rehabilitation objectives in condition 27 of Schedule 4, following consultation with the IEP;		- Performance objectives are discussed in Section 3.6, within the Master TARP in Appendix 1 and within the component management plans of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). - Performance objectives are discussed in Section 3.5, within the Master TARP in Appendix 1 and within the component management plans Panel and Pillar Mining Zone Extraction Plan (ML 1331) (Centennial Airly, 2019).	Compliant	
	(i) include a: (i) Subsidence Monitoring Program which has been prepared in consultation with the IEP, Resources Regulator and BCD, to: monitor the subsidence effects and subsidence effects of the development;	- Subsidence Monitoring Program: Splitting and Quartering Extraction Plan (ML1331) (EP-SMP) (Centennial Airly, May 2018) - Review of Environmental Factors for Proposed Subsidence Monitoring Activities (RPS, 6 June 2018)	The Subsidence Monitoring Program, Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) was approved as part of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). Evidence of consultation was included in the Program (Table 1.1 and Appendix 4) and included IEP, Resources Regulator and BCD.	Compliant	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	- develop effective remote monitoring techniques for the development; - monitor pillar loads underground to develop an understanding of the loading conditions on pillars in the vicinity of cliff lines, pagodas and steep slopes; - provide data to assist with the management of risks associated with subsidence; - validate the subsidence predictions; - analyse the relationship between the predicted and resulting subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; and - inform the contingency plan and adaptive management process;	- GNSS (real time) Survey Monitoring System Proposal (GNSS Monitoring, 15 March 2018) - Letter to Centennial Airly IEP review of Updated Mt Airly Panel and Pillar Mining Zone Master Tarp and Subsidence Monitoring Plan (IEP, 27 May 2019) - Estimation of Surface Impacts due to the Extraction of Miniwalls 2 to 15 (Strata², March 2019) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- A high level review of the Subsidence Monitoring Program, Splitting and Quartering Extraction Plan (ML 13331), for this IEA identified that the requirements of SSD_5581 Schedule 3 condition 7(i) (i) have been addressed. - A letter from the IEP to Centennial Airly in May 2018 identifies that matters raised previously by the IEP on the Subsidence Monitoring Program, Splitting and Quartering Extraction Plan (ML 13331), appear to have been addressed in the revised Master TARP and Subsidence Monitoring Plan. - An estimate of surface impact due to the Extraction of Miniwall 2-15 was conducted by specialists Strata² in March 2019, to support the Panel and Pillar Extraction Plan including “<i>the conservative approach to mine design, management, monitoring and approval to protect sensitive features</i>”. The estimate reports that it was prepared in consultation with the IEP. The report conclusions include: <i>The likelihood of the initial MW2-5 panel extraction having any measurable impact on surface features inside or outside the extraction panel footprint is considered “practically impossible”.</i> <i>Figure 35 shows the MW2-15 area in total. Again, the likelihood of MW2-15 extraction having any measurable impact on surface features inside or outside the extraction panel footprint is considered “practically impossible”.</i> <i>It is therefore considered likely that future survey work planned by the mine will result in an improved level of detail and a slight overall reduction in the current cliff face height estimates.</i> - With subsidence in the Panel and Pillar (MW2-15) zone resulting in subsidence effects exceeding EIS predictions and subsidence impact (surface cracking), MCW environmental questions these conclusions. Refer SSD_5581 Schedule 3 Condition 2 and Schedule 6 Condition 9. 2018, 2019 and 2020 Annual Reviews include summaries of subsidence monitoring assessed against predictions and specialist subsidence review reports (Strata²) are included as an appendix.		
	(ii) Built Features Management Plan which has been prepared in consultation with Resources Regulator, to manage the potential subsidence impacts of the proposed underground workings on built features, and which: - has been prepared in consultation with the owner/s of potentially affected feature/s; - addresses in appropriate detail all items of key public infrastructure and other public infrastructure and all classes of other built features; - recommends appropriate pre-mining mitigation measures to reduce subsidence impacts; and - recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate predicted impacts on potentially affected built features in a timely manner;	- Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) - Public Safety Management Plan Splitting and Quartering Plan (ML 1331) EP-PSMP (Centennial Airly, May 2018) - Land Management Plan Splitting and Quartering Plan (ML 1331) EP-LMP (Centennial Airly, May 2018)	The Splitting and Quartering Extraction Plan (May 2018) and the Panel and Pillar Extraction Plan (2019), which were approved by DPIE following consultation with stakeholders including NPWS and the IEP, identifies that a Built Features Management Plan is not applicable as there are no significant built features and minor features will be managed within the Land Management Plan; consequently, this condition was not triggered.	Not triggered	
	(iii) Water Management Plan which has been prepared in consultation with OEH and DI L&W, which provides for the management of potential impacts and/or environmental consequences of the proposed underground workings on watercourses and aquifers, including: - detailed baseline data on: - surface water flows and quality in Gap and Genowlan Creeks; - surface water flows in Airly village spring and the Grotto; - groundwater levels, yield and quality in the region; - surface and groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse impacts on water resources or water quality; - a surface water monitoring program to monitor and report on: - stream flows and quality; - stream and riparian vegetation health; - channel and bank stability; - a groundwater monitoring program to monitor and report on: - springs, their discharge quantity and quality, as well as any associated groundwater dependent ecosystems;	- Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) - Water Management Plan (GHD/Centennial Airly, July 2017) - Refer Incident Investigation Report (Centennial Airly, December 2020)	- The Airly Mine Water Management Plan was prepared by GHD and approved by DPIE in 2017; revised and approved in 2018; and revised and submitted for approval by DPIE in 2019. - The 2017 Airly Mine Water Management Plan was provided in Volume 2 of the Splitting and Quartering Extraction Plan, which was approved by DPIE in 2018. - A high level review of the most recently approved Airly Mine Water Management Plan, for this IEA, identified that the requirements of SSD_5581 Schedule 3 condition 7(i) (iii) have been generally addressed. It is noted that there is no flow monitoring of the Airly Village Spring and The Grotto currently undertaken; and that the approved 2018 Water Management Plan states that monitoring of Genowlan Creek and Genowlan Creek 2 in the future is considered sufficient to identify any potential impacts to flows in the creek as a result of mining operation. - The approved Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) includes adaptive management practices. - The approved Panel and Pillar Extraction Plan (ML 13331) (Centennial Airly, 2019) includes adaptive management practices which have been implemented following the exceedance of EIS subsidence effect predictions and subsidence impact (surface cracking). Refer Incident Investigation Report (Centennial Airly, December 2020) and SSD_5581 Schedule 6 Condition 7 in this Table.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	- groundwater inflows to the underground mining operations; - the height of groundwater depressurization; - background changes in groundwater yield/quality against mine-induced changes, in particular, on groundwater bore users; - permeability, hydraulic gradient, flow direction and connectivity of the deep and shallow groundwater aquifers; • a description of any adaptive management practices implemented to guide future mining activities in the event of greater than predicted impacts on aquatic habitat; • a program to validate the surface water and groundwater models for the development, and compare monitoring results with modelled predictions; and • a plan to respond to any exceedances of the surface water and groundwater assessment criteria.				
	(iv) Biodiversity Management Plan which has been prepared in consultation with DoEE and BCD, which provides for the management of potential impacts and/or environmental consequences of the proposed first and second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species populations and their habitats, endangered ecological communities and groundwater dependent ecosystems including, but not limited to: • Pultenaea sp. Genowlan Point; • Genowlan Point Allocasuarina nana Heathland; • Prostanthera stricta (Mount Vincent Mint-bush); and • Eucalyptus cannonii (Capertee Stringybark);	• Biodiversity Management Plan: Splitting and Quartering Extraction Plan (ML 1331) EP-BMP (Centennial Airly, May 2018)	• The 2018 Biodiversity Management Plan Extraction Plan for Splitting and Quartering (ML1331) was approved as part of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018) • A high level review of 2018 Biodiversity Management Plan EP-BMP, for this IEA, identified that the requirements of SSD_5581 Schedule 3 condition 7(i) (iv) have been addressed. • The 2018 Biodiversity Management Plan EP-BMP states that within the 2018 Splitting and Quartering Extraction Plan (ML 1331) area: ○ There are no endangered ecological communities. ○ Pultenaea sp. Genowlan Point and Genowlan Point Allocasuarina nana Heathland do not occur. ○ Although there are no Groundwater Dependent Ecosystems, there are three 'Facultative Ecosystems', due to the communities not being entirely dependent on groundwater, but potentially having some reliance on groundwater on a seasonal basis or only during extended drought periods.	Compliant	
	(v) Land Management Plan which has been prepared in consultation with the IEP, Resources Regulator, BCD and any affected public authorities, to manage the potential impacts and/or environmental consequences of the proposed underground workings on land in general, with a specific focus on cliffs, pagoda formations, steep slopes and gorges;	• Land Management Plan Splitting and Quartering Plan (ML 1331) EP-LMP (Centennial Airly, May 2018)	• The 2018 Land Management Plan EP-LMP was approved as part of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). • A high level review of 2018 Land Management Plan EP-LMP, for this IEA, identified that the requirements of SSD_5581 Schedule 3 condition 7(i) (v) have been addressed.	Compliant	
	(vi) Heritage Management Plan which has been prepared in consultation with Heritage Division and relevant Aboriginal stakeholders, to manage the potential environmental consequences of the proposed workings on Aboriginal and historic heritage and includes all requirements under condition 19 of Schedule 4;	• Historic Heritage Management Plan EP-HHMP for the Airly Splitting and Quartering Extraction Plan (ML 1331) (RPS, May 2018) • Aboriginal Cultural Heritage Management Plan (EP-ACHMP) for the Airly Splitting and Quartering Extraction Plan (ML1331) (RPS< May 2018	• The Historic Heritage Management Plan EP-HHMP and Aboriginal Cultural Heritage Management Plan (EP-ACHMP) were approved as part of the as part of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). • A high level review of Historic Heritage Management Plan EP-HHMP and Aboriginal Cultural Heritage Management Plan (EP-ACHMP), for this IEA, identified that the requirements of SSD_5581 Schedule 3 condition 7(i) (vi) have been addressed.	Compliant	
	(vii) Public Safety Management Plan which has been prepared in consultation with the IEP, Resources Regulator and BCD to ensure public safety and manage access on the site;	• Public Safety Management Plan Splitting and Quartering Plan (ML 1331) EP-PSMP (Centennial Airly, May 2018)	• The Public Safety Management Plan Splitting and Quartering Plan (ML 1331) EP-PSMP was approved as part of the as part of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). • A high level review of Public Safety Management Plan Splitting and Quartering Plan (ML 1331) EP-PSMP for this IEA, identified that the requirements of SSD_5581 Schedule 3 condition 7(i) (vii) have been addressed.	Compliant	
	(viii) include Trigger Action Response Plans, or equivalent, to prevent greater than predicted subsidence impacts and environmental consequences that may result from mining subsidence;	• Airly Mine Splitting and Quartering Extraction Plan (ML1331) – Common Appendix 1: Master Trigger Action Response Plan (MASTER TARP)	• Trigger Action Response Plans (TARPs) have been developed for each of the management plans which form part of the Splitting and Quartering Extraction Plan and the Panel and Pillar Extraction Plan to reflect the commitments / predictions and performance criteria of environmental and related aspects within those management plans. • These individual TARPs are summarised and/or referenced into the Extraction Plan Master TARP (Appendix 1). • The Master TARP provides a process of tiered and escalating trigger levels for contingency measures should subsidence and impacts be greater than predicted/approved. • The Master TARP includes detailed measures for underground mining controls to monitor that mining geometry is formed in accordance with the approved design specifications that determine the predicted subsidence movements and impacts.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation				
			Following the exceedance of EIS subsidence effect predictions and subsidence impact (surface cracking) the Panel and Pillar Extraction Plan TARP was triggered. Refer SSD_5581 Schedule 3 Condition 2 (this Table).						
	(ix) include a contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 1 and 2, or where any such exceedance appears likely;	Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018)	- The Splitting and Quartering Extraction Plan (Section 3.7.2) requires monitoring and evaluation against performance measures and associated indicators in the Master TARP and supporting management plans. Where performance indicators indicate increasing levels of risk (conditions green, amber then red being exceeded), escalating adaptive management measures are engaged in accordance with the TARP. - The Panel and Pillar Extraction Plan (Section 3.4.2) requires monitoring and evaluation against performance measures and associated indicators in the Master TARP and supporting management plans. Where performance indicators indicate increasing levels of risk (conditions green, amber then red being exceeded), escalating adaptive management measures are engaged in accordance with the TARP. Following the exceedance of EIS subsidence effect predictions and subsidence impact (surface cracking), the Panel and Pillar Extraction Plan TARP was triggered. Refer SSD_5581 Schedule 3 Condition 2 (this Table).	Compliant					
	(x) proposes appropriate revisions to the Rehabilitation Management Plan required under Condition 27 in Schedule 4; and	Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018)	- The Splitting and Quartering Extraction Plan (Section 3.7.3) references the current Mining Operations Plan and states that a response strategy will be adopted if a significant impact is detected as a result of mining activities within the Extraction Plan area. - The Panel and Pillar Extraction Plan (Section 3.4.2) states that a response strategy will be adopted if a significant impact is detected as a result of mining activities within the Extraction Plan area as triggered by the TARP.	Compliant					
	(xi) include a program to collect sufficient baseline data for future Extraction Plans.	Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018)	- A baseline monitoring strategy and program is detailed in Section 5 of the Splitting and Quartering Extraction Plan (ML 13331). - A baseline monitoring strategy and program is detailed in Section 5 of the Panel and Pillar Extraction Plan (ML 13331).	Compliant					
	The Applicant must implement the approved Extraction Plan for the development. Notes: - This condition does not apply to first or second workings which are covered by an Extraction Plan or Subsidence Management Plan approved, or under assessment as at the date of this Development Consent. - In accordance with condition 4 in Schedule 6, the preparation and implementation of Extraction Plans may be staged, with each plan covering a defined area of underground workings. In addition, these plans are only required to contain management plans that are relevant to the specific underground workings that are being carried out. - Due to the sensitive and rugged terrain of the Mugii Murum-ban State Conservation Area, the Applicant may propose remote subsidence monitoring techniques.	121 and 200 Panel Subsidence Monitoring Outcomes (RDP Consulting Group Pty Ltd, 26 March 2018) - Reports of Inspection of Production Areas Made During Shift Panel 201 and 207, dated 23, 26, 27-29 March 2018 - Reports of Inspection of Production Areas Made During Shift Panel 400, dated 1- 31 August, and 1 September 2018, and 1,2,4,5 and 8 February 2021 - Stress cell data (displacement rate v face position, pressure change and rate of change for main gate 8 (dated 8 January 2021) - Tell Tale Analysis Report for Tell Tails within 205,100, 103, 200, 205, 206, 207, 400, 401, MG1, MG2, MG3, MG4, MG5, MG6, MG7, MG8, MG9 and TG1, from November 2018 to January 2021 - Estimation of Surface Impacts due to the Extraction of Miniwalls 2 to 15 (Strata², March 2019) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Extraction Plan Implementation: - Monitoring being undertaken includes: - As-built survey with checks against design - Weekly statutory inspections of pillar conditions (selection of reports were sighted) - Subsidence monitoring outcomes “tell tale” roof monitoring system and reports - A demonstration of monitoring of the surface environment using high definition LiDAR and high resolution 3D photogrammetry comparing successive sets of data has enabled assessment of rock falls and movement was provided during the site inspection. - Targeted surface inspections, and when triggered specific surface inspections are being carried out e.g., for 2020 surface crack incidents that were notified to the DPIE. - Environmental monitoring associated with broader monitoring programs has been undertaken and is summarised within specialist reports included in the 2018, 2019 and 2020 Annual Reviews. Specialist reports include: - Water monitoring (GHD) - Stygofauna (GHD) - Aquatic ecology (GHD) - Watercourse stability (GHD) - Flora and fauna (RPS) - Subsidence (Strata²) - The 2018, 2019 (Section 6) and 2020 (Section 8) Annual Reviews included an assessment of mine workings against Extraction Plan mine design. - Triggering of the Panel and Pillar Extraction Plan TARP when subsidence effects exceeded EIS predictions and subsidence impact (surface cracking). - MCW Environmental auditors are not subsidence specialists and although offered by Centennial Airly, the site inspection did not include an underground site visit. Verification of the implementation of this condition was limited to review of the identified documents. No other independent verification of the activities or results was conducted by the auditors.	Compliant					
PAYMENT OF REASONABLE COSTS									
3-8	The Applicant must pay all reasonable costs incurred by the Department to engage suitably qualified, experienced and independent experts to review the adequacy of any aspect of an Extraction Plan.		Centennial Airly reported that an invoice for costs incurred by DPIE to review the Extraction Plan had not been received during the period of the IEA.	Not Triggered					
SCHEDULE 4									
ENVIRONMENTAL PERFORMANCE CONDITIONS – GENERAL									
NOISE									
4-1	Hours of Operation The Applicant must comply with the restrictions to operating hours in Table 3. Table 3: Operating Hours <table><tr><th>Activity</th><th>Operating Hours</th></tr><tr><td></td><td></td></tr></table>	Activity	Operating Hours			- Western Region Noise Management Plan (Centennial Coal, June 2018) - Letter to Centennial Airly approving Western Region Noise Management Plan (Rev3) (DPIE, September 2018) - ECD (Centennial Airly, 2018-2021)	- The Environmental Coordinator advised that there was no construction and no exploration borehole drilling conducted during the period of the IEA. - No evidence of construction during the site inspection. - No complaints had been recorded regarding out of operating hours noise from construction, exploration monitoring and borehole drilling. - No new infrastructure was observed during the site inspection.	Not Triggered	
Activity	Operating Hours								

No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation																									
	- Construction - Exploration monitoring and borehole drilling	7am to 6pm Monday to Friday and 8am to 1pm Saturdays.	Complaint Register (Centennial Airly, 2018 - 2021)																												
4-2	Noise Criteria The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 4. Table 4: Noise Criteria dB(A) <table><tr><th>Land</th><th>Day L_{Aeq}(15min)</th><th>Evening L_{Aeq}(15min)</th><th>Night L_{Aeq}(15min)</th><th>Night L_A(max)</th></tr><tr><td>Any residence on privately-owned land</td><td>35</td><td>35</td><td>35</td><td>52</td></tr><tr><td colspan="2"></td><td colspan="2">L_{Aeq}(period)</td><td></td></tr><tr><td>R17 (campground)</td><td colspan="2">50 (when in use)</td><td colspan="2">N/A</td></tr><tr><td>R18 (Nissen Hut)</td><td colspan="2">50 (when in use)</td><td colspan="2">N/A</td></tr></table> <i>Note: To interpret the locations referred to in Table 4 see the applicable figure(s) in Appendix 7.</i> Noise generated by the development is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 8 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria. However, these criteria do not apply if the Applicant has a negotiated agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.		Land	Day L _{Aeq} (15min)	Evening L _{Aeq} (15min)	Night L _{Aeq} (15min)	Night L _A (max)	Any residence on privately-owned land	35	35	35	52			L _{Aeq} (period)			R17 (campground)	50 (when in use)		N/A		R18 (Nissen Hut)	50 (when in use)		N/A		- Airly Mine, Annual Environmental Noise Monitoring 2018 (Global Acoustics Pty Ltd, February 2019) - Airly Mine, Annual Noise Monitoring December 2019 (SLR, January 2020) - Airly Mine, Annual Environmental Noise Monitoring 2020 (SLR, January 2021) - Site observations - ECD (Centennial Airly, 2018-2021) - Complaint Register (Centennial Airly, 2018 - 2021) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- In 2018 annual attended noise monitoring was conducted by Global Acoustics in December 2018 at: - Location C – close to the rail loop. - ANM2 - south of surface operations and nearby to an identified sensitive receiver (isolated rural residence). - ANM3 – east of the pit top near Mt Airly camping grounds. - In 2019 annual attended noise monitoring was conducted by SLR in December 2019 at: - ANM1 ^{Note} – close to the rail loop. - ANM2 – south of the pit top and representative of two sensitive receptors. - ANM3 – east of the pit top near Mt Airly camping grounds - In 2020 annual attended noise monitoring was conducted by SLR in November 2020 at: - ANM1 ^{Note} – close to the rail loop. - ANM2 – south of the pit top and representative of two sensitive receptors. - ANM3 – east of the pit top near Mt Airly camping grounds ^{Note} The 2019 and 2020 Annual Reviews report that Location ANM1 was unable to be accessed due to restrictions with privately owned land and, to demonstrate noise compliance, a representative ANM1 location approximately 500m closer to the mine site along the same receptor trajectory, was used to conservatively infer compliance at receptors A2 – A5 (inclusive). The operational noise assessment undertaken by SLR in November 2020, estimated L_{Aeq}(15min) noise contribution at ANM1 (close to the rail loop) at 35, which is slightly higher than in 2019 (33) and equal to the night L_{Aeq}(15min) noise criteria i.e. there was no exceedance of the noise criteria generated by Centennial Airly at the representative ANM1 location (which is 500m closer to the Airly mine than the actual ANM1), during the period of the IEA. - No complaints about pit top infrastructure and operations were received during the period of the IEA. One complaint was received in April 2020 alleging that a train travelling through Capertee Village was speeding and caused excessive noise and vibration of their house. The incident was reported in the Monthly Environmental Monitoring Report (April 2020) and in the Compliant Register. Corrective actions included notifying the rail transport company and reiterating the importance of trains travelling at appropriate/reduced speeds through Capertee; a follow up phone call provided to the caller on the same evening to advise of the implemented actions; review of 'black box' data from the train in question didn't reveal any abnormalities or exceedances of speed through Capertee; and an additional follow up phone call to the caller to discuss the review findings, implemented actions, and to talk through the possible causes of amplified noise and vibration. - No significant noise from Airly mining activities was heard during the IEA site inspection.	Compliant	
Land	Day L _{Aeq} (15min)	Evening L _{Aeq} (15min)	Night L _{Aeq} (15min)	Night L _A (max)																											
Any residence on privately-owned land	35	35	35	52																											
		L _{Aeq} (period)																													
R17 (campground)	50 (when in use)		N/A																												
R18 (Nissen Hut)	50 (when in use)		N/A																												
4-3	Operating Conditions The Applicant must: (a) minimise the construction, road and rail noise of the development; (b) minimise the noise impacts of the development during meteorological conditions under which the noise limits in this consent do not apply (see Appendix 8); (c) carry out monitoring to determine whether the development is complying with the relevant conditions of this consent, to the satisfaction of the Secretary		- Western Region Noise Management Plan (Centennial Coal, June 2018) - Narrow Pillar Extraction Laydown and Storage Requirements (increase in heavy vehicle movements) (Centennial Coal, June 2018) - Airly Mine, Annual Environmental Noise Monitoring 2018 (Global Acoustics Pty Ltd, February 2019) - Airly Mine, Annual Noise Monitoring December 2019 (SLR, January 2020) - Airly Mine, Annual Environmental Noise Monitoring 2020 (SLR, January 2021)	a) No construction has been undertaken during the period of this IEA - Road noise is minimised through the application of speed limits on mine owned roads, as well as other mitigation measures documented in Appendix A of the Western Region Noise Management Plan including maintaining all vehicles to manufacturer's specifications; operating mobile plant in a quiet and efficient manner and switching off vehicles when not in use. Rail noise is minimised through the application of slow speed limits. A document outlining traffic and heavy vehicle management requirements in preparation of equipment laydown and storage areas in 2018 was also sighted. b) There was no exceedance of the SD_5581 noise criteria generated by Centennial Airly, as reported in annual noise monitoring reports during the period of the IEA. The annual noise reports assessed meteorological conditions during each survey and considered whether noise criteria applied. c) Centennial Airly conducted annual noise monitoring at three locations. The monitoring indicated that noise levels complied with noise criteria during attended noise monitoring.	Compliant																										
4-4	Noise Management Plan Prior to carrying out any development under this consent, unless the Secretary agrees otherwise, the Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the EPA; (b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions of this consent;		- Western Region Noise Management Plan (Centennial Coal, June 2018) - Letter to Centennial Airly approving Western Region Noise Management Plan (Rev3) (DPIE, September 2018)	- Centennial Airly has a Western Region Noise Management Plan (with site-specific Airly appendix) that addresses the requirements of SSD_5581 Schedule 4 Condition 4. - A letter from DPIE (September 2018) approving the plan was sighted. - The plan includes generic and site specific (Appendix A) noise controls, short and long term monitoring, and evidence of consultation with the EPA (Appendix H). - Annual monitoring at locations described in the Noise Management Plan and SSD_5581 Schedule Condition 3 has been undertaken.	Compliant																										

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation																				
	(c) include a monitoring program that evaluates and reports on: -compliance against the noise criteria in this consent; and -compliance with the noise operating conditions in condition 3 above. The Applicant Must implement the approved Noise Management Plan for the development.																								
AIR QUALITY																									
4-5	Air Quality Criteria The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 5 at any residence on privately-owned land. Table 5: Air quality criteria <table><tr><th>Pollutant</th><th>Averaging Period</th><th colspan="2">Criterion</th></tr><tr><td>Particulate matter < 10 µm (PM₁₀)</td><td>Annual</td><td colspan="2">^{a,d} 25 µg/m³</td></tr><tr><td>Particulate matter < 10 µm (PM₁₀)</td><td>24 hour</td><td colspan="2">^a 50 µg/m³</td></tr><tr><td>Total suspended particulate (TSP)</td><td>Annual</td><td colspan="2">^{a,d} 90 µg/m³</td></tr><tr><td>^c Deposited Dust</td><td>Annual</td><td>^b 2 g/m²/ month</td><td>^{a,d} 4 g/m²/ month</td></tr></table> <i>Notes to Table 5:</i> <i>a Cumulative impact (ie increase in concentrations due to the development plus background concentrations due to all other sources).</i> <i>b Incremental impact (ie increase in concentrations due to the development alone, with zero allowable exceedances of the criteria over the life of the development).</i> <i>c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.</i> <i>d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.</i> <i>e "Reasonable and feasible avoidance measures" includes, but is not limited to, the operational requirements in conditions 6 and 7 to develop and implement an air quality management system that ensures operational responses to the risks of exceedance of the criteria.</i>	Pollutant	Averaging Period	Criterion		Particulate matter < 10 µm (PM ₁₀)	Annual	^{a,d} 25 µg/m ³		Particulate matter < 10 µm (PM ₁₀)	24 hour	^a 50 µg/m ³		Total suspended particulate (TSP)	Annual	^{a,d} 90 µg/m ³		^c Deposited Dust	Annual	^b 2 g/m ² / month	^{a,d} 4 g/m ² / month	- Western Region Air Quality and Greenhouse Management Plan (Centennial Airly, June 2018) - Letter to Centennial Airly Approval Environmental Management Plans (DPIE, 4 July 2018) - ALS Accreditation no. 825 (NATA, 2018) - ALS Accreditation no. 825 (NATA, 2020) - Dust Deposition Gauge Audit (ALS, 3 April 2019) - Dust Deposition Gauge Audit (ALS, 5 February 2018) - Dust Deposition Gauge Audit (ALS, 12 February 2019) - Dust Deposition Gauge Audit (ALS, 5 February 2019) - Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 4 June 2018) - Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 3 June 2019) - Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 1 July 2020) - Certificate of Analysis HVAS (ALS, 27 January 2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - ECD (2018 -2021) - Community Complaints Register (2018 – 2021)	- No community complaints related to air quality were received during the period of the IEA. - Key measures to manage and mitigate particulate matter emissions that are specified in the Air Quality and Greenhouse Management Plan and implemented at Centennial Airly include: - Speed limit signage on unsealed roads, water sprays on roads and sprinkler system on the coal stockpile. - Use of a train loader which reportedly produces a low and even profile of coal on the surface of the wagon and reduces spillages. - The site also has the following mitigation measures: - Vehicle speed restrictions (speed signage observed during site inspection). - The main access road is sealed. - Coal from Airly mine reportedly has a high inherent moisture content. - Implementation of an underground dust suppression system involving the use of water sprays on coal cutting machinery and rubber conveyor belts. - To assess particulate matter at residences dust monitoring is undertaken at four dust deposition gauges, collected monthly, and located within and around the mining operations at: - DM1 located south of the operations and nearby sensitive receiver A7; - DM2 located east of the operations near sensitive receiver A1; - DM3 located close to mine operations along Torbane Rd and used to extrapolate compliance for all sites to the west of the operation; and - DM4 is located on mine-owned land to the southwest of the surface facilities. - DM1, DM2, DM3 and DM4 correspond to EPL monitoring points MP3, MP4, MP5 and MP6 respectively (refer Figure 7 in Monthly Environmental Monitoring Reports). - ALS has undertaken sampling and analysis of the dust deposition gauges. ALS are NATA accredited (accreditation no. 825). The results were reported by Centennial Airly in Monthly Environmental Monitoring Reports and the Airly Mine Annual Reviews. - Centennial Airly has conducted monthly dust deposition gauge monitoring at DG1, DG2, DG3 and DG4 during the period of the IEA and there has been no exceedance of SSD_5581 Schedule 4 Condition 5 Particulate matter < 10µm (PM₁₀) air quality criteria recorded in Monthly Environmental Monitoring Reports (2018 -2021) and /or in 2018, 2019 and 2020 Annual Reviews. Monthly reports in January 2019 and January 2020 were influenced by the external factors of regional dust storms, and severe bushfire smoke. - A selection of the original ALS Certificates of Analysis were sighted by the auditors to confirm consistency with the reported results. The Certificates of Analysis indicate that approved EPA methods for the sampling and analysis of air pollutants in New South Wales are used, with specific reference to AS 3580.10.1 for depositional dust. - Audits have been undertaken by ALS of the dust deposition gauges which report when monitoring locations are non-compliant in accordance with AS 3580.1.1 with respect to clear sky angle and/or unrestricted air flow and/or dripline of trees (e.g., Dust Deposition Gauge Audit on 5 February 2018 reports that DM1 and DM2 were non-compliant and in the Dust Deposition Gauge Audit on 3 April 2019, DG1, DG2 and DG3 were compliant. - Centennial Airly did not conduct HVAS monitoring and were unable to measure the annual average and 24 hour average air quality criteria for Particulate Matter <10µm (PM₁₀) or the annual average air quality criterion for Total Suspended Particulates in 2018, 2019 and 2020. - The Western Region Air Quality and Greenhouse Management Plan requires that Airly install a High Volume Air Sampler (HVAS) and the 2018 IEA included a recommendation to progress negotiations with regulators and relevant landowner to establish a HVAS monitoring site. In the 2019 Annual Review a non-compliance was reported of a failure to commission the HVAS by 30 June 2019. The HVAS would assess compliance with the annual average and 24 hour average air quality criteria for Particulate Matter <10µm (PM₁₀) and the annual average air quality criterion for TSP. Following resolution of issues regarding landholder access and electricity supply, sampling and reporting of PM₁₀ and TSP commenced on 1 January 2021. The HVAS was sighted during the site inspection. - Although dust deposition gauge monitoring indicates that depositional dust results recorded during the period of the IEA were below the air quality criteria, as there was no HVAS monitoring of annual PM₁₀ or TSP in 2018, 2019 and part of 2020, this condition was assessed as Non-compliant. As the HVAS was commissioned in 2020, no further recommendations have been made.	Non-compliant (NC-4: No HVAS monitoring of annual PM ₁₀ or TSP in 2018, 2019 and 2020)	As the HVAS was commissioned in on 1 January 2021, no further recommendations have been made.
Pollutant	Averaging Period	Criterion																							
Particulate matter < 10 µm (PM ₁₀)	Annual	^{a,d} 25 µg/m ³																							
Particulate matter < 10 µm (PM ₁₀)	24 hour	^a 50 µg/m ³																							
Total suspended particulate (TSP)	Annual	^{a,d} 90 µg/m ³																							
^c Deposited Dust	Annual	^b 2 g/m ² / month	^{a,d} 4 g/m ² / month																						
4-6	Operating Conditions The Applicant must: (a) implement all reasonable and feasible measures to minimise the:	- Compliance Database (PULSE) 22 January 2021 screenshot - Water cart – dust suppression invoices (2018 -2021) - Site observations.	a) No odour related complaints had been received during the period of the IEA and the auditors did not observe odour issues during the site inspection. - The Centennial Airly Compliance Database (PULSE) triggers actions for the Environment and Community Coordinator to assess if speed limits are in place and if the water cart is operational, with responses sighted for each month (July 2020 to January 2021)	Compliant																					

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	• odour, fume and dust emissions of the development; and • release of greenhouse gas emissions from the development; (b) minimise any visible air pollution generated by the development; (c) minimise the surface disturbance of the site generated by the development; and (d) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note d to Table 5 above), to the satisfaction of the Secretary.		• Measures that were implemented to manage and mitigate dust emissions are described in SSD_5581 Schedule 4 condition 5. • The most significant measure implemented to manage and mitigate the release of greenhouse gas emissions was the construction in 2019 and commissioning of a 2MW solar plant (DA033/19). In addition, Centennial Airly: ○ Track energy demand (electricity usage, diesel usage) and greenhouse gas emissions per tonne of ROM coal mined. ○ Regularly maintain plant and equipment for optimal operating conditions and fuel efficiency (PULSE Mining System). • No odour, fume or dust emissions were observed during the site inspection. • b) Measures being implemented for minimising visible air pollution and minimising dust emissions are provided in described in SSD_5581 Schedule 4 condition 5. • c) The 2019 Annual Review reported that the surface disturbance footprint was increased by 6.2ha to 54.4ha to accommodate the Solar Farm on site; no land was under active rehabilitation; and no land had completed rehabilitation. • d) Measures being implemented to minimise air quality impacts during adverse meteorological conditions include the use of water carts to dampen trafficable areas of unsealed roads and the reported use of water cannons/water sprays on coal stockpiles during hot windy weather.		
4-7	Air Quality Management Plan Prior to carrying out any development under this consent, unless the Secretary agrees otherwise, the Applicant must prepare an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the EPA; (b) describe all reasonable and feasible measures which would be implemented to ensure compliance with the air quality criteria and operating conditions of this consent; (c) describe the air quality management system in detail; (d) include an air quality monitoring program that: • uses monitors to evaluate the performance of the development against the air quality criteria in this consent; • adequately supports the air quality management system; • evaluates and reports on: -the effectiveness of the air quality management system; and -compliance with the air quality criteria and operating conditions in condition 6 above; • defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents. The Applicant must implement the approved Air Quality Management Plan for the development	• Western Region Air Quality and Greenhouse Management Plan (Centennial Airly, June 2018) • Letter to Centennial Airly Approval Environmental Management Plans (DPIE, 4 July 2018) • Monthly Environmental Monitoring Reports (Centennial Airly, 2018 – 2021)	• Centennial Airly have an approved Air Quality and Greenhouse Gas Management Plan. • A high level review of the Air Quality and Greenhouse Gas Management Plan identified that the requirements of SSD_5581 Schedule 4 condition 7 have been addressed: a) EPA consultation was included in consultation log (Appendix I). b) Sections 3.1 and 3.2 of Air Quality and Greenhouse Gas Management Plan document air quality and greenhouse gas management and mitigation measures common to, and being implemented across, all of Centennial's western operations covered by this plan. Air quality and greenhouse gas management and mitigation measures specific to the Airly operation are documented in Appendix A. c) The Air Quality and Greenhouse Gas Management Plan documents the air quality management system including Environment Management Strategy integration; site operations; approvals, licensing and performance criteria; existing environment; management measures; monitoring program; contingency measures; incidents, complaints and exceedances; roles and responsibilities; training; and management plan review. d) The draft revised Air Quality and Greenhouse Gas Management Plan documents an air quality monitoring program for Centennial Airly in Appendix A as follows: ○ A short term monitoring program as per the current monitoring program which includes four dust deposition gauges, collected monthly, and located within and around the mining operations at Locations DG1, DG2, DG3 and DG4 as described in condition 4.5 above; and ○ A long term monitoring program which will continue to include four dust deposition gauges, collected monthly, and located within and around the mining operations (although the locations of some of these gauges are proposed to change); and long term monitoring program including the HVAS to monitor for PM10 and TSP. ○ Meteorological monitoring is also undertaken continuously at the automatic weather station. ○ Implementation of the air quality monitoring program is provided in the summary of monitoring results in the 2018, 2019 and 2020 Annual Reviews and Monthly Environmental Monitoring Reports (2018 -2021); and self-reported non-compliance with commissioning of the HVAS in the 2019 Annual Review.	Complaint	
4-8	METEOROLOGICAL MONITORING Prior to commencement of development under this consent and for the life of the development, the Applicant must ensure that there is a meteorological station in the vicinity of the site that: (a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy; and (b) is capable of continuous real-time measurement of atmospheric stability category determined by the sigma theta method in accordance with the NSW Industrial Noise Policy.	• 6-month hydrographics certificate (ALS, September 2019) • 12-month hydrographics certificate (ALS, April 2019) • 6-month hydrographics certificate (ALS, September 2020) • 12-month hydrographics certificate (ALS, March 2020)	• The 6-month and 12-month automatic weather station verification certificate states that the operation and maintenance of the weather station conforms to AS3508.14, rather than the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy. Consequently, a recommendation has been made to report on the 6-month and 12-month verification certificate, that the weather station has been assessed against the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy and capable of continuous real-time measurement of atmospheric stability category determined by the sigma theta method in accordance with the NSW Industrial Noise Policy.	Compliant (C-2)	C-2 Recommendation 6: Include on the 6-month and 12-month weather station verification report, that the weather station has been assessed against the Approved Methods for Sampling of Air Pollutants in New South Wales guideline and the NSW Industrial Noise Policy and is capable of continuous real-time measurement of

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
					atmospheric stability category determined by the sigma theta method in accordance with the NSW Industrial Noise Policy.
WATER					
4-9	Water Supply The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations on site to match its available water supply. Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain the necessary water licences for the development.	- Water Management Plan (Centennial Airly, July 2018) - Airly Mine, Water and Salt Balance Assessment (GHD, June 2017) - Certificate of Title WAL24386 (Water Access Licence) - Statement of Supply Approval 10WA112537 Water Supply Works (Water Division, February 2016) - Certificate of Title WAL24386 (Water Access Licence) - Airly Mine Annual Review January 2017 to December 2017 - Statement of Environmental Effects SSD_5581 Modification 2 (Centennial Airly, April 2019) - Development Consent for Modification 2 SSD_5581 (DPIE, July 2019) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Water supply security is discussed in Section 3.5 of the Water Management Plan using data from the water balance assessment. Water supply to meet site operational demand is sourced from surface water stored on site (including harvested clean and dirty water runoff) and groundwater inflows into the underground workings in future, with groundwater extraction from a production bore used to make up any shortfalls. - The Airly Mine Water Management Plan states that total average annual volume modelled to be extracted from the production bore was predicted by the water balance model to be greatest in 2019 at 80 ML/year, as groundwater inflows into the underground workings were relatively low and modelled water supply from surface water storages was insufficient to meet the water demands for mining activities. This value was estimated to vary between 23 ML/year (10th percentile) and 128 ML/year (90th percentile). The maximum predicted extraction from the production bore modelled was 150 ML/year, which coincided with the lowest rainfall conditions modelled, minimal groundwater inflows into the mine and maximum water demands for mining activities. A total of 278 ML is licensed for extraction from the Sydney Basin North groundwater source as part of the Water Sharing Plan (WSP) for the Greater Metropolitan Region Groundwater Sources, made up of WAL 24386 (158 ML/year) and WAL 36565 (120 ML/year). WAL 24386 licenses the take of water from the production bore (water supply works approval 10WA112537), which is used to supplement water for use in mining activities. WAL 36565 licenses the extraction of water from the underground workings to the 109 ML Dirty Water Dam. - The 2018, 2019 and 2020 Annual Water Monitoring Reports (included as appendices to the Annual Reviews) report that water extracted from the two bores was substantially less than the annual entitlement at: 2018: 65ML 2019: 16ML 2020: 8ML - In July 2019, DPIE approved SSD_5581 Modification 2 to receive up to 170ML/year from Charbon Colliery using rail transport. 80ML of water was transported from Charbon to Centennial Airly in 2019 in accordance with SSD_5581 (as modified).	Compliant	
4-10	Water Pollution Unless an EPL authorises otherwise, the Applicant must comply with Section 120 of the POEO Act.	- Environment Protection Licence 12374 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Airly Mine Annual Reporting, 2019 Annual Water Monitoring Report (GHD, 2020) - Airly Mine Annual Reporting, 2018 Annual Water Monitoring Report (GHD, 2019) - Draft Airly Mine Annual Reporting, 2020 Annual Water Monitoring Report (GHD, 2021) - The TLO Dam Pump Operation AIR-TARP-TLO Dam V1 (Centennial Airly, 2019)	- The following improvements to the storage and handling of chemicals and hydrocarbons and consequently surface water quality since the previous IEA were identified during the pit top site inspection: - New roof over chemical storage area. - New concrete pad adjacent to chemical storage area. - New bunded diesel tanks. - New waste oil storage tank. - New diversion of water from washdown area to the oil water separator. - New four x 50,000L tanks (for high EC production bore water). - Improved pollution control facilities below the train loading area. - The capacity of the Train Loader Dam has been increased during the period of the IEA from 0.7ML capacity to approx. 3ML capacity, a new V-notch weir installed, and new electric pumps were observed during the site inspection (reportedly about to be commissioned). - Airly Mine operates under Environment Protection Licence (EPL) 12374 with three licensed monitoring points (LDPs): - LDP1 - Discharge to Airly Creek via the 35 ML Discharge Dam. - LDP2 - Discharge to Airly Creek via the 7 ML Dam. - LDP3 - Discharge to Airly Creek via the Train Loader Dam. - Concentration limits for Oil and Grease (10mg/L), pH (6.5-9.0), Total Suspended Solids (50mg/L) and Turbidity (40 nephelometric turbidity units) apply to the LDPs, and for LDP1 additional concentration limits for Arsenic, Conductivity, Copper, Nickel, Nitrogen, Phosphorus, zinc and a discharge volume limit of 100ML apply. - The 2018, 2019 and 2020 Annual Reviews and Monthly Environmental Monitoring Reports indicate that during the period of the IEA, there were no discharges from LDP1 and LDP2; and that a single discharge event was recorded for LDP3 (36kL) in January 2019 (subject to rainfall exemption under condition EPL 12374 L2.5) following a high rainfall storm event. - The TARP for the TLO (35ML) dam pump operation provides clear actions to optimise dam levels and maintain capacity. - The sediment basins (35ML Discharge Dam (LDP1), 7ML Dam (LDP2) and Train Loader Dam (LDP3) were observed to have freeboard at the time of the inspection, although calculations of the capacity of the freeboard were not undertaken. Areas of reeds were present in the 35ML Dam.	Compliant (C-3)	C-3 Recommendation 7: Reduce the sediment load and potential for surface water contamination in the area adjacent to the train loading bay sump to prevent loss of containment to the Airly Creek catchment area and potential breach of Section 120 Protection of the Environment Operations Act 1997; and assess the impact of reed growth on capacity within the 35 ML Discharge Dam and conduct corrective actions if required.

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation				
			- The capacity of the Train Loader Dam has been increased during the period of the IEA from 0.7ML capacity to approx. 3ML capacity, a new V-notch weir installed, and new electric pumps were observed during the site inspection (reportedly about to be commissioned). - The Environmental Coordinator advised that on an as needs basis, including following rainfall, the basins are pumped out to the 109ML Dirty Water Dam. Pumping requirements are generally directed through the daily operational morning meetings. A template for Environment / Community input to the daily meeting was sighted by auditors and noted to contain actual rainfall for previous and forecast for next 24 hour periods and pumping requirements. - The washdown bay in the pit top area has a dedicated collection sump connected to an oily water separator. Other surface water drains in the pit top area drain to sediment dams and the 109 ML Dirty Water Dam. In areas adjacent to the train loading bay, sediment/coal loads was observed on unsealed surfaces. - A compliance assessment for EPL 12374 is included in Appendix B of this IEA., however as there were no discharges from LDP1 and LDP2; and a single discharge event for LDP3 (36kL) in January 2019 (subject to rainfall exemption under condition EPL 12374 L2.5 following a high rainfall storm event), this condition was assessed as Compliant. - Recommendations have been made to reduce the sediment load, and potential for surface water contamination in the area adjacent to the train loading bay sump to prevent loss of containment to the Airly Creek catchment area and potential breach of Section 120 Protection of the Environment Operations Act 1997; and to assess the impact of reed growth on capacity within the 35 ML Discharge Dam.						
4-11	Compensatory Water Supply The Applicant must provide a compensatory water supply to the owner of any privately-owned land whose water supply is adversely and directly impacted (other than a negligible impact) as a result of the development, in consultation with the Water Division, and to the satisfaction of the Secretary. The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent, in quality and volume, to the loss attributed to the development. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified. If the Applicant and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution. If the Applicant is unable to provide an alternative long-term supply of water, then the Applicant must provide alternative compensation to the satisfaction of the Secretary.	- Water Management Plan (Centennial Airly, July 2018) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Airly Mine Annual Reporting, 2019 Annual Water Monitoring Report (GHD, 2020) - Airly Mine Annual Reporting, 2018 Annual Water Monitoring Report (GHD, 2019) - Draft Airly Mine Annual Reporting, 2020 Annual Water Monitoring Report (GHD, 2021) - ECD (2018 -2021) - Complain Register (2018 -2021)	- The Environmental Coordinator advised that there had been no impacts to privately-owned groundwater or surface water supplies. - The Water Management Plan includes a criteria ‘no complaints regarding groundwater access’ (Section 6.2.4) and TARPS are included in Appendix E. There were no incidents or complaints recorded during the period of the IEA related to impacts to privately owned water supplies, hence no requirement to provide compensatory water supply was reported or evident.	Compliant					
4-12	Water Management Performance Measures The Applicant must comply with the performance measures in Table 6 to the satisfaction of the Secretary. Table 6: Water Management Performance Measures <table><tr><th>Feature</th><th>Performance Measure</th></tr><tr><td>Water Management – General</td><td> - Minimise the use of clean water on site - Minimise the use of the supplementary water supply from the production bore </td></tr></table>	Feature	Performance Measure	Water Management – General	- Minimise the use of clean water on site - Minimise the use of the supplementary water supply from the production bore	- Water Management Plan (Centennial Airly, July 2018) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Airly Mine Annual Reporting, 2019 Annual Water Monitoring Report (GHD, 2020) - Airly Mine Annual Reporting, 2018 Annual Water Monitoring Report (GHD, 2019) - Draft Airly Mine Annual Reporting, 2020 Annual Water Monitoring Report (GHD, 2021) - Environment and Community Coordinator inspections - SEEC Drawing references for Dams 104, 11000161-CA600 2018 Geomorphic watercourse stability monitoring report (GHD, March 2018) 2020 Watercourse stability monitoring report (GHD, February 2021) 2018 Aquatic Ecology Monitoring Stygofauna Monitoring Report (GHD, February 2019) 2020 Aquatic Ecology 2020 Annual Report (GHD 2021a)	2018, 2019 and 2020 Annual Water Monitoring Reports (included as appendices to the Annual Reviews) include time series plots of historical surface water quality results and discussion of results for samples taken (where possible) from Gap Creek and the Grotto (Genowlan Creek), Genowlan Creek 2, Airly Creek, Airly Creek Upstream and Airly Tributary, LDP1, LDP2, LDP3, 35ML Discharge Dam, 7ML Dam, Dirty Water Dam and the Train Loader Dam. The annual reports reported no non-compliances during the period of the IEA with surface water quality generally consistent with the previous year. Water quality within the 35ML Dam was within EPL 12374 concentration limits for LDP1, with the exception of EC during 2018 and 2019 and isolated, elevated results in the 35ML Dam in April 2019 (Ammonia); July 2020 (EC); and April 2020 (Zinc). As there were no discharges from the 35ML Dam subject to EPL12374 concentration limits (LDP1), these results do not represent non-compliances.	Compliant	
Feature	Performance Measure								
Water Management – General	- Minimise the use of clean water on site - Minimise the use of the supplementary water supply from the production bore								
	<table><tr><td></td><td></td></tr><tr><td>Construction and operation of linear infrastructure</td><td> Design, install and maintain erosion and sediment controls generally in accordance with the series Managing Urban Stormwater: Soils and Construction including Volume 1. </td></tr></table>			Construction and operation of linear infrastructure	Design, install and maintain erosion and sediment controls generally in accordance with the series Managing Urban Stormwater: Soils and Construction including Volume 1.		- Clean water runoff is captured via a series of diversion drains. - Water saver shower heads and half flush toilets are utilised to minimise use of clean water. - Production bore water is used as a supplementary water supply and is only used if other suitable water sources are insufficient. - The 2018 Water Management Plan (Figure 3-1) shows that production bore water is initially directed to the 109ML Dirty Water Dam before being transferred via the 35ML Dam to process water header tanks. - Water usage is tracked.	Compliant	
Construction and operation of linear infrastructure	Design, install and maintain erosion and sediment controls generally in accordance with the series Managing Urban Stormwater: Soils and Construction including Volume 1.								
			- No new linear infrastructure was reportedly constructed during the period of the IEA, consequently the construction and operation of linear infrastructure performance measures was not triggered. - Erosion and sediment controls of existing linear infrastructure include sumps, drains, sediment fences and rock check structures are subject to weekly inspection and within 24 hours following a rainfall event. - A selection of completed weekly inspection checklists, including pit top, were sighted.	Compliant					

No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation
		Volume 2A – Installation of Services and Volume 2C – Unsealed Roads - Design, install and maintain infrastructure within 40 m of watercourses generally in accordance with the Guidelines for Controlled Activities on Waterfront Land (July 2012), or its latest version - Design, install and maintain creek crossings generally in accordance with Policy and Guidelines for Fish Friendly Waterway Crossings (NSW Fisheries 2003) and Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003), or their latest versions				
	Sediment dams	Design, install and maintain the dams generally in accordance with the series Managing Urban Stormwater: Soils and Construction –Volume 1 and Volume 2E –Mines and Quarries		- A SEEC Dwg No. 11000161-CA600 assessment of Dams 1- 4 (1ML, 7ML, 35ML and 109ML) capacities against required Blue book volume identified that dam size met Blue Book Volume requirements (where triggered). - No new sediment dams were constructed during the period of the IEA. - The 109ML Dirty Water Dam, 7ML Dam, Train Loader Dam and the Settling Pond are key features of sediment management at the site. - Sediment dams are subject to weekly inspection and within 24 hours following a rainfall event (a selection of completed inspection checklists were sighted). - A full assessment against the requirements of the Blue Book was not undertaken as part of this IEA. - Refer R3 SSD_5581 Schedule 4 Condition 10.	Compliant	
	Mine water storages	- Design, install and maintain mine water storage infrastructure to ensure no unlicensed or uncontrolled discharge of mine water off-site - Minimise discharges to surface waters as far as reasonable and practicable - New on-site storages (including mine infrastructure dams, groundwater storage and treatment dams) are suitably treated to comply with a permeability standard of $< 1 \times 10^{-9} \text{m/s}$ - Achieve an improvement in the quality of water held in the 35 ML dam generally in accordance with Figure 6-7 in Appendix F of the EIS (surface water impact assessment) over the life of the mine.		- No new water storages were reportedly constructed during the period of the IEA. - A number of improvements had been implemented since the previous 2018 IEA at the TLO Dam including increase in capacity and automation of the pump system (from 0.7ML to 3ML) with newly installed electric pumps to be reportedly commissioned shortly and diesel pumps to be available as back up. - Sediment dams are subject to weekly inspection and within 24 hours following a rainfall event (a selection of completed inspection checklists were sighted). - Discharges to surface waters from mine water storages have been minimised with only one discharge event recorded from LDP3 in January 2019 (36kL) during the period of the IEA. - Time series water quality monitoring results for 35ML dam since 2010 are presented in the 2018, 2019 and 2020 Annual Water Monitoring Reports (included as appendices to the Annual Reviews) and surface water quality is reported to be similar to the previous year's quality.	Compliant	
	Water discharge to Airly Creek	No greater impacts than predicted in the EIS for water flow and quality in Airly Creek		Surface water quality in Airly Creek is monitored and reported in Annual Water Quality Monitoring reports.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement		Evidence	Findings	Compliance Status (#)	Recommendation
		- between LDP 001 and Point 4 (refer Appendix 9) - Negligible environmental consequences for water quality (ie. protection to 99% of all species in accordance with ANZECC guidelines) and flow in Airly Creek where it enters the Gardens of Stone National Park and Greater Blue Mountains World Heritage Area		- Discharges to surface waters from mine water storages have been minimised with only one discharge event recorded from LDP3 in January 2019 (36kL) during the period of the IEA. The 2019 Annual Water Quality Monitoring Report reported that it was unlikely that the discharge from LDP3 resulted in exceedances of SSGVs. - Aquatic ecology monitoring was undertaken in 2019 by GHD. GHD assessed that all parameters in Airly Creek were below trigger values with the exception of EC which was comparable with historical results.		
	Gap and Genowlan Creeks	No greater impact than predicted in the EIS for water flow and quality		- Discharges to surface waters from mine water storages have been minimised with only one discharge event recorded from LDP3 in January 2019 (36kL) during the period of the IEA. - There was no flow and limited flow in Gap Creek and Genowlan Creek in 2018; and limited flows that were responsive to rainfall events in 2019 and 2020. An assessment of surface water quality in Gap and Genowlan Creeks against SSGVs was undertaken and reported in the 2019 and 2020 Annual Water Monitoring Reports (included as appendices to the Annual Reviews). - Time series water quality monitoring results for Gap and Genowlan Creeks are presented in the 2018, 2019 and 2020 Annual Water Monitoring Reports (included as appendices to the Annual Reviews) and surface water quality is reported to be similar to pre-2018 and pre-2019 quality, respectively. - The 2019 Annual Water Quality Monitoring Report reported that it was unlikely that that the 36KL discharge from LDP3 (January 2019) resulted in exceedances of SSGVs.	Compliant	
	Emplacement of CHPP rejects	Emplacement, and/or encapsulation and/or capping to prevent or minimise the migration of pollutants due to seepage from the REA		Not applicable - the Airly operation currently does not have a coal washery or a reject emplacement area.	Not triggered	
	Chemical and petroleum storage	Chemical and hydrocarbon products to be stored in bunded areas in accordance with relevant Australian Standards		- Following submission of the 2018 Annual Review, a site inspection was undertaken by DPIE and an opportunity to improve hydrocarbon storage was identified. Centennial Airly committed to upgrading these facilities by December 2019. The 2019 Annual Review reports that one of the activities to be completed in 2020 is to "continue works in relation to the installation of approved pit top infrastructure, including: improved hydrocarbon storage area, improved diesel refuelling area, install new wash-down bay". - The following improvements to the storage and handling of chemicals and hydrocarbons and surface water management since the previous IEA were identified during the pit top site inspection: - New roof over chemical storage area. - New concrete pad adjacent to chemical storage area. - New bunded diesel tanks. - New waste oil storage tank. - New diversion of water from washdown area to the oil water separator. - New four x 50,000L tanks (for high EC production bore water). - Improved pollution control facilities below the train loading area. - The capacity of the Train Loader Dam has been increased during the period of the IEA from 0.7ML capacity to approx. 3ML capacity, a new V-notch weir installed, and new electric pumps were observed during the site inspection (reportedly about to be commissioned). - During the site inspection the following observations were made: - Staining from historic overflow from the waste oil storage area at the rear of the workshop (Photo 11). - A waste/ chemical storage area with sediment laden bunds (Photo 12). - Sediment/coal fines in road drains at the pit top area (Photo 13). 2018, 2019 and 2020 Annual Water Monitoring Reports (included as appendices to the Annual Reviews) include time series plots of historical surface water quality results and discussion of results for samples taken (where possible) from LDP1, LDP2, LDP3, 35ML Discharge Dam, 7ML Dam, 109ML Dirty Water Dam and the Train Loader Dam. The annual reports reported no non-compliances during the period of the IEA. - This condition was assessed as Compliant due to the design and management of the dirty water management system to minimise off-site water discharge, there were no discharges from the 35ML Dam at LDP1 subject to EPL 12374 concentration limits during the period of the IEA, and water quality within the 35 ML Dam was within EPL 12374 concentration limits for potential pollutants from the hydrocarbon storage area and sediment laden drains i.e., oil and grease and total suspended solids.	Compliant (C-4)	C-4 Recommendation 8 Monitor the effectiveness of recent improvements in hydrocarbon and chemical storage in the pit top area against Australian Standards and take corrective action where required; progress improvements to the storage of waste oils in the workshop; and provide capacity in bunds to contain leaks and spills and prevent bund overflow.

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	Aquatic and riparian ecosystems - Maintain or improve baseline channel stability - Develop site-specific water quality objectives in accordance with ANZECC Guidelines and Using the ANZECC Guidelines and Water Quality Objectives in NSW procedures (DECC 2006) or its latest version		- Although there has been considerable improvements in the storage of chemicals and hydrocarbons since the 2018 IEA, there remains opportunity for further improvement in mitigating the loss of containment from the waste oil storage area; improving capacity in some bunds in the pit top area; and addressing sediment/coal on an unsealed sealed area in the train loading area. - The Mine Water Management Plan requires geomorphic condition and watercourse stability monitoring to be undertaken every two years; includes performance criteria for stream health (Section 6), TARPs (Appendix E), and surface water quality trigger values have been derived by following the methodology presented by ANZECC guidelines and historical monitoring data (Section 6.1.1). - Geomorphic monitoring was undertaken in 2018 and 2020 by GHD and reported no non-compliances relating to geomorphology in the 2018 and 2020 reporting periods. - Stygofauna monitoring was undertaken by GHD in 2018 and reported “no non-compliances relating to stygofauna monitoring in the 2018 reporting period.” - Aquatic ecology monitoring was undertaken by GHD in 2020 and reported “There were no impacts to water or sediment quality in 2020 that were attributable to Airly Mine, due to discharges to Airly Creek, or undermining of the Gap Creek headwaters. Impacts to water quality observed in Airly Creek, Torbane Creek and Dog Trap Creek were instead indicative of historical land clearing, the agricultural landuse in the catchments, and the influence of saline groundwater from marine-deposited geology on Airly Creek. In contrast, Genowlan and Gap Creeks exhibited water and sediment quality that is indicative of their location in a densely forested catchment, and at a higher elevation.” and “As far as can be determined, given the confounding influence of the drought, macroinvertebrate community condition appears to be unaffected by Airly Mine operations. This is to be expected given the small volume and infrequency of discharges from Airly Mine LDPs to date (including no discharges in 2020), and the lack of impacts to flows in Gap Creek due to undermining (GHD 2021).”	Compliant	
4-13	Water Management Plan Prior to carrying out any development under this consent, unless the Secretary agrees otherwise, the Applicant must prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the DoEE, EPA and the Water Division, by suitably qualified and experienced person/s whose appointment has been approved by the Secretary; (b) include detailed performance criteria and describe measures to ensure that the Applicant complies with the Water Management Performance Measures (see Table 6); (c) in addition to the standard requirements for management plans (see condition 3 of Schedule 6), this plan must include a: (i) Site Water Balance, that: - includes details of: -sources and security of water supply, including contingency supply for future reporting periods; -water use and management on site; -any off - site water discharges; and - reporting procedures, including the preparation of a site water balance for each calendar year; and - investigates and implements all reasonable and feasible measures to minimise water use on site;	- Water Management Plan (Centennial Airly, July 2018) - Letter to Centennial Coal approving Water Management Plan (DPIE, 7 September 2018) - Letter to DPIE requesting approval of revised Water Management Plan following MOD 2 (Centennial Airly, 31 October 2019) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Airly Mine Annual Reporting, 2019 Annual Water Monitoring Report (GHD, 2020) - Airly Mine Annual Reporting, 2018 Annual Water Monitoring Report (GHD, 2019) - Environment and Community Coordinator inspection records - SEEC Drawing references for Dams 104, 11000161-CA600 2018 Geomorphic watercourse stability monitoring report (GHD, March 2018) 2018 Aquatic Ecology Monitoring Stygofauna Monitoring Report (GHD, February 2019) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021 - Weekly Environmental Surface Inspections e.g. 25 January 2018 - Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021	- The Water Management Plan was approved by DPIE in 2018 and was revised following approval of SSD_5581 MOD 2 and sent to DPIE for approval in October 2019. Approval of the revised 2019 Water Management Plan has not been received from DPIE. Refer Recommendation R10: SSD_5581 Schedule 6 Condition 2. a) The 2018 Water Management Plan includes reference to consultation with Water Division, EPA, DPIE and the Commonwealth Department of Environment and Energy (DoEE). Although no feedback was received from EPA or DoEE, the Water Management Plan references where DPIE and Water Division comments have been addressed (Appendix A). b) Performance criteria detailed in Table 6 relating to operations are included in the 2018 Water Management Plan (Section 6) with triggers to prompt actions included in TARPs (Appendix E). - Performance measures relating to design and construction were not included e.g., design aspects of construction and operation of liner infrastructure (design related); sediment dams; and mine water storages. As there were no new developments during the period of the IEA, this condition was assessed as compliant. c) The 2018 Water Management Plan includes: - A site water balance that was revised to reflect the 2018-2024 MOP. A schematic is also included (Figure 3-4). - Requirement to review the site water balance annually and report results in the Annual Review. - The 2018 and 2019 Annual Reviews included the Annual Water Monitoring report (prepared by GHD) which include details of water use and management (Section 3.1) and discharges (Section 5.3.3). - Also refer Sections 3.5.1 Water Supply Security, 3 Water Management, 3.5.2 Discharge Frequency and Section 7.2 Site Water Balance. - Measures to minimise water use included utilising seepage water to offset groundwater extraction from the production bore. - Evidence of Implementation of the Water Management plan included: - Erosion and sediment control structures (e.g., rock gabions on discharge from dams) were observed during site inspection to generally be adequately maintained; - Weekly surface inspections which include inspection of storage and sediment dams, pumps, drains, Airly Creek, effluent disposal systems (a selection of completed inspection checklists were sighted). - Surface water quality and flow monitoring for discharges, storage dams and streams and monitoring of groundwater levels, pressures and water quality for a network of monitoring bores as required by the EPL and Water Management Plan was undertaken by GHD in 2018, 2019 and 2020 and reported in the Annual Water Monitoring Report and Annual Review. - Monitoring of aquatic ecology was undertaken by GHD annually and reported in the 2018 and 2019 annual Aquatic Ecology Reports and the 2018 and 2019 Annual Reviews. - Monitoring of stygofauna was undertaken by GHD annually and reported in the 2018 and 2019 annual Stygofauna Monitoring Reports and 2018 and 2019 Annual Reviews.	Compliant	
				Compliant	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
			- Watercourse Stability Monitoring was undertaken by GHD in 2018 (required every two years) and reported in the 2018 Water Course Stability Monitoring Report and 2018 Annual Review. - Reporting of surface water quality and discharge volume in Monthly Environmental Monitoring Reports throughout the period of the IEA with no exceedances of EPL 12374 concentration limits recorded.		
	(ii) Surface Water Management Plan, that includes: - detailed baseline data on water flows and quality in the water courses that could potentially be affected by the development, including, but not limited to Gap, Genowlan and Airly Creeks; - continuous flow monitoring at Airly village spring and the Grotto; - provisions for the recalculation of site-specific trigger values in relation to water discharges to Airly Creek once a minimum of two years data is obtained from the Airly Creek 'U/S' monitoring location (refer Appendix 9) in accordance with ANZECC guidelines; - the provision and implementation of adaptive management measures to ensure that subsequent water discharges to Airly Creek comply with the recalculated site-specific trigger values derived from the Airly Creek 'U/S' monitoring location; - a detailed description of the water management system, including the: - clean water diversion systems; - erosion and sediment controls (mine water system); and - mine water management systems; - detailed objectives and performance criteria, including trigger levels for investigating any potentially adverse impacts associated with the development for: - downstream surface water quality; - downstream water users, including with respect to any subsidence - related flow reductions in Gap and Genowlan Creeks; - stream and riparian vegetation health in Gap, Genowlan and Airly Creeks within and immediately outside of the site; - design and management for the emplacement of coal reject materials; - reinstatement of drainage lines on the rehabilitated areas of the site; and - control of any potential water pollution from the rehabilitated areas of the site; - a program to monitor and report on: - effectiveness of the mine water management system; - surface water flows, quality and geomorphology of the watercourses potentially affected by the development within and immediately outside of the site; - the performance measures listed in Table 6 including, but not limited to event-based monitoring of the hydrology, quality, ecotoxicology and chemical composition of water in Airly Creek under discharge conditions at points 5 and 6 (refer Appendix 9), or as otherwise determined in consultation with the EPA, to ensure that protection is provided to 99% of all species in the Gardens of Stone National Park and Greater Blue Mountains World Heritage Area in accordance with ANZECC Guidelines; - reporting procedures for the results of the monitoring program; and - a plan to respond to any exceedances of the performance measures, and repair, mitigate and/or offset any adverse surface water impacts of the	(ii) Surface Water Management Plan, that includes: - Detailed baseline data on water flows and quality in the water courses that could potentially be affected by the development, including, but not limited to Gap, Genowlan and Airly Creeks (Section 5) - Continuous flow monitoring at Airly village spring and the Grotto (Section 4.2). - Provisions for the recalculation of site-specific trigger values in relation to water discharges to Airly Creek once a minimum of two years data is obtained from the Airly Creek 'U/S' monitoring location (refer Appendix 9) in accordance with ANZECC guidelines (Section 6.1.1). - The provision and implementation of adaptive management measures to enable subsequent water discharges to Airly Creek to comply with the recalculated site-specific trigger values derived from the Airly Creek 'U/S' monitoring location (TARP -Appendix E). - A detailed description of the water management system (Section 3.1), including the: - clean water diversion systems (Section 3.2.1). - erosion and sediment controls (mine water system) (Section 3.2.2). - mine water management systems (Section 3.3). - Detailed objectives and performance criteria, including trigger levels for investigating any potentially adverse impacts associated with the development for: - downstream surface water quality (Table 6-6 and Appendix E). - downstream water users, including with respect to any subsidence (Table 6.7 and Appendix E). - related flow reductions in Gap and Genowlan Creeks (Table 6-6 and Appendix E). - stream and riparian vegetation health in Gap, Genowlan and Airly Creeks within and immediately outside of the site (Table 6-9 and Appendix E). - design and management for the emplacement of coal reject materials (not triggered). - reinstatement of drainage lines on the rehabilitated areas of the site (not triggered). - control of any potential water pollution from the rehabilitated areas of the site (not triggered). - A program to monitor and report on: - effectiveness of the mine water management system (Section 5 and Appendix E). - surface water flows, quality and geomorphology of the watercourses potentially affected by the development within and immediately outside of the site (Section 5.1 and Appendix E). - the performance measures listed in Table 6 including, but not limited to event-based monitoring of the hydrology, quality, ecotoxicology and chemical composition of water in Airly Creek under discharge conditions at points 5 and 6 (refer Appendix 9), or as otherwise determined in consultation with the EPA, to ensure that protection is provided to 99% of all species in the Gardens of Stone National Park and Greater Blue Mountains World Heritage Area in accordance with ANZECC Guidelines (Sections 5, 6 and Appendix E). - Reporting procedures for the results of the monitoring program. Although Section 7 of the 2018 Water Management Plan includes specific reviews (e.g., Stygofauna, aquatic ecology, site water balance and hydrogeology) it did not include all reporting requirements such as incident reporting, groundwater monitoring report, Water Management Plan review and Annual Review nor did it include a discussion on the report frequency, chronological order and sequence and report recipients. Although the revised 2019 Water Management Plan has not been approved by DPIE yet, as the 2019 Water Management Plan includes a revised Section 7 and new reporting Action Plan (Section 8) which addresses reporting requirements, no further recommendations have been made.	Compliant		

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No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	development, including measures to provide compensatory water supply to any affected downstream water user under condition 13 of this Schedule				
	(iii) Groundwater Management Plan, which is consistent with the NSW Government guideline entitled Groundwater Monitoring and Modelling Plans –Introduction for prospective mining and petroleum activities, and includes: • detailed baseline data of groundwater levels, yield and quality in the region that could be affected by the development, including licensed privately-owned groundwater bores and a detailed survey/schedule of groundwater dependent ecosystems (including springs and their discharge quantity and quality); • consultation with the Water Division on the installation of all new monitoring bores, the scheduled sampling and quality determination of parameters for monitoring bores; • groundwater assessment criteria including trigger levels for investigating any potentially adverse groundwater impacts; • a program to monitor and report on: -springs and their discharge quantity and quality; -groundwater inflows transferred to the surface water management system; -the seepage/leachate from water storages and emplacements; -impacts of the development on: - o regional and local (including alluvial) aquifers; - o groundwater supply of potentially affected landowners; and - o groundwater dependent ecosystems (including rules for the management of groundwater level impacts to protect GDEs), and riparian vegetation; • a program to monitor and report on stygofauna and hyporheic fauna; • a program to review and validate the groundwater model for the development, including independent expert review; and • a plan to respond to any exceedances of the performance measures. The Applicant must implement the approved Water Management Plan for the development.		• Refer Appendix G of the Main IEA Report.		
4-14	Independent Expert Review As part of any Independent Environmental Audit of the development (see condition 12 of schedule 6), the Applicant must commission an independent expert whose appointment has been endorsed by the Secretary, to carry out a review of the Groundwater Management Plan for the development, including the groundwater model. This review must include a: (a) review of all available monitoring data; (b) comparison of predicted and actual groundwater impacts; and (c) review of the effectiveness of the Groundwater Management Plan for the development, including the groundwater model.	• Letter to DPIE proposing Mr Noel Merrick for the role of IER (Centennial Airly, 9 February 2021) • Letter to Centennial Coal endorsing Independent Expert (DPIE, 15 February 2021) • Independent Review of Airly Mine Groundwater Management Plan 620.30368.00000-R01-v1.0 (SLR, 30 April 2021)	• Mr Noel Merrick, Senior Principal Hydrogeologist of Hydro Algorithmics, was endorsed by DPIE to undertake the independent expert review of the Groundwater Management Plan in accordance with the requirements of this condition. According to the document control table on the independent review report, the draft independent review (620.30368.00000-R01-v0.2) was prepared by SLR and checked by Noel Merrick. The final independent review (620.30368.00000-R01-v1.0) was prepared and checked by SLR. The independent review report is attached as Appendix G to the main 2021 IEA report and includes: - o Review of monitoring data (Section 3). - o Comparison of predicted and actual groundwater impacts (Section 4). - o Review of the groundwater management plan (Section 5). • As Noel Merrick was endorsed by DPIE, and Noel Merrick conducted a check of the draft independent review report, this condition was assessed as Compliant. However, a recommendation has been made to confirm acceptability of the independent expert review process with DPIE. • MCW Environmental has not reviewed or undertaken any role in the independent expert review other than including it as an appendix to this IEA report.	Compliant (C-5)	C-5 Recommendation 9: Confirm acceptability of the independent expert review process, to meet the requirements of SSD_5581 Schedule 4 Condition 12, with DPIE.
BIODIVERSITY					
4-15	Biodiversity Management Plan Prior to carrying out any development under this consent that would cause surface disturbance, the Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must:	• Western Region Biodiversity Management Plan (Centennial Coal, 2019) • Letter to DPIE requesting approval of the Western Region Biodiversity Management Plan (Centennial Airly, 3 September 2019) • Airly Bushfire Management Plan (Centennial Airly, June 2020)	• The Western Region Biodiversity Management Plan was developed in 2016 and most recently revised in 2019. The 2016 Management Plan was resubmitted in April 2017 to include Airly site specific requirements. In June 2018, DPIE provided feedback on the Western Region Biodiversity Management Plan and the Management Plan was consequently revised in accordance with DPIE feedback. Centennial Airly resubmitted the Western Region Biodiversity Management Plan to DPIE for approval in September 2019 and are awaiting approval. • The Airly Mine (site specific) biodiversity management is included as Appendix B to the Western Region Biodiversity Management Plan. Implementation:	Non-Compliant (NC-5: The Biodiversity Management Plan did not include details of weed control management and	NC-5 Recommendation 1: Develop a regular weed inspection and treatment regime; and raise awareness of Centennial Airly's weed control

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No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
		2018 Annual Flora and Fauna Monitoring Report (RPS, February 2019) 2019 Annual Flora and Fauna Monitoring Report (RPS, March 2019) - Working in Remote Locations Procedure AIR-SWP-8427 (Centennial Airly, 12 February 2021) - Example of completed Working in Remote Location form (GHD, 8 January 2021) - Land Disturbance Procedure for the Solar Farm, 19 August 2019 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019) 2020 Annual Review (Centennial Airly, 2020)	- Annual flora and fauna monitoring has been undertaken and reported in the 2018, 2019 and 2020 Annual Reviews. - Bushfire Management Plan (as triggered by the Biodiversity Management Plan) –has been prepared. - Weed management – visual presence of weeds was reduced compared to the 2018 IEA site inspection and during the 2021 IEA site inspection (summer) a weed control contractor removed pampas grass from the bank of the 35ML Dam. - The Working in Remote Communities procedure (AIR-SWP-8427) includes vehicle washdown to prevent spread of weeds before accessing remote sites, landholder properties or grazing lands. - Access management – use of gates and fences to Mt Airly to prevent access to sensitive areas. - Pre-clearance surveys – it is noted that Airly utilise a Surface Disturbance Procedure / Permit system which includes reference to ecological aspects including flora, fauna and ecological communities.	contained reference errors).	obligations under SSD_5581, by informing lessees of Centennial Airly's aim to continue to progress the control and suppression of weeds and minimise potential weed impacts on the adjacent Mugii Murum-ban State Conservation Area.
	(a) be prepared in consultation with BCD and DoEE;		The Western Region Biodiversity Management Plan includes a consultation log in Appendix B. The log details that Centennial Airly provided the revised Management Plan to DoEE, OEH and NPWS in 2016 and 31 March 2017. Feedback was received on 9 June 2018.		NC-5 Recommendation 2: Correct weed management reference numbering in the Western Region Biodiversity Management Plan Appendix B Airly e.g. the Airly site-specific Biodiversity Management Plan references Section 4.4.2 in the RBMP for weed management. There is no Section 4.4.2, alternatively Section 6.6.2 includes Weed management treatment and timing.
	(b) establish baseline data for the existing remnant vegetation and habitat on site, including mapping of the location of the Pultenaea sp. Genowlan Point;		- Baseline data is included in Section 2 of the Western Region Biodiversity Management Plan. - The Management plan states that mapping of Pultenaea sp. Genowlan Point is to be conducted independently by NSW National Parks and Wildlife Services (NPWS). Consultation undertaken for this Regional Biodiversity Management Plan is included in Appendix A Consultation Log.		
	(c) describe the short, medium, and long-term measures that would be implemented to manage the remnant vegetation and habitat on the site, including but not limited to; - Prostanthera stricta (Mt Vincent Mint-bush); - Eucalyptus cannonii (Capertee Stringybark); - Pultenaea sp. Genowlan Point; and - Genowlan Point Allocasurina nana Heathland;		- Management measures for Pultenaea sp. Genowlan Point and Genowlan Point Allocasurina nana Heathland will be undertaken and described by NPWS. - The management of threatened species and endangered ecological communities is incorporated within the Extraction Plans (Refer SSD_5581 Schedule 3-Condition 7(iv). - Eucalyptus cannonii management is identified in Section 4 Tables 6 to 8 of the Western Region Biodiversity Management Plan.		
	(d) include a detailed description of the measures that would be implemented to: - minimise the impacts to fauna on site, including undertaking pre-clearance surveys; - avoid and mitigate the spread of Phytophthora cinnamomi (P. cinnamomi); - control weeds and feral pests including, but not limited to goats, rabbits, European Red Fox, cats and pigs; - manage salinity; - control erosion; - control access; and - manage bushfire risk;	- Genowlan Point Plant Pathogen and Weed Transfer Wash Down Procedure ID: AIR-SWP-8857 (Centennial Airly, 2021) - Airly Mine Plant Pathogen and Weed Transfer Wash Down Procedure (Centennial Airly, undated) 2018 Weed Control Report (Hunter Land Management, March 2018)	- In accordance with Section 3 of the Western Region Biodiversity Management Plan, the need for pre-clearance surveys is assessed by the Environment Coordinator. Surface Disturbance Notices were sighted for multiple projects which included assessment and approval in advance of works commencing by the Environment and Community Coordinator for environmental (including ecology) risks. - Section 4 Tables 6 and 7 of the Western Region Biodiversity Management Plan provides management actions to control operational areas and native vegetation (grazing) including limiting access and the Airly mine asset protection zone. - The 2019 annual flora and fauna monitoring report identifies that feral species were assessed during the survey (Section 3.3.7) - The 2019 Western Region Biodiversity Management Plan includes management of salinity (Section 6.8.1); erosion (Section 6.8.2); and generic weed management (Section 6.6). Appendix B (Table 9) of the Plan identifies that '<i>Vehicle wash down protocols to ensure spread of P. cinnamomi is minimised – refer to standalone P. cinnamomi and weed washdown procedure.</i> Centennial Airly has procedures to be implemented following detection of Phytophthora cinnamomic that include consultation with NPWS. - Although the extent of weeds (particularly Blackberry) was notably reduced in grazing lands surrounding the Airly Mine since the previous 2018, reflecting continued weed control by Centennial Airly during the period of the IEA, given the proximity of the Airly Mine site to the Mugii Murum-ban State Conservation Area and requirements specified within the Western Region Biodiversity Management Plan, weed management requires routine inspection and treatment, and increased awareness of Centennial Airly weed control obligations under SSD_5581 in leased properties. During the site inspection the following observations were made: - Blackberry (a noxious weed) was observed in grazing lands on the road entering the Airly mine car park and adjacent to the weather station (near Airly homestead). - Pampas Grass on the bank of the 35ML Dam (which was removed on 12 February 2021). - General weeds on the leased property near the Mt Airly camping ground. Although the auditors are not experts in weed identification, no noxious weeds species were observed during the site inspection in remote areas on Mt Airly. - Section 6.6.2 of the Western Region Biodiversity Management Plan identifies generic Western coalfield weed treatment and timing as "...controlling and suppressing weed species, thus providing a better opportunity for native flora to germinate, grow and establish dominance. Priority will be given to weed species listed as Priority weeds under the Biosecurity Act 2015, or Weeds of National Significance (WoNS). Specific treatment and timing requirements are provided in the appended BMPs". The site-specific Airly Biodiversity Management Plan (Section 4 Management Actions (Tables 7, 8 and 9) requires that weeds are managed and removed in Spring and Summer in operational areas, Crown land/grazing land and areas of biodiversity significance 'in accordance with Section 4.4.2 of the RBMP as required'. (Note: reference to 4.4.2 of the RBMP is incorrect). There is		

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No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
			opportunity to develop a regular inspection and treatment regime for weeds to progress weed management actions. - A separate Bushfire Management Plan (Centennial Airly, 2020) (as triggered by the Biodiversity Management Plan) –has been prepared. The asset protection zone at Airly was observed to be well maintained. - The Airly site-specific Biodiversity Management Plan references Section 4.4.2 in the RBMP for weed management. There is no Section 4.4.2 in the RBMP, alternatively Section 6.6.2 includes Weed management treatment and timing.		
	(e) include a program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; and	- Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019) 2020 Annual Review (Centennial Airly, 2020) - Airly Annual Flora and Fauna Monitoring Report 2018 (RPS, 1 February 2019) - Airly 2018 aquatic ecology monitoring Annual report 2019 (GHD, March 2019) - Airly Annual Flora and Fauna Monitoring Report 2019 (RPS, 9 March 2020) - Airly 2019 aquatic ecology monitoring Annual report 2019 (GHD, March 2020) - Airly BMP Seasonal Ecological Monitoring Report 2020 (RPS, 4 December 2020) - Airly environmental monitoring 2020 Airly stygofauna monitoring report 2020 (GHD, March 2021) - Airly Aquatic Ecology 2020 Annual Report (GHD, March 2021) 2018 Weed Control Report (Hunter Land Management, March 2018)	- The 2019 Western Region Biodiversity Management Plan includes audit and continual improvement actions (Section 8). - Aquatic ecology and stygofauna monitoring was undertaken annually by GHD during the period of the IEA with the annual monitoring report included as an attachment to the Annual Review. The 2020 aquatic ecology report concludes “<i>No discharges from Airly Mine into Airly Creek were recorded in 2020. There was no evidence of impacts on water quality, sediment quality, macroinvertebrate communities or instream habitat due to mining operations in 2020. Impact site AIR contained similar water quality and macroinvertebrate communities to background site AIRUS and baseline sites TOR and DOG, reflecting the influence of surrounding landuse (i.e. grazing and agriculture) and underlying geology on water quality, and limited instream habitats. Improved macroinvertebrate condition was observed at upland sites GEN and GRO, which reflects the minimal anthropogenic disturbance, and generally improved water, sediment and instream habitat quality, relative to the lowland sites</i>”; and includes recommendations for improved performance. - Ecological monitoring was undertaken annually by RPS during the period of the IEA with the annual monitoring report included as an attachment to the Annual Review. The 2020 ecological monitoring reports assesses compliance with SSD_5581 Schedule 4 Condition 15 and provides discussion of results compared to previous surveys and recommendations for improved performance. The 2020 Ecological Monitoring Report reported that the overall presence and condition of threatened flora and fauna was comparable to previous monitoring seasons. - A report (including map showing areas sprayed for Blackberry, Serrated Tussock and St Johns Wort) by Hunter Land Management was sighted summarising weed control activities undertaken between 12 and 23 February 2018.		
	(f) include details of who would be responsible for monitoring, reviewing, and implementing the plan. The Applicant must implement the approved Biodiversity Management Plan for the development. Note: The Biodiversity Management Plan and Rehabilitation Management Plan need to be substantially integrated for achieving biodiversity objectives for the rehabilitated mine-site.		- The 2019 Western Region Biodiversity Management Plan includes review and document control actions (Section 8). - No rehabilitation activities have been undertaken at the site during the period of the IEA.		
TRANSPORT					
4-16	Monitoring of Coal Transport The Applicant must monitor and report on: (a) the amount of coal transported from the site; and (b) the date and time of each train movement to and from the site; to the satisfaction of the Secretary.	- Spreadsheet – APP153109 Train Schedule 2018-2021 - Airly-Scheduling Report – 1 Jan 2019 to 31 Dec 2019.xlsm - Airly-Scheduling Report – 1 Jan 2020 to 31 Dec 2020.xlsm - EPL 12374 Monthly Environmental Monitoring Report (Centennial Airly, Jan - Dec 2018) - Letter to DPE dated 6 July 2017 re Airly Mine Extension Project – Monitoring and Reporting of Coal Transport Data 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019) 2020 Annual Review (Centennial Airly, 2020)	- Records of coal loading and transport by rail are kept in APP153109_Train Schedule.xls which includes loading and transport details for each train and each day throughout the period of the IEA and included date and time train arrived, date and time loading completed as well as tonnes of coal transported. - From July 2017 until October 2019, coal loading and transport by rail records were reported in Monthly Environmental Monitoring reports. In July 2017, Centennial Airly requested DPIE approval for reporting coal data in the Monthly Environmental Monitoring reports. No response has reportedly been provided by DPIE and in October 2019, the monthly Environmental Monitoring Report advised that rail transport data will no longer be reported within the monthly EPL Report “<i>as rail movement and coal transport data is required under SSD_5581 and not EPL 12374, this data will be reported on during the Annual Review and made public via the Centennial Airly website</i>”. - As coal transport data has been reported in 2018, 2019 and 2020 Annual Reviews and in the monthly Environmental Monitoring Reports until October 2019, which are both available on the Centennial Airly publicly accessible website, this condition was assessed as Compliant.	Compliant	
4-17	Traffic Management Plan Prior to the commencement of construction activities approved under this consent or within three months of the commencement of development under this consent (whichever is sooner), the Applicant must prepare a Traffic Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with RMS and Council;	- Traffic Management Plan (Centennial Airly, July 2018) - Letter to Centennial Airly approving Traffic Management plan (DPIE, 7 September 2018) - Email to Centennial Airly Traffic Management Plan (LCC, April 2017) - Narrow Pillar Extraction Project requirements (Centennial Airly, 19 June 2018) - Letter to Centennial Airly re SSD5581; Airly Mine Extension Project; Traffic Management Plan (RMS, April 2017)	a) The 2018 Traffic Management was provided to RMS and Lithgow City Council for review and responses were received from both agencies. The Traffic Management Plan includes a consultation log with response to comments from RMS and LCC (Appendices 1 and 2). b) Management measures to reduce the impact of construction traffic on Glen Davis Road and the village of Capertee are described in Section 7 of the Traffic Management Plan. c) Monitoring and reporting requirements are documented in Section 8 of the Traffic Management Plan including: - Weekly inspections and site meetings. - Non-conformance and corrective and preventative action. - Complaints management. - Incident reporting.	Compliant	

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No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	(b) include measures to minimise the traffic impacts to Glen Davis Road and in the village of Capertee that may occur during the construction of new and/or upgraded surface infrastructure at the pit top; and (c) a program to monitor and report on the effectiveness of these measures. The Applicant must implement the approved Traffic Management Plan for the development.	- Complaints Register (2018 -2021) - Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021	- Website with monthly and annual environmental reporting and complaints register. Implementation - No complaints regarding traffic have been received during the period of the IEA. - A work instruction for the Narrow Pillar Extraction Project (Laydown and Storage) includes requirements for heavy vehicle movements from the Traffic Management Plan.		
HERITAGE					
4-18	Protection of Aboriginal Sites Unless otherwise authorised under the National Parks and Wildlife Act 1974, the Applicant must ensure that the development does not cause any direct or indirect impact on identified Aboriginal sites. Note: Aboriginal heritage sites are identified in Appendix 6.	- Western Region Aboriginal Cultural Heritage Management Plan (July 2017) - Land Disturbance Procedure (Centennial Airly, 2016) - Land Disturbance Procedure for the Solar Farm, 19 August 2019 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019) 2020 Annual Review (Centennial Airly, 2020)	- The 2018, 2019 and 2020 Annual Reviews include Figure 15 showing actual mine workings and proposed workings in relation to registered Aboriginal sites; and report that as per the mine schedule and with reference to Figure 15, no registered Aboriginal heritage sites were undermined during the period of the IEA. - Protection of identified Aboriginal sites is achieved through the implementation of the Western Region Aboriginal Cultural Heritage Management Plan. - Evidence of the implementation of the Western Region Aboriginal Cultural Heritage Management Plan includes a selection of completed Land Disturbance Permits were reviewed which included a reference to the assessment of cultural heritage by the Environment Coordinator. - The Environment and Community Coordinator advised that no exploration activities that would cause surface disturbance or construction of minor surface infrastructure had occurred under this consent SSD_5581 during the period of this IEA.	Compliant	
4-19	Heritage Management Plan Prior to carrying out any development under this consent that would cause surface disturbance, the Applicant must prepare a Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with Heritage Division, Council, any relevant local historical organisations (in relation to non-Aboriginal heritage) and local Aboriginal stakeholders (in relation to Aboriginal heritage); (c) include a description of the measures that would be implemented for: - managing the discovery of human remains or previously unidentified heritage items on site; and - ensuring any workers on site receive suitable heritage inductions and that suitable records are kept of these inductions; (d) include the following for the management of Aboriginal heritage: - a description of the measures that would be implemented for: -protecting, monitoring and/or managing (including any proposed archaeological investigations and/or salvage measures) the heritage items identified in Appendix 5; -managing the discovery of previously unidentified Aboriginal items on site; -conserving the sites outside the surface disturbance area (see Appendix 5); -maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site; -ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage on site; and (e) include the following for the management of non-Aboriginal heritage items: - a description of the measures that would be implemented for: -protecting, monitoring and managing the heritage items identified in Appendix 6; and -managing the discovery of previously unidentified cultural heritage items on site.	- Western Region, Aboriginal Cultural Heritage Management Plan (Centennial Airly, July 2017) - Western Region Historic Heritage Management Plan (Centennial Airly, February 2017) 2018 IEA (MCW Environmental, 2018) - Example of completed Land Disturbance Procedure for the Solar Farm, 19 August 2019	- Preparation of the Western Region Aboriginal Culture Heritage Management Plan and Western Region Historic Management Plan were prepared during the period of the previous IEA. This condition was assessed as compliant in the previous IEA (MCW Environmental, 2018). Both Management Plans have been approved by DPIE. - Evidence of the implementation of the Management Plan is provided in SSD_5581 Schedule 4 Condition 18 with the implementation of, and approvals within, the Land Disturbance Permit prior to construction of the Solar Plant.	Compliant	

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No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	<i>Note: This plan can be incorporated in a regional Aboriginal Cultural Heritage Management Plan for Centennial's other mines and mine infrastructure in the Lithgow Local Government Area.</i> The Applicant must implement the approved Heritage Management Plan for the development.				
VISUAL					
4-20	Visual Screening of Reject Emplacement Area The Applicant must: - plant trees at the basal area of the proposed reject emplacement area (REA) to minimise views of the REA to travellers along Glen Davis Road; - carry out tree planting in the road reserve of the Castlereagh Highway in locations where the REA is visible, in consultation with the relevant road authority; - complete this tree planting at least three months prior to constructing the proposed REA; and - maintain this tree screening over the life of the mine to the satisfaction of the Secretary.		Construction of the proposed reject emplacement area has not commenced and is reportedly not imminent, consequently this condition has not been triggered.	Not triggered	
4-21	Operating Conditions The Applicant must: - implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development; - ensure that all external lighting associated with the development complies with Australian Standard AS4282 (INT) 1997 –Control of Obtrusive Effects of Outdoor Lighting or its latest version; - ensure that the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape, to the satisfaction of the Secretary.	Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021	- No buildings were reportedly constructed during the period of this IEA. (a) This condition was assessed as compliant in the previous IEA (MCW Environmental, 2018). (b) This condition was assessed as compliant in the previous IEA (MCW Environmental, 2018). (c) During the site inspection, it was observed that most of the buildings, equipment and other structures have been painted green to blend into and provides a low contrast level with the surrounding area.	Compliant	
BUSHFIRE MANAGEMENT					
4-22	The Applicant must: - ensure that the development is suitably equipped to respond to any fires on site; and - assist the Rural Fire Service, emergency services and NPWS as much as possible if there is a fire in the surrounding area.	- Airly Bushfire Management Plan (Centennial Airly, June 2020) - Letter to Centennial Airly (Lithgow City Council, 28 February 2020) 2020 Bushfire Incident and review of Bushfire Risk Assessment (Centennial Airly, undated) - Bushfire Risk Assessment_RO V2 (Centennial Airly, undated) - Bushfire Awareness Airly Fire Teams (Centennial Airly, undated)	a) MCW Environmental are not bushfire experts and are not qualified to assess bushfire preparedness, therefore a detailed assessment of this condition has not been undertaken by the auditors. Observations made during the site inspection regarding bushfire management include: - Regular slashing and mowing of asset protection zones is undertaken. - Strategic stock grazing to lower fuel loads in surrounding grasslands. - The Environmental Coordinator is the Senior Deputy Captain of the local RFS and is trained and experienced in Fire and Rescue operations. - Fire hydrants are strategically located around site (observed during site inspection). - Following the 2020 bushfire emergency in the Lithgow region, an incident and Bushfire Risk Assessment review was undertaken and included recommendations and actions. The Bushfire Risk Assessment, identifying top ten risks for the Airly Mine, has been revised (now V2). - The crew are trained in firefighting (presentation sighted). - Restricted access to remote areas of the mining lease during fire bans (e.g. Mt Genowlan and Mt Airly are in the Muggie Murrumbidgee State Conservation Area). - A letter of appreciation was provided to Centennial Airly from Lithgow City Council acknowledging support provided by Centennial Airly during the Bushfire Emergency at the end of 2019 early 2020 (Gospers Mountain and adjacent bushfires).	Compliant	
WASTE					
4-23	WASTE The Applicant must: - implement all reasonable and feasible measures to minimise the waste (including coal reject) generated by the development; - ensure that the waste generated by the development is appropriately stored, handled and disposed of; and - monitor and report on the effectiveness of waste minimisation and management measures in the Annual Review, to the satisfaction of the Secretary.	- Total Waste Management Report spreadsheet (JR Richards, October 2018) - Total Waste Management Report spreadsheet (JR Richards, May 2019) - Total Waste Management Report spreadsheet (JR Richards, January 2021) - NSW EPA Waste Transport Certificate for F110 waste resin etc (NSW EPA, 7 May 2019) - Waste Management Checklist for Airly Mine (JR Richards, 26 June 2019) 2018 Annual Review (Centennial Airly, 2019)	a) Waste is minimised through the recycling of steel, paper and cardboard and waste oils (reported monthly by JR Richards in the Total Waste Management Report Airly spreadsheet, which is updated monthly). - Production statistics reported in the 2018, 2019 and 2020 Annual Reviews indicate that no waste rock / overburden or coal rejects were generated during the period of the IEA. Airly do not process (wash) coal on site, with all coal transported off site. - The site inspection observed that wastes were appropriately segregated and stored in bins, skips and laydown areas, in particular a waste sorting area was observed at the pit top during the site inspection. Solid mixed rubbish is placed in the waste sorting area while waste oil, oily water and chemical waste are placed in assigned containers/bins. JR Richards manages the recycling and disposal of wastes from Centennial Airly. - The 2018, 2019 and 2020 Annual Reviews compared annual waste volumes and waste recycling.	Compliant	

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		2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021	- Non-hazardous disposed waste volumes from 2018 increased in 2019 and were generally consistent in 2019 and 2020. 2020 annual waste recycling percentages were considerably lower in 2020 than 2017, 2018 and 2019, as reported in the 2020 Annual Review, <i>"The reduction in recycling percentages from the previous years compared to the 2020 reporting period (shown in Figure 20) can be attributed to scrap steel removal volumes. During 2020 Airly Mine was more efficient in the reduction and re-use of scrap steel items on site which resulted in only 44.65 tonnes of scrap steel being removed from site compared to nearly 90 tonnes for the previous year/s."</i> - An inspection record, sewerage transportation docket and 2017 Ecomax effluent treatment system annual return was sighted b) The site inspection observed that wastes were appropriately segregated and stored in bins, skips and laydown areas, in particular a waste sorting area was observed at the pit top during the site inspection. Solid mixed rubbish is placed in the waste sorting area while waste oil, oily water and chemical waste are placed in assigned containers/bins. JR Richards manages the recycling and disposal of wastes from Centennial Airly. c) The quantities of the various waste and recycling streams are monitored by JR Richards and reported in their Total Waste Management Report spreadsheet updated monthly. - The 2018 and 2019 Annual Reviews compared annual waste volumes and waste recycling. 2019 waste volumes were significantly lower than 2018 and the 2019 annual waste recycling percentages increased slightly over 2018.		
EXPLORATION ACTIVITIES AND SURFACE INFRASTRUCTURE					
4-24	Exploration Activities and Minor Surface Infrastructure Management Plan Prior to carrying out exploration activities on site under this consent that would cause surface disturbance or the construction and/or upgrade of minor surface infrastructure, the Applicant must prepare an Exploration Activities and Minor Surface Infrastructure Management Plan for the development to the satisfaction of the Secretary. This Plan must: (a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with the Resources Regulator and BCD; (c) include a description of the measures that would be implemented for: - managing exploration activities on site; - managing construction and operation of minor surface infrastructure (including groundwater monitoring bores) and associated access tracks; - consulting with and addressing concerns of affected landowners; - avoiding threatened species, populations or their habitats and EECs; - minimising clearance and disturbance of native vegetation; - minimising erosion and sedimentation; - achieving applicable standards and goals; and - rehabilitating disturbed areas. The Applicant must implement the approved Exploration Activities and Minor Surface Infrastructure Management Plan for the development. <i>Note: This condition does not apply to the construction of approved surface infrastructure in the Airly Pit Top area.</i>	- Email to Centennial Airly providing comments on the Exploration Activities and Minor Surface Infrastructure Management Plan (DPIE, 15 June 2018) - Email to DPIE providing the Exploration Activities and Minor Surface Infrastructure Management Plan with DPIE comments addressed (Centennial Coal, 13 July 2018) - Letter to Centennial Airly Approval of Exploration Activities and Minor Surface Infrastructure Management Plan (DPIE, 1 November 2018) - Airly Mine EPBC2013/7076 Annual Compliance Report (Centennial Airly, August 2020)	- The Environment and Community Coordinator advised that no exploration activities that would cause surface disturbance or construction of minor surface infrastructure had occurred under this consent SSD_5581 during the period of this IEA consequently the Management Plan has not been implemented during the period of the IEA. - The Exploration Activities and Minor Surface Infrastructure Management Plan was originally prepared and approved by DPIE in 2017, revised by Centennial Airly and subsequently approved by DPIE in 2018. - As the 2017 Exploration Activities and Minor Surface Infrastructure Management Plan was assessed as generally meeting the requirements of SSD_5581 Schedule 4 Condition 24 for the 2018 IEA, and as DPIE have approved the 2018 version that was revised to consider comments from DPIE, preparation of the Exploration Activities and Minor Surface Infrastructure Management Plan was assessed as Compliant.	Compliant	
REHABILITATION					
4-25	Rehabilitation Objectives The Applicant must rehabilitate the site to the satisfaction of the Resources Regulator. This rehabilitation must be generally consistent with the proposed Rehabilitation Strategy described in the EIS (and depicted conceptually in Appendix 10) and comply with the objectives in Table 7.	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Mining Operations Plan Amendment A 1 January 2018 to 31 December 2024 (Centennial Airly, 3 March 2020)	- Centennial Airly will conduct rehabilitation works at the completion of life-of-mine operations, in accordance with the approved Mining Operations Plan (MOP) Airly Mine 1 January 2018 to 31 December 2024 (which incorporates the requirements of the Rehabilitation Management Plan). - The Mining Operations Plan was revised and approved by the Resources Regulator in 2018 (Amendment A) to reflect the requirements of SSD_5581 MOD 2. - The Mining Operations Plan Amendment A reports that there will be no rehabilitation undertaken during the term of the Mining Operations Plan as there is limited opportunity for progressive	Not triggered	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation																								
	<table><tr><td colspan="2">Table 7: Rehabilitation objectives</td></tr><tr><td>Feature</td><td></td></tr><tr><td>Site (as a whole)</td><td> - Safe, stable and non-polluting </td></tr><tr><td>Surface Infrastructure</td><td> - To be decommissioned and removed, unless the Resources Regulator agrees otherwise - The Reject Emplacement Area and all surface infrastructure is to be made safe and hydraulically and geotechnically stable - All surface infrastructure sites are to be revegetated with suitable local native plant species to a landform consistent with the surrounding environment </td></tr><tr><td>Rehabilitation materials</td><td> - Materials from areas disturbed under this consent (including topsoils, substrates and seeds) are to be recovered, managed and used as rehabilitation resources </td></tr><tr><td>REA</td><td> - The REA is to be revegetated with suitable local native plant species, and to a landform consistent with the surrounding environment - Capping materials (including depth of application) are to be approved by the Resources Regulator prior to capping </td></tr><tr><td>Revegetated final landforms</td><td> - Stable and sustain the intended land use - Consistent with surrounding topography to minimise visual impacts - Incorporate relief patterns and design principles consistent with natural drainage </td></tr><tr><td>Native flora and fauna</td><td> - Flora species used in rehabilitation selected to re-establish and complement local and regional biodiversity - Rehabilitated areas contribute to achieving self-sustaining biodiversity habitats </td></tr><tr><td>Cliffs and steep slopes</td><td> - No additional risk to public safety compared to pre-mining conditions </td></tr><tr><td>All watercourses subject to mine-water discharges and/or subsidence impacts</td><td> - Hydraulically and geomorphologically stable, with aquatic ecology and riparian vegetation that is the same, or better than prior to grant of this consent </td></tr><tr><td>Water quality</td><td> - Water retained on site is fit for the intended post mining land use(s) - Water management is consistent with the regional catchment management strategy </td></tr><tr><td>Community</td><td> - Ensure public safety - Minimise the adverse socio-economic effects of mine closure </td></tr></table> <i>Note: These rehabilitation objectives apply to all subsidence impacts and environmental consequences caused by mining taking place after the date of this consent, and to all surface infrastructure part of the project, whether</i>	Table 7: Rehabilitation objectives		Feature		Site (as a whole)	Safe, stable and non-polluting	Surface Infrastructure	- To be decommissioned and removed, unless the Resources Regulator agrees otherwise - The Reject Emplacement Area and all surface infrastructure is to be made safe and hydraulically and geotechnically stable - All surface infrastructure sites are to be revegetated with suitable local native plant species to a landform consistent with the surrounding environment	Rehabilitation materials	Materials from areas disturbed under this consent (including topsoils, substrates and seeds) are to be recovered, managed and used as rehabilitation resources	REA	- The REA is to be revegetated with suitable local native plant species, and to a landform consistent with the surrounding environment - Capping materials (including depth of application) are to be approved by the Resources Regulator prior to capping	Revegetated final landforms	- Stable and sustain the intended land use - Consistent with surrounding topography to minimise visual impacts - Incorporate relief patterns and design principles consistent with natural drainage	Native flora and fauna	- Flora species used in rehabilitation selected to re-establish and complement local and regional biodiversity - Rehabilitated areas contribute to achieving self-sustaining biodiversity habitats	Cliffs and steep slopes	No additional risk to public safety compared to pre-mining conditions	All watercourses subject to mine-water discharges and/or subsidence impacts	Hydraulically and geomorphologically stable, with aquatic ecology and riparian vegetation that is the same, or better than prior to grant of this consent	Water quality	- Water retained on site is fit for the intended post mining land use(s) - Water management is consistent with the regional catchment management strategy	Community	- Ensure public safety - Minimise the adverse socio-economic effects of mine closure		rehabilitation to occur prior to the cessation of life-of-mine operations and currently disturbed areas are required for current operations. - The 2018, 2019 and 2020 Annual Reviews report that no rehabilitation was undertaken during 2018, 2019 and 2020. - As there was no requirement to undertake rehabilitation during the period of this IEA and no rehabilitation was undertaken, this condition is assessed as Not triggered.		
Table 7: Rehabilitation objectives																													
Feature																													
Site (as a whole)	Safe, stable and non-polluting																												
Surface Infrastructure	- To be decommissioned and removed, unless the Resources Regulator agrees otherwise - The Reject Emplacement Area and all surface infrastructure is to be made safe and hydraulically and geotechnically stable - All surface infrastructure sites are to be revegetated with suitable local native plant species to a landform consistent with the surrounding environment																												
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Community	- Ensure public safety - Minimise the adverse socio-economic effects of mine closure																												

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	<i>constructed prior to or following the date of this consent.</i>				
4-26	Progressive Rehabilitation The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time.		As there is limited opportunity for progressive rehabilitation to occur prior to the cessation of life-of-mine operations, Centennial Airly did not conduct rehabilitation during the period of the IEA consequently implementation of progressive rehabilitation described in the MOP Amendment A were unable to be assessed.	Not triggered	
4-27	Rehabilitation Management Plan Prior to carrying out any development under this consent, unless the Secretary agrees otherwise, the Applicant must prepare a Rehabilitation Management Plan for the development to the satisfaction of the Resources Regulator. This plan must:	- Mining Operations Plan, Airly Mine Amendment A, 1 January 2018 to 31 December 2024 (Centennial Airly, 2020) - Letter to Centennial Airly Approval of MOP Amendment A (Resources Regulator, 9 April 2020) - Letter to Resources Regulator MOP Amendment A (Centennial Airly, 31 March 2020) - Letter to DPIE Regulator MOP Amendment A (Centennial Airly, 31 March 2020) - Letter to Centennial Airly ML 1331 Notification of Assessment of Security Deposit (Resources Regulator, 16 April 2020)	- The Mining Operations Plan (MOP), Airly Mine, 1 January 2018 to 31 December 2024 was approved by the Resources Regulator on 10 January 2018. - The MOP was revised to incorporate the importation of water from Charbon Colliery (SSD_5581 MOD 2) and to include the 2MW solar plant (DA033/19) and submitted to the Resources Regulator for approval on 31 March 2020. - The MOP Amendment A was approved by the Resources Regulator on 9 April 2020. - MCW Environmental has not undertaken a detailed review of the MOP as this is not considered to be required as part of the scope of the IEA. A high level review of the MOP Amendment A by the auditors indicated that it has been prepared generally in accordance with the ESG3; Mining Operations Plan (MOP) Guidelines September 2013. - As there is limited opportunity for progressive rehabilitation to occur prior to the cessation of life-of-mine operations, Centennial Airly did not conduct rehabilitation during the period of the IEA consequently implementation of progressive rehabilitation described in the MOP Amendment A were unable to be assessed.	Compliant	
	(a) be prepared in consultation with the Department, the Water Division, BCD, Council and the CCC;		- The previous 2018 IEA assessed that consultation with the Water Division, BCD, Council and the CCC had been undertaken for the original MOP. The Statement of Environmental Effects for SSD_5581 MOD 2 was exhibited in 2019 and comments from government agencies were addressed in MOP Amendment A (Section 1.5.2). - The Statement of Environmental Effects for the solar plant was provided to Lithgow City Council prior to approval in 2018.	Compliant	
	(b) be prepared in accordance with any relevant Resources Regulator guideline;	ESG3; Mining Operations Plan (MOP) Guidelines	A high level review of the MOP identified that it was prepared generally in accordance with the ESG3; Mining Operations Plan (MOP) Guidelines September 2013. The review also indicated that the other requirements of this condition have generally been incorporated into the MOP.	Compliant	
	(c) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);		The MOP Amendment A includes performance indicators and completion/relinquishment criteria (Section 6) and TARP for rehabilitation (Section 9.2)	Compliant	
	(d) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent, and address all aspects of rehabilitation including mine closure, final landform and final land use;		- Monitoring of rehabilitation is included in MOP Amendment A (Section 8.1) - Completion criteria for decommissioning, landform establishment, growth medium, ecosystem and land use establishment and ecosystem sustainability are included in Tables 19-23. - Detailed mine closure planning, including final landform, final land use and Closure Groundwater Monitoring and Management Plan, has not been triggered as it is not required until five years prior to closure) (Section 4.4).	Not triggered	
	(e) include the design and implementation of a Closure Groundwater Monitoring and Management Plan, which: -assists in restoring natural groundwater flow to pre-mining conditions to the maximum extent possible; -includes the implementation of appropriate mitigation strategies to reduce adverse groundwater impacts to seeps, springs and flows in terms of acidity, salinity or location; -involves the removal of all non-natural material from within the mine not required for groundwater or subsidence management and describe measures that would be implemented to prevent polluting materials from entering the mine so as to not affect groundwater quality		Detailed mine closure planning, including final landform, final land use and Closure Groundwater Monitoring and Management Plan, has not been triggered as it is not required until five years prior to closure) (Section 4.4).	Not triggered	
	(f) include interim rehabilitation where necessary to minimise the area exposed for dust generation;		As there is limited opportunity for progressive rehabilitation to occur prior to the cessation of life-of-mine operations, Centennial Airly did not conduct rehabilitation during the period of the IEA consequently implementation of progressive rehabilitation described in the MOP were unable to be assessed.	Not triggered	
SCHEDULE 5 ADDITIONAL PROCEDURES					
5-1	NOTIFICATION OF LANDOWNERS / TENNANTS As soon as practicable after obtaining monitoring results showing: a) an exceedance of any relevant criteria in Schedule 4, the Applicant must notify the affected landowners in writing of the exceedance, and	- ECD (2018 -2021) - Complaints Register (2-018-2021) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 – 2021)	- SSD_5581 Schedule 4, Condition 2 and Condition 5 provide noise and air quality criteria respectively. - There were no exceedances of noise or air quality criteria during the period of the IEA, consequently this condition has not been triggered.	Not triggered	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	provide regular monitoring results to these landowners until the project is again complying with the relevant criteria; and b) an exceedance of the relevant air quality criteria in Schedule 4, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time), to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).				
5-2	INDEPENDENT REVIEW If an owner of privately-owned land considers the project to be exceeding the relevant criteria in Schedule 4, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land. If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision the Applicant must: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to: • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 4; and • if the project is not complying with these criteria, then identify the measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review.		The Environment and Community Coordinator advised that no owner of privately owned land had made a request for an independent review under Condition 2 of Schedule 5 of SSD_5581.	Not triggered	

SCHEDULE 6

ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

6-1	Environmental Management Strategy Prior to carrying out any development under this consent, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (a) be submitted to the Secretary for approval, unless otherwise agreed; (b) provide the strategic framework for environmental management of the development; (c) identify the statutory approvals that apply to the development; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; (e) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the mine; • 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; and (f) include: • copies of any strategies, plans and programs approved under the conditions of this consent; and	- Environmental Management Strategy, Airly Mine, AIR-MP- 2196, July 2018 - Letter to Centennial Airly Approval of Environmental Management Plans (DPIE, 1 November 2018)	The Environmental Management Strategy was approved by DPIE on 1 November 2018.	Compliant (C-6)	C-6: Recommendation 10: Consult with DPIE to confirm if the current approach is acceptable where the Environmental Management Strategy references management plans required by SSD_5581, and that these separate management plans include the monitoring requirements to meet SSD_5581 Schedule 4, Condition 1 (f).
		https://www.centennialcoal.com.au/operation/s/airly/ - CCC minutes (2018 -2021) - Airly Mine Subsidence Update (Airly Mine CCC Meeting on 27 October 2020)	- The Environmental Management Strategy includes the strategic framework and context for the environmental management system (Section 1.4) - The Environmental Management Strategy documents the statutory approvals that apply to the development including Development Consent SSD_5581, EPL 12374, Mining Lease 1331 and authorisation, water access licences and the Mining Operations Plan (Section 1.6) - The Environmental Management Strategy documents the roles and responsibilities of the Centennial Group Environmental Manager and key positions at Airly Mine including Mine Manager, Environment and Community Coordinator, Employees and Contractors and the Health, Safety, Environment and Community Committee (Section 4.1) - The Environmental Management Strategy provides that: - The publicly accessible Centennial Airly website includes Monthly Environmental Monitoring Reports (2018 -2021). - CCC minutes present presentations on environmental performance including an update on the Subsidence Monitoring incidents at the CCC meeting held on 27 October 2020 - Section 4.2 describes reporting of environmental performance to agencies and community including Annual Reviews, Annual Returns, Monthly Environmental Monitoring Reports, Community Consultative Committee presentations. - Section 2.5.2.4 documents community complaints and enquiries procedures; - Section 2.5.2.5 documents dispute resolution processes; - Section 5.2 describes corrective action processes for responding to non-compliances; and - Section 3.2 describes external reporting procedures in response to emergencies.		
			f) within the Environmental Management Strategy: - Sections 2.2.1 and 2.3 reference the management plans under SSD_5581. Although the plans are not attached, a diagram identifying the name (but not the document reference) of the management plans is included in Appendix 1.		

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	a clear plan depicting all the monitoring to be carried out in relation to the development. The Applicant must implement the approved Environmental Management Strategy for the development.		As the Environmental Management Strategy was approved by DPIE in 2018, this condition was assessed as Compliant. However, a recommendation has been included as although approved management plans required by SSD_5581 are available on the Centennial Airly website and monitoring requirements are included within these plans, a clear plan depicting all of the monitoring to be carried out at Airly Mine is not included in the Environment Management Strategy.		
6-2	Management Plan Requirements The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: - the relevant statutory requirements (including any relevant approval, licence or lease conditions); - any relevant limits or performance measures/criteria; - the specific performance indicators or triggers that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; - a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; - a program to monitor and report on the: - impacts and environmental performance of the development; - effectiveness of any management measures (see c above); - a contingency plan to manage any unpredicted impacts and their consequences; - a program to investigate and implement ways to improve the environmental performance of the development over time; - a protocol for managing and reporting any: - incidents; - complaints; - non-compliances with statutory requirements; and - exceedances of the impact assessment criteria and/or performance criteria; and - a protocol for periodic review of the plan.	- Western Region Noise Management Plan (June, 2018) - Western Region Air Quality and Greenhouse Gas Management Plan (April 2018) - Water Management Plan (July 2018) - Water Management Plan (October 2019) - Western Region Biodiversity Management Plan (August 2019) - Traffic Management Plan (July 2018) - Western Region Aboriginal Heritage Management Plan (October 2017) - Western Region Historic Heritage Management Plan (July 2018) - Exploration and Minor Surface Infrastructure Management Plan (July 2018) - Mining Operations Plan, Airly Mine Amendment A, 1 January 2018 to 31 December 2024 (2020) - Spitting and Quartering Extraction Plan ML 1331 (July 2018) - Subsidence Monitoring Management Plan (May 2018) - Water Management Plan (July 2017) - Biodiversity Management Plan (May 2018) - Land Management Plan (July 2018) - Heritage Management Plan (July 2018) - Public Safety Management Plan Management Plan (May 2018)	- The following management plans, required by SSD_5581 and approved by DPIE, were reviewed and assessed against the requirements of SSD_5581 Schedule 6, Condition 2: - Western Region Noise Management Plan - Western Region Air Quality and Greenhouse Gas Management Plan - Water Management Plan (including Surface Water and Groundwater Management Plan) - Western Region Biodiversity Management Plan - Traffic Management Plan - Western Region Aboriginal Heritage Management Plan - Western Region Historic Heritage Management Plan - Exploration and Minor Surface Infrastructure Management Plan - MOP (Rehabilitation Management Plan) - Spitting and Quartering Extraction Plan ML 1331 and supporting sub-plans Subsidence Monitoring, Water, Biodiversity, Land, Heritage and Public Safety Management Plans - Management plans were assessed as meeting the requirements of SSD_5581 Schedule 6, Condition 2 with the exception of the Water Management Plan (Centennial Airly, July 2018). The 2018 Water Management Plan does not identify the requirements of SSD_5581 Schedule 6, Condition 2(b) in Table 1-2 and does not include all of the management and reporting requirements for Condition 2 (e), (f), (g) and (h). The 2018 Water Management Plan was revised in 2019, to address these missing requirements e.g., a revised Table 1-2, Section 7 and new reporting Action Plan (Section 8). The revised 2019 Water Management Plan was submitted to DPIE for approval in October 2019 consequently, no further recommendations for Water Management Plan improvements were identified. - The Western Region Biodiversity Management Plan (April 2017) was revised in 2019 and submitted to DPIE. Approval has not been received. - The 2018 Water Management Plan (July 2018) was revised in 2019 and submitted to DPIE. Approval has not been received.	Non-compliant (NC-6: The 2018 Water Management Plan did not identify the requirements of SSD_5581 Schedule 6, Condition 2(b) in Table 1-2 and does not include all of the management and reporting requirements for Condition 2 (e), (f), (g) and (h).)	As the 2019 Water Management Plan had been revised to address feedback from DPIE and meet the requirements of SSD_5581 Schedule 4 Condition 13 and Schedule 6 Condition 2; and is waiting for approval by DPIE, no further recommendations have been made. NC-6 Recommendation 3: Consult with DPIE regarding the approval status of new and/or revised environmental management plans, programs and strategies.
6-3	Revision of Strategies, Plans and Programs Within 3 months of: (a) the submission of an incident report under condition 9 below; (b) the submission of an annual review under condition 11 below; (c) the submission of an audit report under condition 12 below; or (d) any modification to the conditions of this consent, (unless the conditions require otherwise), the Applicant must review the strategies, plans, and programs required under this consent, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary. <i>Note: This is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve the environmental performance of the development.</i>	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Incident Investigation Report (Centennial Airly, 2 December 2020) - Letter to Centennial Airly Warning Letter failure to complete photogrammetry and LiDAR capture survey in September 2019 (DPIE, 26 June 2020) - Letter to DPIE – Revision of strategies, plans and programs (Centennial Coal, 12 September 2018) 2018 IEA (MCW Environmental Consulting, 2018) - Airly Mine Response to 2018 IEA (Centennial Airly, 2018) - ECD, (2018 -2021)	- The status of Management Plans, including review and approval dates, is included in the 2018, 2019 and 2020 Annual Reviews. a) The following subsidence incidents were reported to DPIE, Resources Regulator and NPWS in 2020, and are the subject of a current investigation: - Subsidence effects greater than the EIS prediction of 125mm was measured on 31 January 2020 in the B-Line subsidence survey in January, March, April, June, August, September and October 2020. - A surface crack (Fracture 01) was identified on 7 July 2020 during visual surface inspections 5m west of GNSS unit (120 metres from the nearest cliff in the Cliff Zone of First Workings). - A surface crack (Fracture 02) was identified on 10 July during visual surface inspections 70 metres from the nearest cliff in the Cliff Zone of First Workings). As these incidents are the subject of a current DPIE investigation, the requirement to revise strategies, plans and programs has not been triggered. b) During the period of the IEA the following non-compliances/incidents were reported in the Annual Reviews during the period of the IEA: 2019 Annual Review: - Delay in commissioning the HVAS (2019 Annual Review) - Failure to complete subsidence survey due to access restrictions from bushfires (2019 Annual Review) - Failure to complete photogrammetry and LiDAR survey due to supplier issues (2019 Annual Review). 2020 Annual Review: - Surface cracking (Fracture 01) caused by failure of strata above the miniwall chain pillars leading to higher than predicted subsidence.	Compliant	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation																																				
			▪ Surface cracking (Fracture 02) caused by failure of strata above the miniwall chain pillars leading to higher than predicted subsidence. The non-compliances reported in the 2019 Annual Review did not trigger a revision of strategies, plans and programs. As the 2020 non compliances relating to subsidence impact (surface cracking) was under investigation at the time of preparing this IEA report, a review of strategies, plans and programs had not been completed. • c) The 2018 IEA included recommendations for the 2018 Water Management Plan. Centennial Airly advised in the responding 2018 IEA Airly Mine Action Plan that these changes were included in the 2019 Water Management Plan, and changes were verified in this IEA (refer this Table SSD_5581 Schedule 4 Conditions 12 and 13). • d) Following the completion of MOD 1, Centennial Coal advised DPIE that a review of strategies, plans and programs had been undertaken, and that a revision of existing management plans had not been required. • The ECD automatically sends out a reminder to the Environment and Community Coordinator that a review of management plans is required following submission of Annual Review and Independent Environmental Audit.																																						
6-4	Updating & Staging of Strategies, Plans or Programs To ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development, the Applicant may submit revised strategies, plans or programs required under this consent at any time. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis. The Secretary may approve a revised strategy, plan or program required under this consent, or the staged submission of any of these documents, at any time. With the agreement of the Secretary, the Applicant may prepare the revised or staged strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this consent. <i>Notes:</i> • While any strategy, plan or program may be submitted on a staged basis, the Applicant must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.	• 2018 Annual Review (Centennial Airly, 2019) • 2019 Annual Review (Centennial Airly, 2020) • 2020 Annual Review (Centennial Airly, 2021) • Letter from DPE dated 8 February 2017 re Airly Mine Extension Project SSD_5581 Management Plans. • Airly Mine Water Monitoring 2019 Annual Report (GHD, March 2020) • Western Region Aboriginal Cultural Heritage Management Plan, (Centennial Airly, July 2017) • Western Region Air Quality and Greenhouse Gas Management Plan (April 2017)	• The 2018, 2019 and 2020 Annual Reviews includes a summary of review and approval dates for management plans for the Airly Mine (Tables 8 and 10 respectively). • The status of management plans required by SSD_5581 including revision and approval dates during the period of the IEA, is: <table><thead><tr><th>Management Plan (date)</th><th>Revision during the period of the IEA (date)</th><th>Approved by, date</th></tr></thead><tbody><tr><td>Mining Operations Plan (MOP): 1 January 2018 to 31 December 2024) (September 2018)</td><td> • December 2017 • Amendment A, March 2020 </td><td> • Resources Regulator, 10 January 2018 • Resources Regulator, August 2020 </td></tr><tr><td>Environmental Management Strategy AIR-MP-2196 (April 2017)</td><td>July 2018</td><td>DPIE, 1 November 2018</td></tr><tr><td>Water Management Plan (July 2018)</td><td> • July 2018 • October 2019 </td><td> • DPIE, 7 September 2018 • 2019: Not approved yet </td></tr><tr><td>Western Region Biodiversity Management Plan (April 2017)</td><td>August 2019</td><td>No</td></tr><tr><td>Western Region Noise Management Plan (2018)</td><td>June 2018</td><td> • DPIE, 4 July 2018 • DPIE, September 2018 </td></tr><tr><td>Western Region Air Quality and Greenhouse Gas Management Plan (April 2017)</td><td>April 2018</td><td>DPIE, 4 July 2018</td></tr><tr><td>Western Region Historic Heritage Management Plan (February 2017)</td><td>No</td><td>DPIE, 4 July 2018</td></tr><tr><td>Western Region Aboriginal Cultural Heritage Management Plan (July 2017)</td><td>No</td><td>DPIE, 27 October 2017</td></tr><tr><td>Airly Bushfire Management Plan (June 2020)</td><td>No</td><td>N/A</td></tr><tr><td>Traffic Management Plan (2017)</td><td>July 2018</td><td>DPIE, 7 September 2018</td></tr><tr><td>Exploration Activities and Minor Surface Infrastructure Management Plan (July 2018)</td><td>No</td><td>DPIE, 1 November 2018</td></tr></tbody></table> • The management plans include measures to improve the environmental performance of the development e.g.: ○ HVAS air sampler at Centennial Airly) (Air Quality and Greenhouse Management Plan); ○ The use of site specific measures included within Extraction Plans prior to be prepared and approved in accordance with SSD_5581 Schedule 3 Condition 2 prior to any first workings within the Cliff Line Zone and Zone of First Workings or secondary workings (Aboriginal Heritage Management Plant Plan) ○ As triggered by the 2018 Water Management Plan, a review of trends in water quality results in annual specialist reports (e.g., Water Monitoring 2019 Annual Report (GHD, 2020) include assessment of impact from current and predicted for following year operations providing opportunity to improve environmental performance.	Management Plan (date)	Revision during the period of the IEA (date)	Approved by, date	Mining Operations Plan (MOP): 1 January 2018 to 31 December 2024) (September 2018)	• December 2017 • Amendment A, March 2020	• Resources Regulator, 10 January 2018 • Resources Regulator, August 2020	Environmental Management Strategy AIR-MP-2196 (April 2017)	July 2018	DPIE, 1 November 2018	Water Management Plan (July 2018)	• July 2018 • October 2019	• DPIE, 7 September 2018 • 2019: Not approved yet	Western Region Biodiversity Management Plan (April 2017)	August 2019	No	Western Region Noise Management Plan (2018)	June 2018	• DPIE, 4 July 2018 • DPIE, September 2018	Western Region Air Quality and Greenhouse Gas Management Plan (April 2017)	April 2018	DPIE, 4 July 2018	Western Region Historic Heritage Management Plan (February 2017)	No	DPIE, 4 July 2018	Western Region Aboriginal Cultural Heritage Management Plan (July 2017)	No	DPIE, 27 October 2017	Airly Bushfire Management Plan (June 2020)	No	N/A	Traffic Management Plan (2017)	July 2018	DPIE, 7 September 2018	Exploration Activities and Minor Surface Infrastructure Management Plan (July 2018)	No	DPIE, 1 November 2018	Compliant	
Management Plan (date)	Revision during the period of the IEA (date)	Approved by, date																																							
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Western Region Noise Management Plan (2018)	June 2018	• DPIE, 4 July 2018 • DPIE, September 2018																																							
Western Region Air Quality and Greenhouse Gas Management Plan (April 2017)	April 2018	DPIE, 4 July 2018																																							
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Exploration Activities and Minor Surface Infrastructure Management Plan (July 2018)	No	DPIE, 1 November 2018																																							
6-5	Relationships between Management Plans The Water, Biodiversity and Heritage Management Plans required by conditions 13,15 and 19 of Schedule 4, respectively, are to be prepared in respect of all parts of the development that are not covered by an Extraction Plan approved under condition 7 of Schedule 3. In particular, those management plans should address all areas subject to existing or proposed surface disturbance associated with the development.		• The following management plans (as referred to in this condition) have been prepared in respect of the whole of the Airly operation / development. ○ Water Management Plan, Airly Mine, April 2017 ○ Western Operations, Regional Biodiversity Management Plan, August 2019 ○ Western Region, Aboriginal Cultural Heritage Management Plan, July 2017 ○ Western Region, Historic Heritage Management Plan, March 2017	Compliant																																					

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
6-6	Consolidation of Strategies, Plans or Programs With the approval of the Secretary, the Applicant may incorporate any strategies, plans or programs required by this consent (except those required under condition 7 of Schedule 3) with the strategies, plans and programs required for Centennial Coal's mining operations in the Lithgow Local Government Area.	Letter to Centennial Coal Airly Mine Extension Project SSD_5581 Management Plans (DPIE, 8 February 2017).	- The previous IEA reported that DPIE approved the consolidation of Centennial Coal's Noise Management Plan, Air Quality Management Plan, Biodiversity Management Plan, Heritage Management Plan and Water Management Plan required under Development Consent SSD_5581 into Centennial's regional management plan framework i.e., Western Region Management Plans with site specific Appendices for Airly. - Subsequent revisions of these consolidated western region plans have been approved by DPIE during the period of this IEA.	Compliant	
6-7	Adaptive Management The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the performance measures and/or criteria in Schedules 3 and 4. Any exceedance of these performance measures and/or criteria constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.	- Letter to DPIE Notification of TARP Level Orange Level B Incident (Centennial Airly, 10 July 2020) - Incident Investigation Report (Centennial Airly, 2 December 2020) - Monthly Environmental Monitoring Report (2018 -2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Centennial Airly reported that exceedance of the EIS subsidence effect predictions and subsidence impact (surface cracking) performance measures in SSD_5581 Schedules 3 had occurred during the period of the IEA. DPIE and the IEP were notified of this incident in February 2020 and following further investigations and consultation, an Incident Investigation Report was provided to regulatory agencies (Commonwealth Department of Agriculture, Water and Environment (Compliance Division), NPWS, Resources Regulator and DPIE) in December 2020. - The Incident Investigation Report records consultation undertaken in 2020 between Centennial Airly and stakeholders (pages 5 and 6) and, that following the exceedance of the EIS subsidence effect prediction on 31 January 2020, a number of adaptive management actions were taken including: - Immediate actions (in accordance with TARP): initial visual inspection of the surface (week commencing 10 February 2020). - Presentation to the Department of Planning, Industry and Environment and the Airly Mine Independent Expert Panel members (19 February 2020). - Independent review (MSEC) of subsidence data and surface site inspection provided to DPIE and Resources Regulator (10 June 2020). - Updated Subsidence Model (Strata²) provided to DPIE and Resources Regulator (10 June 2020). - Further review of Subsidence data (Strata²) (25 September 2020). - Updated modelling (UNSW, MSEC, IEP and ICT) (December 2020). - Increasing the length of pillars from MW5 onwards. - Increasing the width of pillars from MW10 onwards for Mt Airly. - The Incident Investigation Report also documents that an Extraction Plan to increase the width of chain pillars (MW10-MW15), to support the adaptive management measure taken by Centennial Airly to transition Airly Mine back to subsidence less than EIS predictions, has been submitted to the Resources Regulator for approval. At the time of preparing this IEA, approval for this Extraction Plan had not been received. - The 2020 Annual Review identifies the following incident/non-compliances: - Surface cracking (Fracture 01) caused by failure of strata above the miniwall chain pillars leading to higher than predicted subsidence. Action that has been taken, or will be taken, to mitigate adverse effects of the incident was reported as a risk assessment with landowner (National Parks and Wildlife Service) investigating remediation options; and that change chain pillar width in MG10 will be changed to 60m to form a barrier to limit subsidence, and subsequent chain pillars will be increased to reduce subsidence below 125mm. - Surface cracking (Fracture 01) caused by failure of strata above the miniwall chain pillars leading to higher than predicted subsidence. Action that has been taken, or will be taken, to mitigate adverse effects of the incident was reported as a risk assessment with landowner (National Parks and Wildlife Service) investigating remediation options; and that change chain pillar width in MG10 will be changed to 60m to form a barrier to limit subsidence, and subsequent chain pillars will be increased to reduce subsidence below 125mm. - With the exception of surface cracking incident/non-compliances in the 2020 Annual Review, review of the 2018, 2109 and 2020 Annual Reviews and monthly Environmental Monitoring Reports, identified no other exceedances of criteria and / or performance measures in SSD_5581 and EPL 12374 during the period of the IEA. - MCW Environmental has assessed this condition as Compliant, as although MCW Environmental is not a subject matter expert on subsidence and is unable to comment on the adequacy of immediate actions and/or adaptive management following the subsidence effects measurements exceeding EIS predictions and subsidence impact (surface cracking) in 2020; the implementation of TARP actions, consultation with DPIE, IER, Resources Regulator and CCC, and engagement of subsidence subject matter experts to prepare specialist reports, has been assessed as adequate. MCW Environmental note that DPIE is currently investigating whether Centennial Coal has potentially breached Section 4.2(1)(b) of the <i>Environmental Planning and Assessment Act 1979</i>, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent. To date, remediation measures have not been identified by DPIE.	Compliant	
COMMUNITY CONSULTATIVE COMMITTEE					
6-8	The Applicant must operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. This CCC must be operated in accordance with the Guidelines for Establishing and Operating Community Consultative	- Email to MCW Environmental (Chair CCC, 2 March 2021) - CCC Annual Report year ended 31/12/2020 (CCC Chair, undated)	The Airly Mine Community Consultative Committee (CCC) met nine times in person and a presentation only (COVID-19) during the period of the IEA. Minutes and copies of presentations are available on the Centennial Airly website with representatives from the community, Capertee Valley Alliance, Lithgow City Council, Colo Committee, NPWS, and Centennial Airly in attendance at meetings (e.g., 15 October 2019, 5 August 2020 and 27 October 2020).	Non-compliant (NC-8: CCC Annual Reports for 2018 and 2019 were not provided).	NC-8 Recommendation 4: CCC Chair to provide an Annual Report to DPIE (in accordance with

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	Committees for Mining Projects (Department of Planning, 2007) or its latest version. Notes: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent	https://www.centennialcoal.com.au/operations/airly/ - Community Consultative Committee (CCC) – Minutes of the Airly Mine CCC meetings (2018 -2021) - Airly Mine Community Consultative Committee (CCC) Presentations (2018 – 2021) - Community Consultative Committee Guidelines, State Significant Projects (DPIE, November 2016)	- Centennial Airly monitored privately owned bores to the east of the Airly Project Area during the period of the IEA. This program was an Airly Mine Community Consultative Committee initiative designed to help improve monitoring transparency and trust with the broader community. - The CCC is chaired by an independent chairperson. In response to IEA consultation, the following feedback was received from the CCC Chair "...our committee are happy with the response Airly mine management give to environmental issues. They are quick to address issues raised and communicate with the affected parties". Refer Appendix F of this 2021 IEA report. Major issues identified by the CCC that were reportedly addressed by Centennial Airly included: - The impact of Airly Mine on groundwater and water supply above and below surface. The CCC appointed an independent auditor to conduct an external review of the 2019 Annual Water Monitoring Report (Joshua Lloyd, Zoic) with review findings reported to the CCC at the 27 October 2020 CCC. No further actions were identified. - Rail transport of water – detailed discussion and information regarding that the water was sourced from private water supplies and did not impact on adjacent landowners or water users. - Subsidence – CCC were aware of subsidence issues above the allowable limit in the mine's Development Consent, and that Centennial Airly was working with consent authorities to address the issue. - Solar farm – commissioning of the 2 MW solar farm has been well received by the local community. - Development modification – great deal of discussion and Centennial Airly has withdrawn the application. - Community compliant- very low level of community complaints with isolated noise and visual issues addressed by Centennial Airly. - An Annual Report was provided for year ending 31 December 2020. No annual reports were provided for 2018 and 2019. It is the responsibility of the CCC chair, appointed by DPIE, to provide an annual report (in accordance with CCC Guidelines. Centennial Airly is not responsible for the provision of CCC Annual Reports.		Community Consultative Committee Guidelines, State Significant Projects (DPIE, November 2016).
REPORTING					
6-9	Incident Reporting The Applicant must immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant must provide the Secretary and any relevant agencies with a detailed report on the incident and such further reports as may be requested.	- Letter to DPIE Notification of TARP Level Orange Level B Incident (Centennial Airly, 10 July 2020) - Letter to DPIE, Incident Notice Condition 9 of Schedule 6 for surface crack (Fracture 2), surface crack (Fracture 1) and mine subsidence greater than 125mm. (Centennial Airly, 24 November 2020) - Letter to Centennial Airly Incident Subsidence Impact of Surface Fractures (DPIE, 11 December 2020) - Email with attached Incident Notification to Commonwealth Department of Agriculture, Water and Environment (Compliance Division) (Centennial Airly, 25 November 2020) - Email with attached Incident Investigation Report 2 December 2020 to Commonwealth Department of Agriculture, Water and Environment (Compliance Division) (Centennial Airly, 25 November 2020) - Email with attached Incident Notification Surface Crack 2 to NPWS (Centennial Airly, 24 November 2020) - Email with attached Incident Investigation Report 2 December 2020 to NPWS, (Centennial Airly, 25 November 2020) - Letter to Resources Regulator WHS Act 2011 Section 155 Notice NTCE0006637 in response to request for information on subsidence impacts since 10 July 2020 (Centennial Airly, 16 October 2020) - Monthly Environmental Monitoring Report (2018 -2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- The 2020 Annual Review identifies the following incident/non-compliances: - Surface cracking (Fracture 01) caused by failure of strata above the miniwall chain pillars leading to higher than predicted subsidence. Action that has been taken, or will be taken, to mitigate adverse effects of the incident was reported as a risk assessment with landowner (National Parks and Wildlife Service) investigating remediation options; and that change chain pillar width in MG10 will be changed to 60m to form a barrier to limit subsidence, and subsequent chain pillars will be increased to reduce subsidence below 125mm. - Surface cracking (Fracture 02) caused by failure of strata above the miniwall chain pillars leading to higher than predicted subsidence. Action that has been taken, or will be taken, to mitigate adverse effects of the incident was reported as a risk assessment with landowner (National Parks and Wildlife Service) investigating remediation options; and that change chain pillar width in MG10 will be changed to 60m to form a barrier to limit subsidence, and subsequent chain pillars will be increased to reduce subsidence below 125mm. - Table 23 in the 2020 Annual Review (which includes specialist Strata²'s 2020 Subsidence Monitoring Report) reports that the maximum subsidence from Panel and Pillar Extraction mining in the Mt Airly Panel and Pillar zone exceeded EIS 125mm subsidence effect predictions on the A, B, C and D survey lines during 2020; and exceeded the 3mm/m tilt maximum (measured as maximum tilt average over 3 pegs) on the B survey line. - DPIE and the IEP were notified of the exceedance of EIS subsidence effect predictions in February 2020 and following further investigations and consultation, an Incident Investigation Report (Centennial Airly, 2 December 2020) was provided to regulatory agencies (DPIE, Commonwealth Department of Agriculture, Water and Environment (Compliance Division), NPWS and Resources Regulator) in December 2020. - A letter from DPIE (11 December 2020) states "<i>I refer to Centennial Airly Pty Limited (Centennial Coal) incident notification and the detailed incident report submitted to the Department Planning, Industry and Environment (Department) in relation to subsidence impacts of surface fractures greater than 125mm, identified from subsidence monitoring on 31 January 2020, which is attributed to mining operations from Airly Coal Mine SSD 5581 (Consent).....The Department notes the notification and detailed incident reports have been submitted in accordance with the requirements of Schedule 6, Condition 9 of the Consent. Please be advised the Department has commenced an investigation into the incident and is carefully reviewing the details provided. The Department is investigating whether Centennial Coal has potentially breached Section 4.2(1)(b) of the Environmental Planning and Assessment Act 1979, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent</i>" - The Incident Investigation Report (Centennial Airly, 2 December 2020) documents consultation (including presentations, meeting and correspondence) that was undertaken in 2020 between Centennial Airly and stakeholders (pages 5 and 6) with the following key notifications by Centennial Airly: 10 July 2020: Submission of notification to DPIE regarding TARP Level Orange Level B Incident and the identification of a subsidence crack (Fracture 01) associated with mining in	Compliant	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
			the Panel and Pillar Mining Zone. This notification was also reportedly provided to Resources Regulator. 1 September 2020: Re-submission of the subsidence crack notification (Fracture 01) to DPIE with a request it be provided to the Airly Mine IEP. 3 September 2020: Provision of additional information to DPIE requested by the Airly Mine IEP. 16 October 2020: Notification to Resources Regulator of the second surface crack (Fracture 02) via a Section 155 Notification under the Work Health and Safety Act 2011. 24 November 2020: Submission of a formal notification of an incident to DPIE in accordance with Schedule 6 Condition 9 of the SSD 5581 development consent. 25 November 2020: Provision of incident notification to the Resources Regulator, NPWS and the Commonwealth Department of Agriculture, Water and Environment. - The Incident Investigation Report (Centennial Airly, 2 December 2020) documents that following the initial measurement of subsidence effects that exceeded EIS predictions on 31 January 2020, a number of actions were taken by Centennial Airly including: - Week commencing 10 February 2020: Immediate actions (in accordance with TARP): initial visual inspection of the surface. 19 February 2020: Presentation to the Department of Planning, Industry and Environment and the Airly Mine Independent Expert Panel members. 10 June 2020: Independent review (MSEC) of subsidence data and surface site inspection provided to DPIE and Resources Regulator. 10 June 2020: Updated subsidence model (Strata²) provided to DPIE and Resources Regulator. 25 September 2020: Further review of subsidence data (Strata²). - December 2020: Updated modelling (UNSW, MSEC, IEP and ICT). - The Incident Investigation Report (Centennial Airly, 2 December 2020) documents that an Extraction Plan to increase the width of chain pillars (MW10-MW15), to support the adaptive management measure taken by Centennial Airly to transition Airly Mine back to subsidence less than EIS predictions, was submitted to the Resources Regulator for approval. At the time of preparing this IEA, approval for this Extraction Plan was pending. - Review of the 2018, 2109 and 2020 Annual Reviews and monthly Environmental Monitoring Reports, identified that, with the exception of surface cracking, there were no other exceedances of performance measures in SSD_5581 Schedules 3 and 4, or exceedance of EPL concentration and volume limits, during the period of the IEA that may trigger the requirement for an investigation report under SSD_5581 Schedule 6 Condition 9. - Although the exceedance of the subsidence effect performance criteria was identified in January 2020 and subsidence impact (surface cracking (Fracture 01 and Fracture 02) was identified in July 2020); the Incident Notification and Investigation Report was provided to DPIE on 24 November and 2 December 2020, respectively. Between the identification of the subsidence effect exceeding EIS predictions in January 2020, subsidence impact (surface cracking (Fracture 01 and Fracture 02) in July 2020), and Incident Investigation Report in December 2020, numerous consultations with regulators, the IEP and the CCC; and investigations by subsidence subject matter experts was undertaken. Following the receipt of the Incident Investigation Report (Centennial Airly, 2 December 2020) DPIE provided a written response to Centennial Airly specifically stating that <i>the Department notes the notification and detailed incident reports have been submitted in accordance with the requirements of Schedule 6, Condition 9 of the Consent</i>. It is not clear how DPIE has determined that the reporting has been compliant with the approval, as the Incident Report was not provided within the 7 days of the initial subsidence exceedance in January 2020, as is required by SSD_5581 Schedule 6 Condition 9. However, as DPIE have accepted the timing of the provision of the Incident Notification and subsequent detailed Investigation Report, this condition has been assessed as Compliant.		
6-10	Regular Reporting The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.	https://www.centennialcoal.com.au/operations/airly/ - Monthly Environmental Monitoring Report (2018 -2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Centennial Airly provides monthly environmental monitoring reports which are available to the public on the Centennial Airly website. They include the following monitoring data: - Rainfall and temperature data recorded at the site meteorological station. - Air quality monitoring data from depositional dust gauges. - Surface water quality results for discharges from licensed discharge points. - Discharge volumes from licensed discharge points. - Community complaints. - Coal transport data (until October 2019). - The 2018, 2019 and 2020 Annual Reviews provide a summary and trends of environmental monitoring results and performance and also include specialist environmental monitoring (in Appendices) undertaken in addition to the regular monthly environmental monitoring. These reports are available to the public on the Centennial Coal / Airly website.	Compliant	
6-11	Annual Review By the end of March each year following the commencement of development under this consent, or other timing as may be agreed by the Secretary, the Applicant must submit a report to the Department reviewing the environmental	https://www.centennialcoal.com.au/operations/airly/ - Monthly Environmental Monitoring Report (2018 -2021) 2018 Annual Review (Centennial Airly, 2019)	The 2018, 2019 and 2020 Annual Reviews include a self-assessment against the requirements of SSD_5581 Schedule 6 Condition 11 and the Extension Project EIS Section 4.14 commitment regarding environmental management and were submitted to DPIE by the end of March.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	performance of the development to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the: - the relevant statutory requirements, limits or performance measures/criteria; - the monitoring results of previous years; and - the relevant predictions in the documents listed under condition 2(a) and the IPRP's Report; (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the development; (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the next year to improve the environmental performance of the development.	2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	(a) The 2018, 2019 and 2020 Annual Reviews include a summary of operations for the current reporting year, previous reporting year, next reporting year and the approved limit is provided in Section 4 (2019). Rehabilitation progress is reported in Section 9 (2019) and Section 10 (2020). (b) The 2018, 2019 and 2020 Annual Reviews provides environmental performance and performance criteria (Sections 6,7, 8 and 9 (2019)) and specialist environmental monitoring (Appendices). - This IEA has assessed compliance against Development Consent SSD_5581 and has not assessed compliance with the IPRP's Report. (c) The 2018, 2019 and 2020 Annual Reviews includes non-compliances during the reporting period in Section 12 (2019) and details actions that have been, or will be, taken to mitigate any adverse effects. (d) The 2018, 2019 and 2020 Annual Reviews presents trends in monitoring data in Sections 7 and 8 (2019) (e) The 2018, 2019 and 2020 Annual Reviews identify discrepancies between the predicted and actual impacts of the development and analyse the potential cause of any significant discrepancies in Sections 7 and 8 (2019). Subsidence effect measurements in excess of EIS predictions and subsidence impact (surface cracking) were reported in Section 8.9 in the 2020 Annual Review. (f) The 2018, 2019 and 2020 Annual Reviews identifies activities in the next reporting period to improve environmental performance e.g., 2018 and 2019 Annual Reviews identified the following projects: - Continue works in relation to the installation of approved pit top infrastructure including improved hydrocarbon storage area, improved diesel refuelling area and install new washdown bay. - Commission the Airly Solar Farm in March/April 2020. This project will reduce Airly's grid energy consumption and lower the sites greenhouse emissions. - Improve onsite water management system to prevent unlicensed discharge events. The proposed upgrades include construction of Rail Loop Pollution Control Dam (Rail Loop PCD) and associated pump and pipeline upgrades. - Continue to monitor privately owned bores to the east of the Project in an attempt to improve monitoring transparency and trust with the community. - Each of these projects were observed to have been progressed		
6-12	INDEPENDENT ENVIRONMENTAL AUDIT Within one year of the date of commencement and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and assess whether it is complying with the requirements in this consent, and any other relevant approvals, relevant EPL/s and/or Mining Lease/s (including any assessment, plan or program required under these approvals); (d) review the adequacy of any strategies, plans or programs required under the abovementioned approvals; and (e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under these approvals; and	2018 IEA (MCW Environmental, 2018)	- This 2021 IEA was commissioned within 3 years of the previous IEA. The period of this IEA is from the 13 February 2018 (the day following the last day of the previous IEA period three years ago) to 10 February 2021 (the day prior to the first day of the site visit conducted as part of this IEA). - The MCW Environmental 2021 IEA team was approved by DPIE on 13 January 2021. - The Lead Auditor is certified as a Lead Auditor with Exemplar Global for Environmental Compliance, Environmental Reporting, Environmental Management and Site Contamination. - In accordance with SSD_5581 Schedule 4 Condition 14, Mr Noel Merrick, Senior Principal Hydrogeologist of Hydro Algorithmics, was proposed and endorsed by DPIE to undertake the independent review of the Groundwater Management Plan. - The 2021 IEA invited feedback from the following agencies: DPIE, Resources Regulator, EPA, OEH, NPWS, Lithgow City Council and CCC (refer Appendix F of the main 2021 IEA report). Feedback was received from BCD, DPIE and CCC. - The 2021 IEA assessed the environmental performance of the project against the Development Consent SSD_5581 conditions of approval, EPL 12374, Mining Lease 1331 and plans and programs required by these approvals (refer Appendix A of this 2021 IEA report). - The 2021 IEA reviewed the adequacy of strategies, plans or programs required under the approvals (refer various conditions throughout Appendix A of this 2021 IEA). - The 2021 IEA included recommendations to improve environmental performance of the development (refer Section 2 and Appendix A of this 2021 IEA report).	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	(f) be conducted and reported to the satisfaction of the Secretary. <i>Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.</i>	Independent Audit Post Approval Requirements (DPIE, 2020)	The 2021 IEA was conducted in accordance with Independent Audit Post Approval Requirements (DPIE, 2020).		
6-13	Within 12 weeks of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report and a timetable for the implementation of these recommendations as required.	- Letter to Centennial Airly IEA Extension of Time to 25 May 2018 (DPIE, 5 February 2018) - Letter to DPIE Request for further extension for submission of 2018 IEA (Centennial Airly, 18 May 2018) - Letter to Centennial Airly IEA Extension of Time to 15 June 2018 (DPIE, 23 May 2018) https://www.centennialcoal.com.au/operations/airly/	- An extension for submission of the 2018 IEA Report for submission of the IEA Report and response to submissions by 25 May 2018 was granted by DPIE. - A request was submitted to DPIE for a further extension of time for submission of the IEA (delays due to assessment of technical mining design, subsidence monitoring and associated conditions). - A further extension for submission of the 2018 IEA Report for submission of the IEA Report and response to submissions by 15 June 2018 was granted by DPIE. - The 2018 IEA report was submitted to DPIE on 15 June 2018. - The Centennial Airly website states that the date the 2018 IEA and the Centennial Airly response to recommendations was available on the Centennial Airly website was 15 June 2018.		

ACCESS TO INFORMATION

6-14	ACCESS TO INFORMATION The Applicant must: (a) make the following information publicly available on its website: - the documents listed under condition 2(a); - the IPRP's report; - all current statutory approvals for the development; - approved strategies, plans or programs required under the conditions of this consent; - a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; - a complaints register, which is to be updated on a monthly basis; - minutes of CCC meetings; - the last five annual reviews; - any independent environmental audit, and the Applicant's response to the recommendations in any audit; - any report and/or advice issued by the IEP to the Applicant in respect of a draft or approved Extraction Plan; - any other matter required by the Secretary; and (b) keep this information up to date, to the satisfaction of the Secretary	https://www.centennialcoal.com.au/operations/airly/	- Access to information was in compliance with the requirements of this condition. - The Centennial Coal / Airly website was reviewed in February and March 2021 and observed to include the following up to date information: - The EIS (Environmental Assessments) and Statement of Environmental Effects listed in the Definitions section of SSD_5581. - Development Consent SSD_5581. - EPBC Approval 2013/7606 dated 18 May 2017. - Environment Protection Licence 12374. - Mining Lease No. 1331 renewal dated 8 May 2014. - Authorisation 232 renewal dated 21 May 2015. - Airly Mine Extraction Plan, Splitting and Quartering (May 2019). - Approved Environmental Management Strategy and management plans required under this consent. - Monthly Environmental Monitoring Reports. 2015, 2016, 2017, 2018 and 2019 Annual Reviews. - Community Complaints Register. - Minutes of the CCC Meetings. 2015 and 2018 IEAs and Centennial Airly response to IEA recommendations.	Compliant	
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STATEMENT OF COMMITMENTS (Source: Environmental Impact Statement, Airly Mine, Airly Mine Extension Project, SSD_5581 (Centennial Airly & Golder, 2014) Table 11.1 Existing Management Plans and Procedures and Table 11.3: Project Operation)

Management Plan and Procedures

1	Mining Operations Plan The Mining Operations Plan will be revised in accordance with the Department Guidelines		Refer SSD_5581 Schedule 4 Condition 27 (b).	Compliant	
2	Landscape and Rehabilitation Management Plan The plan will be superseded by a new Rehabilitation Management Plan and will be prepared in accordance with the conditions of the new Development Consent.		Refer SSD_5581 Schedule 4 Condition 27.	Compliant	
3	Environmental Monitoring Plan The Plan will be updated in accordance with the conditions of the new Development Consent.		Refer SSD_5581 Schedule 6 Condition 1.	Compliant	
4	Stakeholder Engagement Plan The Plan will be updated in accordance with the conditions of the new Development Consent.	- Splitting and Quartering Extraction Plan (Centennial Airly, May 2019) - Mt Airly Panel and Pillar Mining Zone Extraction Plan (Centennial Airly, April 2019)	Stakeholder identification and engagement is included as Section 2 of the Extraction Plans.	Compliant	
5	Air Quality Management Plan		Refer SSD_5581 Schedule 4 Condition 7.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	The Plan will be updated in accordance with the conditions of the new Development Consent.				
6	Noise Management Plan The Plan will be updated in accordance with the conditions of the new Development Consent.	•	• Refer SSD_5581 Schedule 4 Condition 4.	Compliant	
7	Water Management Plan The Plan will be updated in accordance with the conditions of the new Development Consent	•	• Refer SSD_5581 Schedule 4 Condition 13 and Schedule 6 Condition 2.	Non-Compliant (NC-7: 2018 Water Management Plan)	Refer SSD_5581 Schedule 6 Condition 2(b).
8	Waste Minimisation and Management Plan The Plan will be superseded by a Waste Management Plan and will be prepared in accordance with the conditions of the new Development Consent.	•	• Refer SSD_5581 Schedule 4 Condition 23.	Compliant	
9	Fire Management Plan The Plan will be updated in accordance with the conditions of the new Development Consent.	•	• Refer SSD_5581 Schedule 4 Condition 22.	Compliant	
10	Strata Failure Management Plan This plan will be reviewed in consultation relevant geotechnical expertise to address any changes in mining methodology approved in the new consent. This review will include provisions for monitoring and management actions defined in Section 8.6.	- Report of the Independent Review Panel Established to Review and Report on Accuracy and Reliability of Mine Subsidence Impacts on Sensitive Features Across the Airlly Mine Extension Project Application Area (Ken Mills, SCT; Ismet Canbulat, UNSW; Don Kay, MSEC; 1 July 2016) - Incident Investigation Report (Centennial Airlly, 2 December 2020)	- The Independent Review Panel Report, dated 1 July 2016, reviewed and reported on the accuracy and reliability of mine subsidence impacts on sensitive features across the Airlly Mine Extension Project Application Area. - In response to subsidence effect exceeding EIS predictions and subsidence impact (surface cracking), in December 2020 an Incident Investigation Report was provided to DPIE, Commonwealth Department of Agriculture, Water and Environment (Compliance Division), NPWS and Resources Regulator. The report states" <i>Centennial Airlly implements an extensive integrated monitoring system comprising underground, surface, and remote monitoring systems that has been progressively developed over a number of years in consultation with key stakeholders, monitoring experts and the Airlly Mine IEP. In summary, the surveys undertaken and timing for surveys include:</i> <i>Conventional subsidence monitoring undertaken after the first quarter of panel extraction.</i> <i>3D survey of subsidence lines and prisms are carried out after the third quarter of panel extraction. This is done in practice at the end of each panel to capture all subsidence from that panel.</i> <i>Monitoring of Global Navigation Satellite System Continuously Operating Reference Stations is undertaken in real time with daily average data recorded.</i> <i>3D and high resolution vertical photogrammetry is undertaken 6 monthly.</i> <i>The Airlly Mine IEP considered the current subsidence monitoring program adequate for the management of the increased subsidence levels.</i> - MCW Environmental are not experts in strata failure. This IEA has assessed compliance against Development Consent SSD_5581 (as modified) and has not assessed compliance with the 2016 IPRP's Report. This SoC was not assessed as part of this IEA.		
Project Operation					
11	All operations are undertaken in a manner that will minimise the environmental impacts associated with the Project		• Refer SSD_5581 Schedule 2 Condition 14.	Compliant	
12	Hours of Operation All operations are undertaken within the approved operating hours.		• Refer SSD_5581 Schedule 2 Condition 7.	Compliant	
13	Subsidence All subsidence impacts to surface sensitive features are minimised. Mining operations will be conducted in accordance with the design parameters and those parameters will be implemented in the areas defined in this EIS. A new Extraction Plan will be developed as required by the new consent and in accordance with any requirements of Mining Act 1992. This Plan will provide detail around the management of subsidence impacts on the natural and built environment. The Plan is supported by a Subsidence Monitoring and Reporting Programme and Community Consultation Process. The new Plan will incorporate requirements for mine design criteria, implementation, monitoring, management of mining systems and response plans to manage impacts to landscape, surface water, groundwater, and ecology impacts identified in as		• Refer SSD_5581 Schedule 3 (Note: The SOC does not include subsidence performance in accordance with EIS predictions consequently, this condition was assessed as Compliant)	Compliant	

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	identified in Chapter 8.0 and in Sections 10.1, 10.2 and 10.3 of this EIS. The Plan will be developed in consultation with DITRIS (DRE) and OEH (land owner). The Plan will include subsidence management elements as follows. - Visual inspection of all mining areas prior, during and after mining activities will be undertaken. - Subsidence monitoring of initial panel and pillar mining on Mount Airly to confirm mining system performance and establish correlation between surface subsidence and underground geotechnical monitoring. - Ongoing underground geotechnical monitoring to demonstrate mining system performance will be undertaken. - Implement where practical remote subsidence monitoring techniques.				
14	Surface Water, Groundwater, Geomorphology and Aquatic All surface water groundwater and aquatic impacts are minimised to the greatest extent possible The existing Water Management Plan for Airly Mine will be revised, including the preparation of a Groundwater Monitoring and Management Plan (GMMP). The GMMP will include the continuation of the existing groundwater monitoring program as outlined in Section 3.14.4, as well as the following: - Additional groundwater monitoring bores will be installed during the pre-mining phase within Gap Creek and Genowlan Creek alluvium in the areas of predicted groundwater drawdown and monitored for groundwater levels and quality (where accessible). An additional four monitoring bores (including loggers) are planned to be installed in late 2014. - Daily groundwater volumes transferred to the surface facilities area will be monitored. - The GMMP will establish critical threshold levels for groundwater levels and groundwater quality to trigger additional assessment and management and will define the mechanism for identifying and reporting exceedances. Action will be taken if the Level 1 minimal impact considerations (or other critical threshold levels) are found to be exceeded. - Groundwater monitoring data will be audited on an annual basis and compared to hydrogeological modelling predictions. The GMMP will define the mechanism for identifying and reporting variations from predictions. - Should more than 278 ML/year of groundwater flow into the underground mine workings (i.e. more than the existing WALs) due to greater than predicted storage within the Permian strata (particularly within the old shale workings), it will be necessary for Centennial Airly to purchase an additional groundwater WAL to cover the excess groundwater volume. - Monitor current surface and groundwater monitoring points. The surface water monitoring will include the proposed REA Dam and the associated licensed discharge point. Additional groundwater monitoring points to be installed during the pre-mining phase within Gap Creek and Genowlan Creek alluvium in the areas of		Refer SSD_5581 Schedule 4 Conditions 10, 12, 13 and 14.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	predicted groundwater drawdown The surface and groundwater monitoring points will monitor the following parameters: ▪ Piezometric height ▪ Groundwater quality ▪ Groundwater flow ▪ Surface water quality and flow. • Monitor groundwater bores on adjacent private properties to provide understanding of regional groundwater systems. Parameters to be monitored will be: ▪ Piezometric height ▪ Groundwater quality				
15	Aboriginal and Historical Heritage Management Ensure that identified and unidentified Aboriginal and Historic Sites are appropriately managed. The sites identified in Chapter 8.0 and Section 10.3 will be subject to a monitoring programme within the Cultural Heritage Management Plan that will: • monitor for impacts caused by subsidence on identified archaeological sites prior to, during and post mining activities. The condition of the site will be compared with baseline. If the site is found to be damaged Centennial Airly will notify OEH and work in consultation to mitigate further impacts. Monitoring will cease once mining is complete under a particular site and inspection with NPWS demonstrate no further impact has occurred. • Centennial Airly will follow the measures contained in the SCA Plan of Management in relation to the Airly shale mining complex if unrecorded Aboriginal object/s or historical cultural heritage material are identified in the Project Area during works, then all works in the immediate area must cease and the area should be cordoned off. NPWS and OEH will be notified so that the site can be adequately assessed and a Plan of Management developed. • In the unlikely event that skeletal remains are found, work will cease immediately in the vicinity of the remains and the area will be cordoned off. The local police will be contacted to make an initial assessment to ascertain whether the remains are part of a crime scene or possible Aboriginal remains. If this is the case, the local police will contact OEH so that they can determine if the remains are Aboriginal.		• Refer SSD_5581 Schedule 4 Condition 19.	Compliant	
16	Traffic and Transport Project-related impacts on the road network are limited. Airly Mine will implement a construction traffic management plan during construction of the CPP. This will include: • consideration of shift start and finish times to avoid excessive usage of intersections by both Airly and contraction workers • consideration of delivery times for large items of plant during construction.		• Refer SSD_5581 Schedule 4 Condition 17.	Compliant	
17	Noise and Vibration All noise impacts are minimised to the greatest extent possible. The following noise mitigation and management measures will be implemented to reduce		• Refer SSD_5581 Schedule 4 Conditions 1, 2, 3 and 4.	Compliant	

Appendix A1: Development Consent SSD_5581 (as modified) - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status (#)	Recommendation
	the noise impact of the Project: - preparation of a Noise Management Plan including noise monitoring program - noise levels are to be maintained at 35dBA or less at all identified receptors.				
18	Air Quality All air quality impacts are minimised to the greatest extent possible. Existing monitoring measures will continue for Airly Mine, consisting of the four static dust deposition gauges		Refer SSD_5581 Schedule 4 Conditions 5, 6 and 7.	Compliant	
19	Decommissioning and Rehabilitation Strategy Rehabilitation to be conducted in accordance with Industry Standards. The Proposed REA will be rehabilitated in stages and limited progressive vegetation of batters will occur with each lift of the REA. Native species tree planting at the base of the REA will be undertaken prior to the commencement of the REA establishment to provide visual screening. On the completion of mining and associated activities, all disturbed areas will be rehabilitated, through the following stages: - Decommissioning: demolition of infrastructure - Landform Establishment: shaping, bulk earthworks and construction of drainage works - Growth Media Development: topsoiling and application of soil ameliorants; - Ecosystem Establishment: revegetation - Ecosystem Sustainability: monitoring and maintenance.		Not triggered.	Compliant	
20	Waste All waste impacts are minimised to the greatest extent possible. Dirty water management structures will be constructed in association with the work shop and refuelling facilities. This will include: - drainage to a collection point - collection of dirty water and separation of oil and grease from the waste water - disposal of waste oil and grease - direction of remaining dirty water to the dirty water management system		Refer SSD_5581 Schedule 4 Condition 23.	Compliant	
21	Hazards All hazard impacts are minimised to the greatest extent possible. - dangerous goods will be stored in accordance with normal dangerous goods storage procedures. - spill containment will be managed in accordance with relevant Australian Standards - safety hazards will be managed through occupational health and safety procedures - environmental hazards will be managed through the EMP - fire protection infrastructure and plant (including fire extinguishers, mains hydrants and hoses) will be provided and maintained in accordance with relevant Australian Standards - site emergency response plans including emergency contact numbers are provided within management system for the site - maintenance of asset protection zones around existing and proposed infrastructure		- An assessment of hazards, including dangerous goods, safety hazards, emergency procedures, and fire protection, was not undertaken by MCW Environmental. - Refer SSD_5581 Schedule 2 Condition 14 and Schedule 4 Condition 22.	Compliant	

Appendix A2:

- **Environment Protection Licence 12374 (Environment Protection Authority)**

Appendix A2: Environment Protection Licence 12374 - Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation																																								
1 ADMINISTRATIVE CONDITIONS																																													
A1 What the licence authorises and regulates																																													
A1.1	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition. <table><tr><th>Scheduled Activity</th><th>Fee Based Activity Scale</th><th>Scale</th></tr><tr><td>Coal works</td><td>Coal works</td><td>0 – 2,000,000 T handled</td></tr><tr><td>Mining for coal</td><td>Mining for coal</td><td>>500,000 – 2,000,000 T produced</td></tr></table>	Scheduled Activity	Fee Based Activity Scale	Scale	Coal works	Coal works	0 – 2,000,000 T handled	Mining for coal	Mining for coal	>500,000 – 2,000,000 T produced	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	Centennial Airly operates at the address specified in Condition A2.1 of the EPL and undertakes the scheduled activities (Mining for Coal; Coal Works) as specified in this condition. Production tonnages during the current audit period as reported in 2018, 2019 and 2020 Annual Reviews and in rail scheduling reports were within the limits specified by this Condition. <table><tr><th>Calendar year</th><th>Limit</th><th>Tonnes of ROM coal</th></tr><tr><td>2018</td><td>1,800,000</td><td>906,308</td></tr><tr><td>2019</td><td>1,800,000</td><td>1,177,386</td></tr><tr><td>2020</td><td>1,800,000</td><td>1,476,209</td></tr></table>	Calendar year	Limit	Tonnes of ROM coal	2018	1,800,000	906,308	2019	1,800,000	1,177,386	2020	1,800,000	1,476,209	Compliant																				
Scheduled Activity	Fee Based Activity Scale	Scale																																											
Coal works	Coal works	0 – 2,000,000 T handled																																											
Mining for coal	Mining for coal	>500,000 – 2,000,000 T produced																																											
Calendar year	Limit	Tonnes of ROM coal																																											
2018	1,800,000	906,308																																											
2019	1,800,000	1,177,386																																											
2020	1,800,000	1,476,209																																											
A2 Premises or plant to which this licence applies																																													
A2.1	The licence applies to the following premises: Airly Mine, 319 Glen Davis Road, Capertee, NSW 2846. Mining Lease No. 1331			Noted																																									
A3 Information supplied to the EPA																																													
A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.			Noted																																									
2 DISCHARGES TO AIR AND WATER AND APPLICATIONS TO LAND																																													
P1 Location of monitoring/discharge points and areas																																													
P1.1	The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point. <table><tr><th>EPA ID #</th><th>Type of Monitoring Point</th><th>Type of Discharge Point</th><th>Local Description</th></tr><tr><td>3</td><td>Dust Monitoring Point</td><td>-</td><td>DM1 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.</td></tr><tr><td>4</td><td>Dust Monitoring Point</td><td>-</td><td>DM2 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.</td></tr><tr><td>5</td><td>Dust Monitoring Point</td><td>-</td><td>DM3 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.</td></tr><tr><td>6</td><td>Dust Monitoring Point</td><td>-</td><td>DM4 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points"</td></tr></table>	EPA ID #	Type of Monitoring Point	Type of Discharge Point	Local Description	3	Dust Monitoring Point	-	DM1 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.	4	Dust Monitoring Point	-	DM2 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.	5	Dust Monitoring Point	-	DM3 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.	6	Dust Monitoring Point	-	DM4 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points"	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Western Region Air Quality and Greenhouse Gas Management Plan (Centennial Coal, June 2018)	- The EPL Dust Monitoring Points 3, 4, 5 and 6 are shown on Figure 7 Airly Mine – Environmental Monitoring Plan which was available for review within the monthly environmental monitoring reports. The location of each dust monitoring point appeared to be consistent with the Local Description of the table in Condition P1.1. - The following nomenclature is noted: <table><tr><th>EPA ID</th><th>EPA ID (Fig 7*)</th><th>Airly ID (Fig 7*)</th><th>Airly ID (MP#)</th></tr><tr><td>3</td><td>MP3</td><td>DM1</td><td>DG1</td></tr><tr><td>4</td><td>MP4</td><td>DM2</td><td>DG2</td></tr><tr><td>5</td><td>MP5</td><td>DM3</td><td>DG3</td></tr><tr><td>6</td><td>MP6</td><td>DM4</td><td>DG4</td></tr></table> * Figure 7 Airly Mine – Monthly Environmental Monitoring Report Plan # Air Quality and Greenhouse Gas Management Plan, Western Region, March 2017 - Monthly dust sampling and analysis of the four monitoring points is undertaken by ALS and results are reported in the monthly Environmental Monitoring reports and Annual Reviews. - The EPL does not include a concentration limit for depositional dust, however Centennial Airly compare monthly results against the depositional dust criteria in SSD_5581 Condition 5 Schedule 4 i.e., Annual Average Limit of 4 g/m²/month cumulative impact in the Monthly Environmental Monitoring Reports.	EPA ID	EPA ID (Fig 7*)	Airly ID (Fig 7*)	Airly ID (MP#)	3	MP3	DM1	DG1	4	MP4	DM2	DG2	5	MP5	DM3	DG3	6	MP6	DM4	DG4	Compliant	
EPA ID #	Type of Monitoring Point	Type of Discharge Point	Local Description																																										
3	Dust Monitoring Point	-	DM1 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.																																										
4	Dust Monitoring Point	-	DM2 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.																																										
5	Dust Monitoring Point	-	DM3 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points" Supporting Documentation 20 June 2005.																																										
6	Dust Monitoring Point	-	DM4 as indicated on Plan 2 "Airly Coal Pty Ltd Monitoring Points"																																										
EPA ID	EPA ID (Fig 7*)	Airly ID (Fig 7*)	Airly ID (MP#)																																										
3	MP3	DM1	DG1																																										
4	MP4	DM2	DG2																																										
5	MP5	DM3	DG3																																										
6	MP6	DM4	DG4																																										

		ring Point		Supporting Documentation 20 June 2005.		- Centennial Airly has conducted monthly dust deposition gauge monitoring at DG1, DG2, DG3 and DG4 during the period of the IEA and there has been no exceedance of SSD_5581 Schedule 4 Condition 5 Particulate matter < 10µm (PM10) air quality criteria recorded in Monthly Environmental Monitoring Reports (2018 -2021) and /or in 2018, 2019 and 2020 Annual Reviews. - The depositional dust results for January 2020 exceeded the limit of 4 g/m2/month due to external influences from nearby bushfire smoke and regional dust storms.																														
P1.2	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.					Noted, refer condition P1.3.	Noted																													
P1.3	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point. Water and land <table><tr><th>EPA ID No.</th><th>Type of Monitoring Point</th><th>Type of Discharge Point</th><th>Location Description</th></tr><tr><td>1</td><td>Discharge to Water</td><td>Discharge to Water</td><td>Point 1 located at the 35ML secondary settling dam and labelled as LDP1 on Plan C – Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.</td></tr><tr><td>7</td><td>Discharge to Water</td><td>Discharge to Water</td><td>Point 7 located at the "7ML Dirty Water Dam" and labelled as LDP2 on Plan C - Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.</td></tr><tr><td>8</td><td>Discharge to Water</td><td>Discharge to Water</td><td>Point 8 located at dam adjacent to Rail Loading Point and labelled as LDP3 on Plan C – Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.</td></tr></table>				EPA ID No.	Type of Monitoring Point	Type of Discharge Point	Location Description	1	Discharge to Water	Discharge to Water	Point 1 located at the 35ML secondary settling dam and labelled as LDP1 on Plan C – Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.	7	Discharge to Water	Discharge to Water	Point 7 located at the "7ML Dirty Water Dam" and labelled as LDP2 on Plan C - Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.	8	Discharge to Water	Discharge to Water	Point 8 located at dam adjacent to Rail Loading Point and labelled as LDP3 on Plan C – Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.	Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021)	- The following nomenclature is noted:<table><tr><th>EPA ID</th><th>EPA ID (Fig 7*)</th><th>Airly ID (Fig 7*)</th></tr><tr><td>1</td><td>MP1</td><td>LDP1</td></tr><tr><td>7</td><td>MP7</td><td>LDP2</td></tr><tr><td>8</td><td>MP8</td><td>LDP3</td></tr></table>* Figure 7 Airly Mine – Monthly Environmental Monitoring Report plan - The EPL Discharge to Water monitoring points 1, 7 and 8 (known at Airly as License Discharge Points (LDPs) 1, 2 and 3 respectively) are shown on Figure 7 Airly Mine – Environmental Monitoring Plan which was available for review within the monthly environmental monitoring reports. The location of each LDP was sighted during the site inspection and appeared to be consistent with the Local Description of the Water and Land table of this Condition. - At the v-notch weir and associated telemetry at LDP1, there was no sign identifying that the location was an EPL 12374 licenced discharge point, consequently a recommendation to identify LDPs was made.	EPA ID	EPA ID (Fig 7*)	Airly ID (Fig 7*)	1	MP1	LDP1	7	MP7	LDP2	8	MP8	LDP3	Compliant (C-6)	C-7 Recommendation 11: Clearly label EPL 12374 licensed discharge monitoring points.
EPA ID No.	Type of Monitoring Point	Type of Discharge Point	Location Description																																	
1	Discharge to Water	Discharge to Water	Point 1 located at the 35ML secondary settling dam and labelled as LDP1 on Plan C – Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.																																	
7	Discharge to Water	Discharge to Water	Point 7 located at the "7ML Dirty Water Dam" and labelled as LDP2 on Plan C - Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.																																	
8	Discharge to Water	Discharge to Water	Point 8 located at dam adjacent to Rail Loading Point and labelled as LDP3 on Plan C – Water Management - Stockpile layout of the Airly Mining Operations Plan 2013-2020 (DOC13/31833) provided to the EPA on 27 June 2013.																																	
EPA ID	EPA ID (Fig 7*)	Airly ID (Fig 7*)																																		
1	MP1	LDP1																																		
7	MP7	LDP2																																		
8	MP8	LDP3																																		

3 Limit Conditions**L1 Pollution of Waters**

L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Water Management Plan (Centennial Airly, 2018) 2018 Airly Mine Annual Water Reporting (GHD, 2019) 2019 Airly Mine Annual Water Reporting (GHD, 2020) 2020 Airly Mine Annual Water Reporting (GHD, 2021)	- Centennial Airly controlled and managed clean and dirty water on site in accordance with the 2018 Water Management Plan. Surface water is directed to drains that flow to water management dams and is reused in the mine. - The following improvements to the storage and handling of chemicals and hydrocarbons and surface water management since the previous IEA were identified during the pit top site inspection: - New roof over chemical storage area. - New concrete pad adjacent to chemical storage area. - New bunded diesel tanks. - New waste oil storage tank. - New diversion of water from washdown area to the oil water separator. - New four x 50,000L tanks (for high EC production bore water). - The capacity of the Train Loader Dam has been increased during the period of the IEA from 0.7ML capacity to approx. 3ML capacity, a new V-notch weir installed (PCD) and associated pump and pipeline upgrades. New electric pumps were observed during the site inspection (reportedly about to be commissioned).	Compliant	
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Appendix A2: Environment Protection Licence 12374 - Compliance Assessment

			- There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. - A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5 following a high rainfall storm event. - Given the low levels of site discharge, and no identified non-compliances with EPL 12374 discharge criteria, this condition as assessed as Compliant. - Refer Recommendation R3 Appendix A1 SSD_5581 Schedule4 Condition 10.												
L2 Concentration Limits															
L2.1	For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Water Management Plan (Centennial Airly, 2018) 2018 Airly Mine Annual Water Reporting (GHD, 2019) 2019 Airly Mine Annual Water Reporting (GHD, 2020) 2020 Airly Mine Annual Water Reporting (GHD, 2021) - ECD (2018 -2021)	- In 2018, EPL 12374 was varied to increase the Electrical Conductivity (EC) limit due to naturally elevated EC in the upstream waters of Airly Creek. - There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. - A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5 following a high rainfall storm event. - Given the low levels of site discharge, and no identified non-compliances with EPL 12374 discharge criteria, this condition as assessed as Compliant.	Compliant											
L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.		- There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. - A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5. Further to the discharge from LDP3, Centennial Airly conducted improvement works at LDP3 including, increasing the size of the Train Loader Dam, pump upgrades and clean water diversion levy to prevent a reoccurrence of this discharge.	Not triggered											
L2.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Water Management Plan (Centennial Airly, 2018) 2018 Airly Mine Annual Water Reporting (GHD, 2019) 2019 Airly Mine Annual Water Reporting (GHD, 2020) 2020 Airly Mine Annual Water Reporting (GHD, 2021) - ECD (2018 -2021)	- There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. - A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5. Further to the discharge from LDP3, Centennial Airly conducted improvement works at LDP3 including, increasing the size of the Train Loader Dam, pump upgrades and clean water diversion levy to prevent a reoccurrence of this discharge.	Not triggered											
L2.4	Water and/or Land Concentration Limits (Points 2, 3, 4) Refer EPL 12374 L2.4 Table Water and /or Land Concentration Limits			Noted											
L2.5	The limits specified under condition L2.4 for the sediment basins identified as EPA licence discharge points 1, 7, and 8 do not apply when the discharge from the basin occurs solely as a result of rainfall measured at the premises which exceeds; – a total of 44 millimetres of rainfall over any consecutive 5 day period. Note: A 44 millimetre rainfall depth is defined by the publication 'Managing Urban Stormwater: Soils and Construction' (Landcom 2004) as the rainfall depth in millimetres for a 95th percentile 5 day rainfall event for the Central Tablelands consistent with the storage capacity (recommended minimum design criteria) for Type D sediment retention basins for mines and quarries (Vol 2E of Landcom 2004).	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Water Management Plan (Centennial Airly, 2018) 2018 Airly Mine Annual Water Reporting (GHD, 2019) 2019 Airly Mine Annual Water Reporting (GHD, 2020) 2020 Airly Mine Annual Water Reporting (GHD, 2021) - ECD (2018 -2021)	- There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. - A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption (>44mm over any consecutive 5 day period under condition EPL 12374 L2.5) as Centennial Airly recorded a total of 64.2mm within the 5 day period of which 51.8mm fell within 2 days	Compliant											
L3 Waste															
L3.1	The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below. Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below. <table><tr><td>Code</td><td>Waste</td><td>Descript ion</td><td>Activity</td><td>Other Limits</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>	Code	Waste	Descript ion	Activity	Other Limits						- Total Waste Management Report spreadsheet (JR Richards, October 2018) - Total Waste Management Report spreadsheet (JR Richards, May 2019) - Total Waste Management Report spreadsheet (JR Richards, January 2021) - NSW EPA Waste Transport Certificate for F110 waste resin etc (NSW EPA, 7 May 2019) - Waste Management Checklist for Airly Mine (JR Richards, 26 June 2019) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Waste steel, paper and cardboard and waste oils is recycled (reported monthly by JR Richards in the Total Waste Management Report Airly spreadsheet). - Production statistics reported in the 2018, 2019 and 2020 Annual Reviews indicate that no waste rock / overburden or coal rejects were generated during the period of the IEA. Airly do not process (wash) coal on site, with all coal transported off site. - The site inspection observed that wastes were appropriately segregated and stored in bins, skips and laydown areas, in particular a waste sorting area was observed at the pit top during the site inspection. Solid mixed rubbish is placed in the waste sorting area while waste oil, oily water and chemical waste are placed in assigned containers/bins. JR Richards manages the recycling and disposal of wastes from Centennial Airly. - The quantities of the various waste and recycling streams are monitored by JR Richards and reported in their Total Waste Management Report spreadsheet updated monthly. - The 2018, 2019 and 2020 Annual Reviews compared annual waste volumes and waste recycling.	Compliant	
Code	Waste	Descript ion	Activity	Other Limits											

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	NA General or Specific exempted waste Waste that meets all the NA conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005 As specified in each particular resource recovery exemption NA	- Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021 - Receipt 0307 for septic waste transportation to Lithgow sewerage treatment plant (Williams, 19 April 2018) - On-site sewage management approval 2017 Annual Return (Centennial Airly, 31 March 2018) - Ecomax effluent treatment system inspection (Centennial Airly, 15 January 2018)	- Non-hazardous disposed waste volumes in 2018 increased in 2019 and was generally consistent in 2019 and 2020. 2020 annual waste recycling percentages were considerably lower in 2020 than 2017, 2018 and 2019, as reported in the 2020 Annual Review, "<i>The reduction in recycling percentages from the previous years compared to the 2020 reporting period (shown in Figure 20) can be attributed to scrap steel removal volumes. During 2020 Airly Mine was more efficient in the reduction and re-use of scrap steel items on site which resulted in only 44.65 tonnes of scrap steel being removed from site compared to nearly 90 tonnes for the previous year/s.</i>" - An inspection record, sewerage transportation docket and 2017 Ecomax effluent treatment system annual return was sighted.		
This condition does not limit any other conditions in this licence.					
Operating Conditions					
O1 Activities must be carried out in a competent manner					
O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Following submission of the 2018 Annual Review, a site inspection was undertaken by DPIE and an opportunity to improve hydrocarbon storage was identified. Centennial Airly committed to upgrading these facilities by December 2019. The 2019 Annual Review reports that one of the activities to be completed in 2020 is to "<i>continue works in relation to the installation of approved pit top infrastructure, including: improved hydrocarbon storage area, improved diesel refuelling area, install new wash-down bay</i>". - The following improvements to the storage and handling of chemicals and hydrocarbons, and surface water management, have been implemented since the previous IEA, and were sighted during the pit top site inspection: - New roof over chemical storage area. - New concrete pad adjacent to chemical storage area. - New bunded diesel tanks. - New waste oil storage tank. - New diversion of water from washdown area to the oil water separator. - New four x 50,000L tanks (for high EC production bore water). - Improved pollution control facilities below the train loading area. - During the site inspection the following observations were made: - Staining from historic overflow from the waste oil storage area at the rear of the workshop (Photo11). - A waste/ chemical storage area at the pit top (Photo 12) had sediment laden bunds. - Sediment/coal fines in surface water drains at the pit top area (Photo 13). - This condition was assessed as Compliant due to the design and management of the dirty water management system to collect sediment in sediment dams; to minimise off-site water discharge (e.g. there were no discharges from the 35ML Dam at LDP1 subject to EPL 12374 concentration limits during the period of the IEA); and water quality within the 35 ML Dam was within EPL 12374 concentration limits for potential pollutants from the hydrocarbon storage area and sediment i.e., oil and grease and total suspended solids. - Although there has been considerable improvements in the storage of chemicals and hydrocarbons since the 2018 IEA, there remains opportunity for further improvement in mitigating the loss of containment from the waste oil storage area; improving capacity in some bunds in the pit top area; and addressing sediment/coal on an unsealed sealed area in the train loading area.	Compliant (C-8)	Refer Appendix A SSD_5581 Schedule 4 Condition 12, C-4 Recommendation 8.
O2 Maintenance of plant and equipment					
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner	- IEA site inspection - Production area inspections on 26 March 2018, 29 March 2018, 1 August 2018 and 2 February 2021 6-monthly automatic weather station verification certificate Airly Homestead (ALS, 25 October 2018) - Tipping Bucket Rain Gauge Calibration Certificate (ALS, 14 March 2018) - Water level sensor verification certificate (ALS, 20 February 2019, AMGAPCRK on 30 September 2019 and AMLDP1 on 20 August 2020)	Evidence that plant and equipment at the site were (a) maintained in a proper and efficient condition; and (b) operated in as proper and efficient manner; during the period of the IEA included: - Plant and equipment generally are registered within the PULSE Mining System. Through PULSE the plant and equipment are subject to a planned maintenance program in order to reduce the potential for failures that may, amongst other things, lead to environmental incidents. PULSE automatically generates work orders to undertake planned maintenance activities. The work order generally includes a specific standard work procedure to carry out the action. The auditors sighted a number of inspection and maintenance work orders that had been implemented during the audit period, a selection of those sighted are referenced in the Evidence Source column. - Environmental monitoring equipment including discharge water flow meters, v-notch weir telemetry, dust gauges and meteorological station are operated by ALS and are subject to ALS internal QA testing and ongoing maintenance requirements. ALS is a NATA accredited analytical service provider (Accreditation No: 825). Evidence of equipment calibration was provided.	Compliant	

		- Airly Electrical Control Plan AIR-MP-0101 v9 (Centennial Airly, 2019) - Airly Mechanical Control Plan AIR-MP-0101 v7 (Centennial Airly, 2019) - Surface Induction AIR-TA-6039 and Assessor Guide - Visitor Induction AIR-TA-6016 and Assessor Guide - Compliance Database (screenshot with examples of actions for Environment and Community Coordinator to comply with SSD_5581) - AS1940 Compliance Assessment Report (Viva Energy Australia, 23 December 2019) - Hazardous Spills AIR-TA-6130 Assessment Tool - Assessment of quantity of gas bottle storage (AS 4332) (Centennial Airly, 17 December 2019) - Training and Competency Management Plan including Training Needs Assessment	- Spill kits were present and were observed to have cable tie “seals aiding in maintaining the kit in a useable condition. - Training and competence is assessed. Airly provided examples of induction training and assessment packages and standard work procedures for the equipment and tasks on site. - The mandatory site induction for employees, contractors and visitors includes environmental awareness and obligations to undertake works and to protect the environment. The Surface Induction includes: - Key environmental risks - Storage of oils and fuel - Waste management - Spill response: assess, control, contain and repair - Contact by residents. - Hazardous Materials (specific training package) was available. - A number of improvements to prevent loss of containment in the pit top area since the 2018 IEA had been made including: - Roof over hydrocarbon storage area and concrete bund that drains to the sump near the diesel tank. - Diversion of additional areas the oil/water separator near the wash bay. - Additional hardstand and dirty water collection near the train loading bay. - The pit top area was generally maintained in a good condition although there was evidence of overflow from the oil storage bund in the Workshop. Refer SSD_5581_Schedule 4 Condition 12. - The effluent treatment system and corresponding irrigation area were observed during the site inspection to be in good condition and no odour was detected. - There were no complaints or incidents generated by operation of maintenance of plant and equipment. - Based on the documentation reviewed and the plant and equipment was observed during the site inspection, the requirements of this condition were assessed as being met.		
O3 Dust					
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Compliance Database	- During the site inspection, there was no visible dust observed, however potential dust sources observed during the site inspection included: - Windblown dust at coal stockpile areas; - Windblown dust from unsealed internal roads; and - Dust from coal and coal fines spills that may occur. - Key measures to manage and mitigate dust (particulate matter) implemented at the site include: - Vehicle speed restrictions (speed signage observed during site inspection and the compliance database includes a monthly reminder for Environment and Community Coordinator to assess speed limits and water cart availability). - Reported use of water carts to dampen trafficable areas of unsealed roads (as it had recently rained, conditions did not trigger the use of water carts during the site inspection). - The main access road is sealed. - The use of water cannons / water sprays on coal stockpiles. - Use of a train loader which reportedly produces a low and even profile of coal on the surface of the wagon and reduces spillages. - Transporting coal with a high inherent moisture content. - Implementation of an underground dust suppression system involving the use of water sprays on coal cutting machinery and rubber conveyor belts. - Centennial Airly conducted monthly dust monitoring using four dust deposition gauges throughout the period of the IEA (refer EPL 12374 P1.1 above). EPL 12374 does not set a concentration limit for depositional dust, however Airly have adopted the depositional dust criteria in Development Consent SSD_5581 i.e., deposited dust (total insoluble solids) annual average of 4 g/m2/month cumulative impact and annual average of 2 g/m2/month incremental impact. Monitoring results for 2018, 2019 and 2020 as reported in the Monthly Environmental Monitoring Reports and Annual Reviews indicate that depositional dust results recorded during the period of the IEA were below the air quality criteria, with one exception. In January 2020 as a result of significant regional bushfires and associated smoke and dust storms, depositional dust ranged from 5.6 g/m2/month at DM3 to 8.9 g/m2/month at DM2. These results were consequently, excluded from the annual average. - The Community Complaints Register indicates that no community complaints related to dust were received during the period of the IEA. - As monitoring indicates that depositional dust during the period of the IEA was well below the SSD_5581 air quality criteria, site observations by the auditors indicated that mitigation measures were generally effective, and there were no complaints during the period of the IEA related to dust, this condition was assessed as Compliant.	Compliant	
O4 Other Operating Conditions					
O4.1	The sediment basins identified as EPA identification no. (licence discharge point) 7 and 8 under condition P1.3 must be drained or pumped out as necessary, within 5 days following rainfall in order to maintain the basins design storage capacity.	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Airly Mine Annual Reporting, 2019 Annual Water Monitoring Report (GHD, 2020) - Airly Mine Annual Reporting, 2018 Annual Water Monitoring Report (GHD, 2019)	- The sediment basins identified as EPA identification are 1 (35ML Discharge Dam, LDP1), 7 (7ML Dam, LDP2) and 8 (Train Loader Dam, LDP3). - During site inspection pumps were observed at each dam. - Each dam was observed to have freeboard at the time of the inspection, although calculations of the capacity of the freeboard were not undertaken.	Compliant	

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		The TLO Dam Pump Operation AIR-TARP-TLO Dam V1 (Centennial Airly, 2019)	- The capacity of the Train Loader Dam has been increased during the period of the IEA from 0.7ML capacity to approx. 3ML capacity, a new V-notch weir has been installed, and new electric pumps were observed during the site inspection (reportedly about to be commissioned). - The Environment and Community Coordinator advised that on an as needed basis, including following rainfall, the sediment basins are pumped out to the 109ML Dirty Water Dam and that pumping requirements are directed through the daily operational morning meetings. - The TARP for the TLO (35ML) dam pump operation provides clear actions to optimise dam levels and maintain capacity.		
O4.2	The sediment basin identified as EPA identification no. (licence discharge point) 1 under condition P1.3 must be drained or pumped out within fifteen (15) days following rainfall in order to maintain the basins design storage capacity.	The TLO Dam Pump Operation AIR-TARP-TLO Dam V1 (Centennial Airly, 2019)	- The TARP for the TLO (35ML) dam pump operation provides clear actions to optimise dam levels and maintain capacity. - Dam levels were observed at less than full capacity during the site inspection.	Compliant	
O4.3	Any water discharged in accordance with condition O4.1 or O4.2 from licensed discharge point 1, 7 and 8 (LDP 1,7,8), may only be discharged to waters where the water to be discharged complies with the discharge limit specified under condition L2.4 for licence discharge points 1, 7, and 8.	- Enviro Weekly Surface Inspections - SEEC Drawing references for Dams 104, 11000161-CA600 - Photos of Airly Dam Desilting Works 2018 provided by Airly. - Mark Lilly Plant Hire Quote dated 19 February 2018 for Desilting Sediment Dams - IEA (MCW Environmental, 2018)	- The TARP for the TLO (35ML) dam pump operation provides clear actions to optimise dam levels and maintain capacity. - Dam levels were observed at less than full capacity during the site inspection. - There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. A single 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5.	Compliant	
O4.4	The licensee must undertake maintenance to desilt all dams as necessary to retain their design storage capacities	- Enviro Weekly Surface Inspections - SEEC Drawing references for Dams 104, 11000161-CA600 (file saved on 13 February 2018) - Photos of Airly Dam Desilting Works 2018 provided by Airly. - Mark Lilly Plant Hire Quote dated 19 February 2018 for Desilting Sediment Dams 2018 IEA (MCW Environmental, 2018)	- The capacity of the Train Loader Dam has been increased during the period of the IEA from 0.7ML capacity to approx. 3ML capacity, a new V-notch weir installed, and new electric pumps were observed during the site inspection (reportedly about to be commissioned). - Erosion and sediment control structures and dams were reported to be subject to planned weekly inspections and inspections within 24 hours following a rainfall event (a selection of completed inspection checklists were sighted). The Environment and Community Coordinator advised that local contractor Lilleys Plant Hire (present on site during the site inspection) has a standing monthly purchase order to undertake maintenance of erosion and sediment controls on site. - During the site inspection the sediment dams (109ML Dirty Water Dam, 35ML Discharge Dam, 7ML Dam and the Train Loader Dam) did not visually appear to be unduly laden with silt. A Basin Sizing Review by SEEC (file saved on 13 February 2018) indicated that the capacities of the 109ML Dirty Water Dam, 7ML Dam and Train Loader Dam were in excess of the Blue Book requirements. - Evidence of desilting dams in 2018 was sighted in the previous IEA.	Compliant	

Monitoring and Recording Conditions
M1 Monitoring records

M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Monitoring required to be conducted by EPL 12374 comprises: - Weather. - Dust monitoring at EPA monitoring points 3, 4, 5 and 6 (DM1, DM2, DM3 and DM4). - Concentration of pollutants discharged from EPA monitoring / discharge points 1, 7 and 8 (LDP1, LDP2 and LDP3). - Volume of discharges from EPA monitoring / discharge point 1 (LDP1). - Dust sampling and analysis was conducted monthly by ALS during the period of the IEA with results reported in the Monthly Environmental Monitoring Reports and summarised in the Annual Reviews. - During the period of the IEA, there were no discharge events that triggered sampling and analysis for LDP1, LDP2 and LDP3. Although not triggered during the period of the IEA, if required LDP1, LDP2 and LDP3 discharge sampling is reportedly conducted by ALS. - The volume of discharge at LDP1 is automatically measured and recorded through a v-notch weir with associated flow and level sensors and a data logger installed at the discharge point. The instrumentation and data are managed by ALS. - Soft copies of Certificates of Analysis are available on a spreadsheet on the Centennial Airly ECD database with a summary of monitoring results reported in Monthly Environmental Monitoring reports, Annual Reviews and EPL Annual Returns.	Compliant	
M1.2	All records required to be kept by this licence must be: - in a legible form, or in a form that can readily be reduced to a legible form; - kept for at least 4 years after the monitoring or event to which they relate took place; and - produced in a legible form to any authorised officer of the EPA who asks to see them.	- Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 4 June 2018) - Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 3 June 2019) - Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 1 July 2020) - Certificate of Analysis HVAS (ALS, 27 January 2021)	ALS Certificates of Analysis for dust monitoring were available for review and were in a legible form.	Compliant	
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: the date(s) on which the sample was taken;	- Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 4 June 2018) - Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 3 June 2019)	- Dust sampling and analysis was conducted monthly by ALS during the period of the IEA with results reported in the Monthly Environmental Monitoring Reports and summarised in the Annual Reviews. - ALS Certificates of Analysis for dust monitoring included: - the date(s) on which the sample was taken.	Compliant	

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	b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	• Certificate of Analysis DM1, DM2, DM3 and DM4 (ALS, 1 July 2020) • Certificate of Analysis HVAS (ALS, 27 January 2021)	b) the time(s) at which the sample was collected. c) the point at which the sample was taken. d) the name of the person who collected the sample.																						
M2 Requirement to monitor concentration of pollutants discharged																									
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:		• Centennial Airly use ALS as its laboratory and field testing contractor for LDP1, LDP2 and LDP3. • ALS is a NATA accredited laboratory (Accreditation No: 825). • There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5. Consequently, no samples of water discharged from LDP1. LDP2 and LDP3 were required to be taken and/or analysed during the period of the IEA.	Not triggered																					
M2.2	Water and/ or Land Monitoring Requirements Points 1 (Grab Sample) – Refer EPL 12374 M2.2. Points 7, 8 <table><tr><th>Pollutant</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Oil and Grease</td><td>milligrams per litre</td><td>Monthly during discharge</td><td>Grab sample</td></tr><tr><td>pH</td><td>pH</td><td>Monthly during discharge</td><td>Grab sample</td></tr><tr><td>Total suspended solids</td><td>milligrams per litre</td><td>Monthly during discharge</td><td>Grab sample</td></tr><tr><td>Turbidity</td><td>nephelometric turbidity</td><td>Monthly during discharge</td><td>Grab sample</td></tr></table>	Pollutant	Units of Measure	Frequency	Sampling Method	Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample	pH	pH	Monthly during discharge	Grab sample	Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample	Turbidity	nephelometric turbidity	Monthly during discharge	Grab sample	• Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) • 2018 Annual Review (Centennial Airly, 2019) • 2019 Annual Review (Centennial Airly, 2020) • 2020 Annual Review (Centennial Airly, 2021) • EPL 12374 Annual Return 2018 • EPL 12374 Annual Return 2019	• There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5. Consequently, no samples of water discharged from LDP1. LDP2 and LDP3 were required to be taken and/or analysed during the period of the IEA.	Not triggered	
Pollutant	Units of Measure	Frequency	Sampling Method																						
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample																						
pH	pH	Monthly during discharge	Grab sample																						
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample																						
Turbidity	nephelometric turbidity	Monthly during discharge	Grab sample																						
Testing methods- concentration limits																									
M3.1	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.		• There were no discharges from the 35 ML Discharge Dam (LDP1) and the 7ML Dam (LDP2) during the period of the IEA. A single, 36kL discharge event was recorded for the Train Loader Dam (LDP3) in January 2019. This discharge was subject to the rainfall exemption under condition EPL 12374 L2.5. Consequently, no samples of water discharged from LDP1. LDP2 and LDP3 were required to be taken and/or analysed during the period of the IEA.	Not triggered																					
M4 Recording of pollution complaints																									
M4.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	• 2018 Annual Review (Centennial Airly, 2019) • 2019 Annual Review (Centennial Airly, 2020) • 2020 Annual Review (Centennial Airly, 2021) • Complaint Register (2018-2021) • Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021)	• A review of Monthly Environmental Reports and the Compliant Register identified that only one complaint has been received during the period of the IEA. • The complaint was received in April 2019 alleging that a train travelling through Capertee Village was speeding and caused excessive noise and vibration of house. The incident was reported in the Monthly Environmental Monitoring Report (April 2020) and in the Compliant Register. Corrective action included notifying the rail transport company and reiterating the importance of trains travelling at appropriate/reduced speeds through Capertee; a follow up phone call provided to the caller on the same evening to advise of the implemented actions; review of 'black box' data from the train in question didn't reveal any abnormalities or exceedances of speed through Capertee; and an additional follow up phone call to the caller to discuss the review findings, implemented actions, and to talk through the possible causes of amplified noise and vibration. • A record of the complaint was available for review at the site inspection with details available in the April 2019 Monthly Environmental Monitoring Report on the publicly accessible Centennial Airly website. The Complaints register	Compliant																					
M4.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	• Complaints Register (2018-2021)	• The Complaints Register included: a) the date and time of the complaint. b) the method by which the complaint was made. c) no details of the complainant were provided. d) the nature of the complaint. e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant.	Compliant																					
M4.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	• Complaint Register (2018-2021) • Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021)	• Review of the Monthly Environmental Monitoring Reports in 2016 and 2017 (i.e., 4 years prior to 2021), identified that there no complaints received at Airly Mine during 2016 and 2017, consequently there were no complaint records	Not triggered																					
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them.	• Desktop Audit Report (Final)- Publishing Pollution Monitoring Report Data EPL 12374 (EPA, 18 August 2020)	• The Environment and Community Coordinator reported that an authorised officer of the EPA had not requested specific records. • A desktop audit was conducted by the EPA's Major Compliance and Investigations team examining pollution monitoring data published in Centennial Airly website for the period starting 05 June 2019	Compliant																					

Appendix A2: Environment Protection Licence 12374 - Compliance Assessment

			to 04 June 2020. The Audit Report stated “We acknowledge that Centennial Airly has published an extensive amount of monitoring data and additional information on their website. No non-compliances were identified by the auditor. It is noted that the licensee has immediately addressed the action suggested under ‘areas for improvement’ outlined in the summary of audit findings”.								
M5 Telephone complaints											
M5.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	Test call (MCW Environmental, 8 March 2021)	Centennial Airly operates a Community Information and Complaints line on (02) 6359 2100 for the purposes of receiving both requests for information and complaints from the community. The number was tested, and although no message left on 8 March 2021, Centennial Airly followed up within 12 hours. The call was answered with a recorded message, which provided prompts for 'complaints', and options to call the control room or the Environment and Community Co-ordinator.	Compliant							
M5.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	https://www.centennialcoal.com.au/operations/airly/	- Contact phone numbers (+61 2 9266 2700) for the site were sighted on signs at the site entry and on the Centennial Airly website. - The Centennial Airly website does not clearly indicate the public complaints line number (02 6359 2100). - This condition was assessed as compliant however a recommendation has been included clearly indicate the public complaints line number (02 6359 2100).	Compliant (C-9)	C-9 Recommendation 12: Clearly indicate the public complaints line on the Centennial Airly website.						
M5.3	The preceding two conditions do not apply until 3 months after the date of the issue of this licence.		Noted	Noted							
M6 Requirement to monitor volume or mass											
M8.1	For each discharge point or utilisation area specified below, the licensee must monitor: a) the volume of liquids discharged to water or applied to the area; b) the mass of solids applied to the area; c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified below. Point 1<table><tr><th>Frequency</th><th>Units of Measure</th><th>Sampling Method</th></tr><tr><td>Continuous during discharge</td><td>kilolitres per day</td><td>Level sensor and continuous logger</td></tr></table>	Frequency	Units of Measure	Sampling Method	Continuous during discharge	kilolitres per day	Level sensor and continuous logger	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021)	- Review of monthly environmental monitoring reports, Annual Reviews and Annual Returns indicate that during the period of the IEA there were no discharges from monitoring / discharge point 1 (LDP1). Consequently, the requirement to monitor the volume of discharge during the period of the IEA was not triggered. - During the site inspection a v-notch weir was observed on the discharge from the 35ML Discharge Dam spillway i.e., LDP1. The Environment and Community Coordinator advised that the volume of discharge at LDP1 is automatically measured and recorded using the v-notch weir with associated flow and level sensors and continuous data logger. The instrumentation and data are reportedly managed by ALS. Although there has been no discharge during the period of the IEA, as Centennial Airly have the capacity to continuously monitor the volume of water discharged from LDP1, this condition was assessed as Compliant. - Parts b) and c) of this condition are not applicable.	Compliant	
Frequency	Units of Measure	Sampling Method									
Continuous during discharge	kilolitres per day	Level sensor and continuous logger									
6 Reporting Conditions											
R1 Annual return documents											
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1. a Statement of Compliance, 2. a Monitoring and Complaints Summary, 3. a Statement of Compliance - Licence Conditions, 4. a Statement of Compliance - Load based Fee, 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7. a Statement of Compliance - Environmental Management Systems and Practices. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	NSW EPA Public Register EPL 12374 2018 Annual Return received by the EPA 6 February 2019 2019 Annual Return received by the EPA 22 January 2020 2020 Annual Return received by the EPA 5 February 2021	- Review of the EPA Public Register (8 March 2021) identified that EPL Annual Returns were provided for 2018, 2019 and 2020. - The Annual Returns included: 1. A Statement of Compliance (Compliant). 2. A Monitoring and Complaints Summary (Compliant). 3. A Statement of Compliance - Licence Conditions (Compliant). 4. A Statement of Compliance - Load based Fee (Not triggered). 5. A Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan (Compliant). 6. A Statement of Compliance - Requirement to Publish Pollution Monitoring Data (Compliant). 7. A Statement of Compliance - Environmental Management Systems and Practices (Compliant).	Compliant							
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.	2018 Annual Return received by the EPA 6 February 2019 2019 Annual Return received by the EPA 22 January 2020 2020 Annual Return received by the EPA 5 February 2021		Noted							
R1.3	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.		EPL 12374 has not been transferred.	Not triggered							

Appendix A2: Environment Protection Licence 12374 - Compliance Assessment

	Note: An application to transfer a licence must be made in the approved form for this purpose				
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.		EPL 12374 has not been surrendered.	Not triggered	
R1.5	The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	NSW EPA Public Register EPL 12374 2018 Annual Return received by the EPA 6 February 2019 2019 Annual Return received by the EPA 22 January 2020 2020 Annual Return received by the EPA 5 February 2021	- The due date for submission of the Annual Return to the EPA is not later than 60 days after the end of each reporting period. The reporting period for EPL 12374 ends on 11 December each year. Therefore, the due date for submission is 9 February each year. - EPL 12374 Licence Summary page on the NSW EPA website indicates that the Annual Return for the reporting period: 2018 Annual Return received by the EPA 6 February 2019 2019 Annual Return received by the EPA 22 January 2020 2020 Annual Return received by the EPA 5 February 2020 - Annual Returns during the period of the IEA were received within the timeframes required by this condition.	Compliant	
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	2018 Annual Return (Centennial Airly, 2019) 2019 Annual Return (Centennial Airly, 2020) 2020 Annual Return (Centennial Airly, 2021)	- Annual Returns for the following years were sighted: 2018 Annual Return received by the EPA 6 February 2019 2019 Annual Return received by the EPA 22 January 2020 2020 Annual Return received by the EPA 5 February 2020	Compliant	
R1.7	Within the Annual Return, the Statements of Compliance must be certified, and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder.	2018 Annual Return (Centennial Airly, 2019) 2019 Annual Return (Centennial Airly, 2020) 2020 Annual Return (Centennial Airly, 2021)	- Copies of Annual Returns were available at the site. 2018, 2019 and 2020 Annual Returns were signed by a Director and a Company Secretary.	Compliant	
R2 Notification of Environmental Harm					
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Monthly Environmental Monitoring Reports (Centennial Airly, 2018 -2021) - ECD (2018 -2021)	- There were no notifications of environmental harm reported by Centennial Airly, and the PIRMP was not activated during the period of the IEA. - Review of the 2018, 2109 and 2020 Annual Reviews and monthly Environmental Monitoring Reports, identified that there were no exceedances of other criteria and / or performance measures in SSD_5581 Schedules 3 and 4, or EPL concentration and volume limits, during the period of the IEA. - The following subsidence incidents were reported to DPIE, Resources Regulator and NPWS in 2020: 31 January 2020 - Subsidence greater than the EIS prediction of 125 millimetres was measured in the B-Line subsidence survey in January, March, April, June, August, September and October 2020. 7 July 2020 – a surface crack (Fracture 01) was identified during visual surface inspections 5m west of GNSS unit (120 metres from the nearest cliff in the Cliff Zone of First Workings). 10 July 2020 – a surface crack (Fracture 2) was identified during visual surface inspections 70 metres from the nearest cliff in the Cliff Zone of First Workings).	Not triggered	
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred		There were no notifications of environmental harm reported by Centennial Airly, and the PIRMP was not activated, during the period of the IEA.	Not triggered	
R3 Written Report					
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.		- The Environment and Community Coordinator advised that an EPA officer has not requested a written report of an event under this condition during the period of the IEA. - MCW Environmental contacted the EPA by email seeking feedback for the 2021 IEA. There was no response provided by the EPA (Refer Appendix F of the IEA Report)	Not triggered	
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.		Not triggered.	Not triggered	
R3.3	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.		Not triggered.	Not triggered	

Appendix A2: Environment Protection Licence 12374 - Compliance Assessment

R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.		Not triggered.	Not triggered	
7 General Conditions					
G1.1	A copy of this licence must be kept at the premises to which the licence applies.		Copies of EPL 12374 were available for inspection in the Environment and Community Coordinator's office.	Compliant	
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.		The Environment and Community Coordinator advised that an EPA officer has not requested the EPL on site.	Not triggered	
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.		Copies of EPL 12374 were available for inspection in the Environment and Community Coordinator's office.	Not triggered	

Appendix A3:

- Mining Lease 1331 (Resources Regulator)

Appendix A3: Mining Lease 1331 – Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation
MINING LEASE 1331					
Notice to Landholders					
ML 1331-1	Within a period of three months from the date of grant renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been granted/renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice. If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been granted/renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	- Mining Lease 1331 2018 IEA (MCW Environmental, 2018) - APP95430_140606 ML1331 Renewal- Advertisement 7199-181LITH+MUD	- Outside the period of this IEA. - This condition as assessed as Compliant in the 2018 IEA.	Not triggered	
Rehabilitation					
ML 1331-2	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister	- MOP Amendment A (Centennial Airly, 2020) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Development Consent SSD-5581 contains conditions relevant to the preparation of a Rehabilitation Management Plan. The Rehabilitation Management Plan is included within the Mining Operations Plan. - The 2018, 2019 and 2020 Annual Reviews include the status of rehabilitation within the annual reporting period and the proposed rehabilitation for the following year (next reporting period). No rehabilitation was undertaken during 2018, 2019 and 2020 as there is limited opportunity for progressive rehabilitation to occur at Airly Mine prior to the cessation of life-of-mine operations. - The Annual Reviews report that there are no areas of land available to be rehabilitated as all areas of the active disturbance footprint are used for mining operations; and that Centennial Airly will conduct rehabilitation works in accordance with the approved Mining Operations Plan / Rehabilitation Management Plan at the completion of life-of-mine operations. - During the 2019 Annual Review reporting period, the Airly Mine disturbance footprint increased from 48.2ha to 54.4ha due to the installation of the 2MW Solar Farm - No exploration drilling was undertaken during the period of the IEA. - During the site inspection on Mt Airly ARP2a (piezometer installed before the period of the IEA) and ARP2 (abandoned borehole) were observed to be close to existing access, minimal disturbance had occurred, ground cover of leaf litter and placed fallen timber and no erosion or weed issues were observed.	Compliant	
Mining Operations Plan and Annual Rehabilitation Report					
ML 1331-3	Mining Operations Plan and Annual Rehabilitation Report a) The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting.	- Mining Operations Plan, Airly Mine Amendment A, 1 January 2018 to 31 December 2024 (Centennial Airly, 2020) - Letter to Centennial Airly Approval of MOP Amendment A (Resource Regulator, 9 April 2020) - Letter to Resource Regulator MOP Amendment A (Centennial Airly, 31 March 2020) - Letter to DPIE Regulator MOP Amendment A (Centennial Airly, 31 March 2020) - Letter to Centennial Airly ML 1331 Notification of Assessment of Security Deposit (Resource Regulator, 16 April 2020) - ESG3: Mining Operations Plan Guidelines (DRG, 2013) - Email to Resources Regulator Proposal to Suspend Condition 10 and 11-Airly Mine (Centennial Coal, 8 May 2018)	a) - Centennial Airly was granted approval to combine the Mining Operations Plan (MOP) and Rehabilitation Management Plan (RMP) into one document with the original Airly Mine Extension Project MOP/RMP (2018-2024) submitted to DPIE and Resources Regulator for approval on 4 December 2017. - The MOP, Airly Mine, 1 January 2018 to 31 December 2024 was approved by the Resource Regulator on 10 January 2018. - The MOP was revised to incorporate the importation of water from Charbon Colliery (SSD_5581 MOD 2) and to include the 2MW solar plant (DA033/19) and submitted to the Resource Regulator for approval on 31 March 2020. - The MOP Amendment A was approved by the Resources Regulator on 9 April 2020.	Compliant	
	b) The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: - identifies areas that will be disturbed; - details the staging of specific mining operations, mining purposes and prospecting; - identifies how the mine will be managed and rehabilitated to achieve the post mining land use; - identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and - reflects the conditions of approval under: - the Environmental Planning and Assessment Act 1979;		b) The MOP Amendment A includes: - The post mining land use, which is described as “<i>The conceptual long term mine rehabilitation objective is to provide a low maintenance, geotechnically stable and safe landform that is commensurate with the surrounding area. Post mining land use options for the Airly Mine were assessed in the Airly Mine Extension Project Decommissioning and Rehabilitation Strategy (SLR Consulting, 2014) which was prepared for the Airly Mine Extension Project EIS. The intended post-mining land use for the disturbed areas around the Airly Pit Top a mixture of open forest commensurate with the adjacent native vegetation and Muglii Murum-ban SCA, and pasture capable consistent with the pre-mining land use.</i>” (Section 4.2). - The areas that will be disturbed (Domains) (Section 5). - The staging of specific mining operations, mining purposes and prospecting (Section 2.2). - How the mine will be managed and rehabilitated to achieve the post mining land use (Section 3, 5, 6 and 7). - How mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment (Section 3).	Compliant	

Appendix A3: Mining Lease 1331 – Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation
	- the Protection of the Environment Operations Act 1997; and - any other approvals relevant to the development including the conditions of this mining lease.		Reflects the conditions of approval under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997; and any other approvals relevant to the development including the conditions of this mining lease (Section 1.2).		
	c) The MOP must be prepared in accordance with the ESG3; Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at: www.resources.nsw.gov.au/environment		A high level review of the MOP Amendment A by the auditors indicated that it has been prepared generally in accordance with the ESG3; Mining Operations Plan (MOP) Guidelines September 2013.	Compliant	
	d) The lease holder may apply to the Minister to amend an approved MOP at any time.		- The MOP was revised to incorporate the importation of water from Charbon Colliery (SSD_5581 MOD 2) and to include the 2MW solar plant (DA033/19) and submitted to the Resource Regulator for approval on 31 March 2020. - The MOP Amendment A was approved by the Resources Regulator on 9 April 2020.	Compliant	
	e) It is not a breach of this condition if: - the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the - Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Mine Health and Safety Act 2004 / Coal Mine Health and Safety Act 2002 and Mine Health and Safety Regulation 2007 / Coal Mine Health and Safety Regulation 2006 or the Work Health and Safety Act 2011; and - the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.		Centennial Airly advised that during the extended audit period no breach of condition 3(a) had occurred as a result of complying with any lawful order or direction given under the stated legislation. Consequently, this condition has not been triggered.	Not triggered	
	f) The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: - provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; - be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and - be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at: www.resources.nsw.gov.au/environment. <i>Note: The Rehabilitation Report replaces the Annual Environmental Management Report.</i>	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021) - Form and Way Annual Rehabilitation Report and Forward Program for Small and Large Mines (Resources Regulator, September 2020) - Annual Review Guideline (DPIE, 2015)	- The 2018, 2019 and 2020 Annual Reviews include the Rehabilitation Report reporting requirements of ML1331 and SSD_5581. - Centennial Airly have reported on rehabilitation during the period of the IEA in Annual Reviews. The Annual Review has been prepared to meet the requirements of the Annual Review Guideline (DPIE, 2015). - The 2018 and 2019 Annual Reviews have been signed and submitted annually to the Resources Regulator, DPIE and other agencies on 31 March each year. - The 2018, 2019 and 2020 Annual Reviews include actions that have been undertaken to respond to feedback on the previous year's Annual Review (if any), the status of rehabilitation within the annual reporting period; and the proposed rehabilitation for the following year (next reporting period). No rehabilitation was undertaken during 2018, 2019 and 2020 as there is limited opportunity for progressive rehabilitation to occur at Airly Mine prior to the cessation of life-of-mine operations. - The Annual Reviews report that there are no areas of land available to be rehabilitated as all areas of the active disturbance footprint are used for mining operations; and that Centennial Airly will conduct rehabilitation works in accordance with the approved Mining Operations Plan / Rehabilitation Management Plan at the completion of life-of-mine operations. - The Resources Regulator issued a new guideline in September 2020 that sets out the prescribed form and way required for an annual rehabilitation report and forward program for small and large mines, in accordance with CI 8 of Schedule 8A to the Mining Regulation 2016. A high level review of the 2020 Annual Review by the auditors indicated that it has been prepared generally in accordance with the guideline including: - Lease block details (Table 1). - Responsible personnel for environmental management (Table 4). - Current development consents, leases and licence (Table 5). - There was no information on land ownership and land use. - Stakeholder consultation (limited consultation on rehabilitation as no rehabilitation undertaken during the period of the IEA). - Surface disturbance and rehabilitation activities during the annual reporting period. There was no rehabilitation undertaken during the period of the IEA, and disturbance footprint was included (Section 10.1) - Material production (Table 6) included overburden, ROM Coal, coarse reject and fine reject. The 2019 Annual Review reported material in tonnes and did not include stripped topsoil (as required by the guideline). It is noted that no topsoil, overburden, coarse reject or fine reject was produced during the period of the IEA. - Status of mining at completion of annual reporting period (Plan 3, AM02568 dated 22 March 2021). - Status of rehabilitation at completion of annual reporting period. As no rehabilitation has been undertaken, there was no requirement for this information.	Compliant (C-10)	C-10 Recommendation R13: Engage with DPIE and the Resources Regulator to agree on the format of the Annual Review on how to meet the requirements of the Annual Review Guideline (DPIE, 2015) and the Form and Way Annual Rehabilitation Report and Forward Program for Small and Large Mines (Resources Regulator, September 2020).

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation
			- Although no rehabilitation has been undertaken and disturbance and rehabilitation statistics are included in the 2020 Annual Review, information is not presented in the format prescribed in the Form and Way Annual Rehabilitation Report and Forward Program for Small and Large Mines e.g.: - Table 4 - Status of disturbance and rehabilitation at end of reporting period. - Table 5 - Rehabilitation key performance indicators. - Table 8 - Progressive achievement of established rehabilitation new Table 8. - Rehabilitation monitoring and research findings. - Table 9 - Forward program - Tables 10, 11, 12 and 13 Submission of Plan 2 spatial data to the mine rehabilitation portal. - Many of the requirements in the Form and Way are not triggered by Airly Mine as there has been no rehabilitation undertaken during 2018, 2019 and 2020 as there is limited opportunity for progressive rehabilitation to occur at Airly Mine prior to the cessation of life-of-mine operations. The 2020 Annual Review reports that there is also no rehabilitation planned for 2021. A high level review of the 2020 Annual Review against the requirement of the Form and Way by the auditors indicated that it has been generally prepared in accordance with the guideline with some minor exceptions. A recommendation has been included to revise the format of the Annual Review to comply with all of the requirements of the Form and Way Annual Rehabilitation Report and Forward Program for Small and Large Mines.		
Non-Compliance Reporting					
ML 1331-4	(a) The lease holder must notify the Department upon becoming aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations; (b) Notifications under condition 4(a) must be provided in the form specified on the Department's website within seven (7) days of the mining lease holder becoming aware of the breach.	- Letter to Centennial Airly, Variation of Conditions 4 and 5 (Resources Regulator, 26 March 2018) - Incident Investigation (Centennial Airly, December 2020) - Letter to Resources Regulator WHS Act 2011 Section 155 Notice NTCE0006637 (Centennial Airly, 16 October 2020) 2020 Annual Review (Centennial Airly, 2021) - Email to MCW Environmental 2021 IEA consultation (Resources Regulator, 5 February 2021)	- The following information regarding the exceedance of EIS subsidence predictions and surface cracking was provided to the Resources Regulator (as reported in the Incident Investigation Report, dated 2 December 2020): - The initial outcomes of a subsidence review and site inspection were documented by MSEC in a report dated 1 May 2020 was provided to the Resources Regulator on 10 June 2020. - Updated subsidence model review (Strata²) on 10 June 2020. - Provision of the notification provided to DPIE regarding surface crack (Fracture 01) to the Resources Regulator on 10 July 2020. - Notification to Resources Regulator of the second surface crack (Fracture 02) via a Section 155 Notification under the Work Health and Safety Act 2011. - Incident notification on 25 November 2020. - The 2020 Annual Review reports that all conditions of the Mining Lease 1331 were complied with (Table 2). - In response to consultation with the Resources Regulator as part of this IEA, no breaches of ML 1331 or the Mining Act and Regulations were identified. - In response to a request for information on the observations of any subsidence impacts in the Mt Airly Panel and Pillar Mining Zone since 10 July 2020 from the Resources Regulator under a WHS Act Section 155 Notice, Centennial Airly provided a written response including photos. No further correspondence on this Notice was sighted. - There was no documentation provided to MCW Environmental that the Resources Regulator has advised Centennial Airly that the exceedance of EIS subsidence and surface cracking predictions represent a breach of the mining lease or breaches of the Mining Act or Regulations.	Not triggered	
Environmental Incident Report					
ML 1331-5	The lease holder must provide environmental incident notifications and reports to the Secretary no later than seven (7) days after those environmental incident notifications and reports are provided to the relevant authorities under the Protection of the Environment Operations Act 1997. Definition Environmental incident notifications and reports means any notifications and reports required to be provided to relevant authorities under Part 5.7 or Part 5.7A of the Protection of the Environment Operations Act 1997.	- Letter to Centennial Airly, Variation of Conditions 4 and 5 (Resources Regulator, 26 March 2018) - Letter to DPIE Notification of TARP Level Orange Level B Incident (Centennial Airly, 10 July 2020) - Letter to DPIE, Incident Notice Condition 9 of Schedule 6 for surface crack (Fracture 2), surface crack (Fracture 1) and mine subsidence greater than 125mm. (Centennial Airly, 24 November 2020) - Letter to Centennial Airly Incident Subsidence Impact of Surface Fractures (DPIE, 11 December 2020) - Email with attached Incident Notification to Commonwealth Department of Agriculture, Water and Environment (Compliance Division) (Centennial Airly, 25 November 2020) - Email with attached Incident Investigation 2 December 2020 to Commonwealth Department of Agriculture, Water and	- Review of the 2018, 2109 and 2020 monthly Environmental Monitoring Reports, identified there was no exceedance of EPL 12374 concentration and volume limits during the period of the IEA. - Review of the 2018, 2109 and 2020 Annual Reviews identified that there were three incident/non-compliances relating to the exceedance of performance measures in SSD_5581 Schedules 3 Condition 2 during the period of the IEA. - The following subsidence incidents were reported to DPIE, Resources Regulator and NPWS in 2020: 31 January 2020 - Subsidence greater than the EIS prediction of 125 millimetres was measured in the B-Line subsidence survey in January, March, April, June, August, September and October 2020. 7 July 2020 – a surface crack (Fracture 01) was identified during visual surface inspections 5m west of GNSS unit (120 metres from the nearest cliff in the Cliff Zone of First Workings). 10 July 2020 – a surface crack (Fracture 02) was identified during visual surface inspections 70 metres from the nearest cliff in the Cliff Zone of First Workings). - DPIE and the IEP were notified of subsidence exceeding the EIS prediction in February 2020 and following further investigations and consultation, an incident investigation report was provided to regulatory agencies (Commonwealth Department of Agriculture, Water and Environment (Compliance Division), NPWS, Resources Regulator and DPIE) in December 2020. - A letter from DPIE (11 December 2020) states “I refer to Centennial Airly Pty Limited (Centennial Coal) incident notification and the detailed incident report submitted to the Department Planning, Industry and Environment (Department) in relation to subsidence impacts of surface fractures greater than 125 millimetres, identified from subsidence monitoring on 31 January 2020, which is attributed to mining operations from Airly Coal Mine SSD 5581 (Consent).....The Department notes the notification and detailed incident reports have been submitted in accordance with the requirements of Schedule 6, Condition 9 of the Consent. Please be advised the Department has commenced an	Not triggered	

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation
		Environment (Compliance Division) (Centennial Airly, 25 November 2020) - Email with attached Incident Notification Surface Crack 2 to NPWS (Centennial Airly, 24 November 2020) - Email with attached Incident Investigation 2 December 2020 to NPWS, (Centennial Airly, 25 November 2020) - Letter to Resources Regulator WHS Act 2011 Section 155 Notice NTCE0006637 in response to request for information on subsidence impacts since 10 July 2020 (Centennial Airly, 16 October 2020) - Incident Investigation Report (Centennial Airly, 2 December 2020) - Monthly Environmental Monitoring Report (2018 -2021) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	<i>investigation into the incident and is carefully reviewing the details provided. The Department is investigating whether Centennial Coal has potentially breached Section 4.2(1)(b) of the Environmental Planning and Assessment Act 1979, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent”.</i> - The incident investigation report (Centennial Airly, 2 December 2020) documents consultation (including presentations, meeting and correspondence) that was undertaken in 2020 between Centennial Airly and stakeholders (pages 5 and 6) with the following key notifications by Centennial Airly: 10 July 2020: Submission of notification to DPIE regarding TARP Level Orange Level B Incident and the identification of a subsidence crack (Fracture 01) associated with mining in the Panel and Pillar Mining Zone. This notification was also reportedly provided to Resources Regulator. 1 September 2020: Re-submission of the subsidence crack (Fracture 01) to DPIE with a request it be provided to the Airly Mine IEP. 3 September 2020: Provision of additional information to DPIE requested by the Airly Mine IEP. 16 October 2020: Notification to Resources Regulator of the second surface crack (Fracture 02) via a Section 155 Notification under the Work Health and Safety Act 2011. This notification provided details of subsidence impacts in the Mt Airly Panel and Pillar Mining Zone including surface crack measurements and photographs. No response has been received from the Resources Regulator. 24 November 2020: Submission of a formal notification of an incident to DPIE in accordance with Schedule 6 Condition 9 of the SSD 5581 development consent. 25 November 2020: Provision of incident notification to the Resources Regulator, NPWS and the Commonwealth Department of Agriculture, Water and Environment. - Part 5.7 (Section 147) of the Protection of the Environment Operations Act provides a duty to notify pollution incidents causing or threatening material harm. The Protection of the Environment Operations Act defines a ‘pollution incident’ as <i>an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise; and ‘material harm’ as:</i> a) <i>harm to the environment is material if—</i> (i) <i>it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or</i> (ii) <i>it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and</i> (b) <i>loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.</i> As the exceedance of EIS subsidence predictions and surface cracking does not represent a pollution incident as defined under the Protection of the Environment Operations Act 1997, the auditors have assessed that a duty to notify under Part 5.7 or Part 5.7A of the Protection of the Environment Operations Act 1997 has not been triggered. - Although the exceedance of the SSD_5581 Schedule 3 Condition 2 performance criteria (subsidence >125 mmm EIS prediction) was identified in January 2020 and surface cracking (Fracture 01 and Fracture 02) was identified in July 2020; the Incident Notification and Incident Investigation Report were provided to DPIE on 24 November and 2 December 2020, respectively. Between the identification of the subsidence exceeding EIS predictions in January 2020, surface cracking in July 2020 and Incident Notification in December 2020; numerous consultations with regulators, the IEP and the CCC; and investigations by subsidence subject matter experts was undertaken. Following the receipt of the Incident Investigation report (Centennial Airly, 2 December 2020) Centennial Airly has received a letter from DPIE (11 December 2020) that states <i>“I refer to Centennial Airly Pty Limited (Centennial Coal) incident notification and the detailed incident report submitted to the Department Planning, Industry and Environment (Department) in relation to subsidence impacts of surface fractures greater than 125 millimetres, identified from subsidence monitoring on 31 January 2020, which is attributed to mining operations from Airly Coal Mine SSD 5581 (Consent).....The Department notes the notification and detailed incident reports have been submitted in accordance with the requirements of Schedule 6, Condition 9 of the Consent. Please be advised the Department has commenced an investigation into the incident and is carefully reviewing the details provided. The Department is investigating whether Centennial Coal has potentially breached Section 4.2(1)(b) of the Environmental Planning and Assessment Act 1979, by carrying out development not in accordance with the conditions of development consent, specifically Table 1 of Schedule 3, Condition 2 of the Consent”.</i> - The Incident Investigation Report (Centennial Airly, December 2020) states that Fracture 01 and Fracture 02 does not present a risk to public safety as they are small enough not to allow a person's foot to become trapped or be a tripping hazard due to there being no stepping of the land surface. No destabilisation of rock surfaces is evident that could result in slabbing or dislodgement of rock		

Appendix A3: Mining Lease 1331 – Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation
			<i>material of a size that could cause injury to persons potentially accessing the area. Access is difficult to both fracture sites which reduces the likelihood of persons being in the area should a failure occur to being highly unlikely. The overall risk ranking has been determined as low. It should be noted that Mt Airly is naturally highly fractured. These natural fractures are very large in places and present a significant natural risk of injury to persons using the surface. The subsidence induced fractures on Mt Airly present a much lower level of public safety risk than the natural land surface of the mountain.</i> Based on the review of the Incident Investigation Report (Centennial Airly, 2 December 2020), the auditors assessed that the subsidence exceeding EIS predictions and surface cracking incident did not trigger the duty to notify the relevant authorities under the Protection of the Environment Operations Act 1997.		
Subsidence Management					
ML 1331-6	The lease holder must not commence or undertake underground mining operations that may cause subsidence of the surface other than in accordance with an Eligible Subsidence Management Plan approved by the Director-General. For the purposes of this condition, an 'Eligible Subsidence Management Plan' means: i. A Subsidence Management Plan prepared in accordance with current government guidelines for the preparation of Subsidence Management Plans; or ii. Those parts of an Extraction Plan or another type of plan: - prepared, either in whole or in part, with reference to current government guidelines for the preparation of a Subsidence Management Plan; and - approved for the purposes of the Environmental Planning and Assessment Act 1979 (or any planning legislation which replaces that Act) by the Minister or Director-General of the Department of Planning & infrastructure, or another officer of that Department authorised to approve such a plan, which relate to issues of subsidence.	- Subsidence Monitoring Program: Splitting and Quartering Extraction Plan (ML1331) (EP-SMP) (Centennial Airly, May 2018) - Review of Environmental Factors for Proposed Subsidence Monitoring Activities (RPS, 6 June 2018) - GNSS (real time) Survey Monitoring System Proposal (GNSS Monitoring, 15 March 2018) - Letter to Centennial Airly IEP review of Updated Mt Airly Panel and Pillar Mining Zone Master Tarp and Subsidence Monitoring Plan (IEP, 27 May 2019) - Estimation of Surface Impacts due to the Extraction of Miniwalls 2 to 15 (Strata², March 2019)	- Mining Operations have been carried out under approved Extraction Plans as detailed in SSD_5581 Schedule 3 Condition 7 (Refer Appendix A1 of this IEA). - The Subsidence Monitoring Program, Splitting and Quartering Extraction Plan (ML 1331) (Centennial Airly, May 2018) was approved as part of the Splitting and Quartering Extraction Plan (ML 13331) (Centennial Airly, May 2018). Evidence of consultation was included in the Program (Table 1.1 and Appendix 4) and included IEP, Resources Regulator and BCD. - The IEP reviewed the Subsidence Monitoring Plan, Public Safety Management Plan and Land Management Plan and in a letter to Centennial Airly (24 May 2018) advised “<i>The IEP considers that the management plans reviewed are generally suitable to manage the potential for surface impacts to cliffs, minor cliffs, pagodas and other surface features that may result from the proposed mining in EP Area.</i>”	Compliant	
Resource Recovery					
ML 1331-7	During the life of the Mining Operations Plan, The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.		This condition is not considered to be environmental in nature and therefore has not been assessed.		
Security					
ML 1331-8	The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future. The amount of the security deposit to be provided has been assessed by the Minister at \$3,236,000.	- Letter to Centennial Airly ML 1331 Notification of Assessment of Security Deposit (Resource Regulator, 10 January 2018) - Letter to Centennial Airly ML 1331 Notification of Assessment of Security Deposit (Resource Regulator, 16 April 2020) - Email to MCW Environmental Bank guarantees (Centennial Airly, 22 March 2021) - Rehabilitation Cost Calculation v.1.11 2016 Airly Colliery AMENDED SP.xls (Centennial Airly, 28 March 2017). 2020 Annual Review (Centennial Airly, 2021)	- The 2020 Annual Review references that the Rehabilitation Cost Estimate is revised annually and submitted to the Resources Regulator. - Centennial Airly were advised by the Resource Regulator on 10 January 2018, that the Assessed Deposit for rehabilitation was \$4,384,000. - Centennial Airly were advised by the Resource Regulator on 16 April 2020, that the Assessed Deposit for rehabilitation was \$4,660,500. - The auditors sighted screenshots of the following Bank Guarantees which total \$4,660,500: - ANZP Bank Guarantee No. DG620683418 for \$256,000 for rehabilitation to the benefit of the DMR, issued 13 July 2017. - ANZP DG733423418 for \$4,384,000 for rehabilitation to the benefit of the DMR, issued 18 October 2018. - NABP CENTENNIAL00240 for \$20,500 for rehabilitation to the benefit of the Dept of Regional NSW, issued 6 July 2020. - As the current security is consistent with the most recent Resource Regulator Assessed Deposit, this condition was assessed as compliant. - The assessment above is based on screenshots as indicated. MCW Environmental did not verify the validity of the screen shot information.	Compliant	
Cooperation Agreement					
ML 1331-9	The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as: - access arrangements - operational interaction procedures - dispute resolution	- Mining Lease 1331 - Authorisation 232 2019 Annual Review (Centennial Airly, 2020)	- Airly management reported that there are no overlapping titles; hence the requirement for a Cooperation Agreement has not been triggered. - SSD_5581 allows Centennial Airly to extract up to 1.8 million tonnes per annum (Mtpa) of run of mine (ROM) coal within the mining lease ML1331, with mining extending east of the lease into exploration licence area (Authorisation Area 232). Both titles are held by the one company being Centennial Airly Pty Limited (ACN 078 693 722).	Not triggered	

Appendix A3: Mining Lease 1331 – Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation
	- information exchange - well location - timing of drilling - potential resource extraction conflicts; and - rehabilitation issues.				
Environmental Protection Zones					
ML 1331-40 (a)	Before commencing to win or work any coal under Environmental Protection Zones designated on Plan ACP 1 and referred to in the Development Consent Condition 12(a), the registered holder shall notify the Chief Inspector of Coal Mines of his intention to do so and shall submit a plan of the system whereby such coal is proposed to be won or worked and shall obtain the written approval of the Chief Inspector of Coal Mines to such system. No such coal shall be won or worked except in accordance with the system approved in writing by the Chief Inspector of Coal Mines as altered added to or omitted from as hereinafter provided. In connection with every such submission the registered holder shall do such acts and furnish such information as the Chief Inspector of Coal Mines may require. The Chief Inspector of Coal Mines may at any time cancel any approval to a system and may from time to time alter omit from or add to any system approved by him.	- Email to Resources Regulator Proposal to Suspend Condition 10 and 11-Airly Mine (Centennial Coal, 8 May 2018) - Letter to Centennial Coal Instrument of Suspension for Mining Lease 1331 (Act 1992) (Resources Regulator, 15 March 2019)		Suspended	
ML 1331-40 (b)	Mining is not to be conducted within the area referred to in Condition 10 (a) of this lease (Environmental Protection Zones, shown on ACP 1 map in Development Consent, based on Novacoal 1:8000 map of proposed coal lease, development consent area and protected zones dated December 1992) unless such mining will not adversely impact on the structural and visual significance of high, external cliffs and other major rock formations known as "pagodas" and "beehives", located within the Environmental Protection Zones. Any such mining conducted in the Environmental Protection Zones is to be as approved by the Chief Inspector of Coal Mines. (High is defined as 20m or more change in elevation in any section with a slope greater than 75 degrees).				
Second Workings					
ML 1331-11	a) Any application for second workings approval shall be accompanied by a detailed land form survey of the topography overlying the area of the application. Such survey will include and detail all cliffs which are 20 metres or higher and all major pagodas and beehives. A copy of such survey shall be provided to the New South Wales Department of Planning, the Council of the City of Greater Lithgow, the National Parks and Wildlife Service, and the special monitoring committee referred to in Development Consent Condition No. 31. b) Initial applications for second workings approvals are to be made for relatively small and less sensitive areas within the lease. This is with a view to collecting site specific data from initial operations for use in subsequent approvals. c) The registered holder shall, as far as is possible, adopt mining techniques and practices (consistent with optimising coal extraction outside of Environmental Protection Zones) which minimise disturbance to high internal cliffs and major "pagodas" and "beehives".			Suspended	
Exploration Reporting					
ML 1331-12	Note: Exploration Reports (Geological and Geophysical)	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	The 2018 Annual Review reported that there was no exploration undertaken during 2018. The 2019 and 2020 Annual Reviews advise that Authorisation A232 is currently awaiting renewal approval from the Resources Regulator.	Not triggered.	

Appendix A3: Mining Lease 1331 – Compliance Assessment

No.	Requirement	Evidence	Findings	Compliance Status	Recommendation
	The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 57 of the Mining Regulation 2010. Reports must be prepared in accordance with Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales (Department of Trade and Investment; Regional Infrastructure and Services 2010).		Centennial Airly advised that no exploration borehole drilling was conducted during the period of the IEA, consequently, the requirement to lodge an exploration report was not triggered.		

Appendix B

Status of Recommendations (for non-compliances) from 2016 IEA

Appendix B: Status of Recommendations from Previous IEA (MCW Environmental, 2018)

2018 REC No.	Condition (Sch.-cond.)	2018 IEA Recommendation (non-compliances (NC), not verified (NV) and Opportunity for Improvement (OFI) conditions)	2021 IEA Evidence	2021 IEA Findings	Status (2020)
C-10	2018 IEA Report s6.4.2	Recommendation: Given the involvement of the IEP as subsidence subject matter experts on the project, it is recommended that DPE and Airly consider directing the IEP to conduct Independent Third Party reviews of the subsidence findings in the Annual Review, in particular assessment of whether Airly are meeting the requirements for the performance measures as defined in the Development Consent.	121 and 200 Panel Subsidence Monitoring Outcomes (Strata², March 2019) - Stress Change Monitoring Results in 207 Panel at Airly Mine (Strata 2, December 2018) 121 and 200 Panel Subsidence Monitoring Outcomes (Strata², May 2019) 2019 Annual Subsidence Review (Strata², December 2019) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2020) 2020 Annual Review (Centennial Airly, 2021)	- Refer Section 2.5 of the main 2021 IEA report. - An Independent Expert Panel (IEP) has been established for the project and has been involved in the 2020 Subsidence Incident. - In response to feedback for the 2021 IEA, BCD requested that this recommendation be re-considered. - Given the involvement of the IEP as subsidence subject matter experts during the period of the IEA, the 2020 subsidence incident and the request from BCD, the 2018 IEA recommendation remains relevant.	C-11 Recommendation 14: DPIE and Centennial Airly to consider directing the IEP to conduct independent third party reviews of the subsidence findings in the Annual Review, in particular assessment of <i>whether Airly are meeting the requirements for the performance measures as defined in the Development Consent.</i>
SSD_5581					
01	2-2(a)	NC: Airly to discuss the mine plan with DPE and the IEP to clarify if there is any inconsistency and what action should be taken to address any inconsistency between the planned mining and the Mining Schedule.	- Letter to DPIE: 2018 IEA Non-compliance Sch 2-2 (a) issue to be addressed (Centennial Airly, 7 August 2018) - Email to Centennial Airly: IEA Issues to be addressed (DPIE, 8 August 2018)	Centennial Airly clarified with DPIE (August 2018) that SSD_5581 does not apply to these workings as they were undertaken under the MOD 3 Extraction Plan Variation (2016). An email response from DPIE (August 2018) advised that no further action was planned at this time.	Closed
02	4-18	NC: Continue to liaise with DPE in seeking its endorsement of the manner in which coal transport is currently being monitored and reported by Airly.	- EPL 12374 Monthly Environmental Monitoring Report (Centennial Airly, Jan - Dec 2018) - Letter to DPE dated 6 July 2017 re Airly Mine Extension Project – Monitoring and Reporting of Coal Transport Data 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019) 2020 Annual Review (Centennial Airly, 2020)	Centennial Airly reported coal transport data in 2018, 2019 and 2020 Annual Reviews and in the monthly Environmental Monitoring Reports until October 2019.	Closed
03	6-14	NC: Ensure that all approved management plans; Mining Operations Plans and IEP	https://www.centennialcoal.com.au/operations/airly/	Approved management plans; Mining Operations Plans and IEP reports are placed	Closed

Appendix B: Status of Recommendations from Previous IEA (MCW Environmental, 2018)

2018 REC No.	Condition (Sch.-cond.)	2018 IEA Recommendation (non-compliances (NC), not verified (NV) and Opportunity for Improvement (OFI) conditions)	2021 IEA Evidence	2021 IEA Findings	Status (2020)
		reports are placed on the website immediately once approved or issued.		on the website. Refer Table 1.2 in the main 2021 IEA Report.	
04	2-10	NV: Continue to liaise with DPE to confirm surrender of the previous Development Consent has been satisfactorily completed.	- Letter to DPIE, Notice of surrender of Development Consent DA162/91 (as Modified) for Airly Mine (Centennial Airly, 31 January 2018) - Letter to Centennial Airly: Surrender of Development Consent DA 162/91 (DPIE, 10 December 2018) - Airly Development Consent 162-91 Surrender - Land Ownership Table (Centennial Airly, 12 January 2018)	DPIE accepted the surrender of Development Consent DA 162/91 in a letter dated 10 December 2018.	Closed
05	4-5	NV: Progress negotiations with regulators and relevant landowner to establish a HVAS monitoring site.	Certificate of Analysis HVAS (ALS, 27 January 2021)	The HVAS was commissioned in 2020.	Closed
06	4-7(d)	NV: Continue to liaise with DPE on the need for submitted new and/or revised environmental management plans, programs and strategies to be approved.		Refer Table 1.2 in the main 2021 IEA Report.	In progress
07	3-1	OFI: Confirm with DPE that second workings under the MOD 3 EP Variation are not applicable under this condition	- Letter to DPIE: 2018 IEA Non-compliance Sch 2-2 (a) issue to be addressed (Centennial Airly, 7 August 2018) - Email to Centennial Airly: IEA Issues to be addressed (DPIE, 8 August 2018)	Centennial Airly clarified with DPIE (August 2018) that SSD_5581 does not apply to these workings as they were undertaken under the MOD 3 Extraction Plan Variation (2016). An email response from DPIE (August 2018) advised that no further action was planned at this time.	Closed
08	3-5	OFI: Include in the Annual Reviews a section on Implementation of the Extraction Plan specifically related to mining and compliance of the mine workings with the mine design.	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019)	The 2018 and 2019 Annual Reviews include a statement that first and second workings were carried out within respective Extraction Plans.	Closed
10	4-2	OFI: It is recommended that noise reporting includes justification for the use of LA1,1min to demonstrate compliance against the night time criterion LA(max)	The 2018 Annual Environmental Noise Monitoring (Global Acoustics, 2019)	An explanation and justification of the use of LA1,1min is provided in the 2018 Noise Monitoring Report.	Closed
11	4-5	OFI: DG1 and DG2 are to remain, consider re-siting the gauges such that they are compliant with AS 3580.10.1	Dust Deposition Gauge Audit (ALS, 3 April 2019)	Dust deposition gauges were relocated in March 2019. An audit conducted by ALS in April 2019 assessed DM1, DM2 and DM3 as compliant.	Closed
12	4-15	OFI: It is recommended that Airly update and re-submit the Water Management Plan to DPE after addressing comments on the Plan from DPE received in June 2018.	Water Management Plan (Centennial Airly, July 2018)	The Water Management Plan was approved by DPIE in 2018 and was revised following approval of SSD_5581 MOD 2 and sent to DPIE for approval in October 2019. Approval	Closed

Appendix B: Status of Recommendations from Previous IEA (MCW Environmental, 2018)

2018 REC No.	Condition (Sch.-cond.)	2018 IEA Recommendation (non-compliances (NC), not verified (NV) and Opportunity for Improvement (OFI) conditions)	2021 IEA Evidence	2021 IEA Findings	Status (2020)
			- Letter to Centennial Coal approving Water Management Plan (DPIE, 7 September 2018) - Letter to DPIE requesting approval of revised Water Management Plan following MOD 2(Centennial Airly, 31 October 2019)	of the revised 2019 Water Management Plan has not been received from DPIE. Refer Recommendation R10: SSD_5581 Schedule 6 Condition 2.	
13	4-15	OFI: Report to DPE non compliances with the EPL criteria (e.g. the exceedance discussed for this condition) or the criteria defined in the Water Management Plan to avoid the risk on non reporting of incidents or confirm with DPE the extent to which reporting of such events is required.	- EPL 12374 Monthly Environmental Monitoring Report (Centennial Airly, Jan - Dec 2018) 2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019) 2020 Annual Review (Centennial Airly, 2020)	No non-compliances with EPL 12375 concentration or volume limits were recorded during the period of the IEA	Closed
14	6-14	OFI: Where management plans have not yet been approved under SSD_5581, consider, in consultation with DPE, placing corresponding management plans approved under the previous consent on the Centennial Coal / Airly website	2018 Annual Review (Centennial Airly, 2019) 2019 Annual Review (Centennial Airly, 2019)	A Management Plan Approval Summary was included in the 2018 and 2019 Annual Reviews.	Closed
ML1331					
15	2	OFI: Remove sediment fence and repair ground at Borehole ARP07 where controls are not required in the area.	2018 Annual Review (Centennial Airly, 2019)	The 2018 Annual Review (Appendix 9) reports that '<i>following consultation with NPWS, sediment fencing was removed. from ARP07 on 6/12/2018</i>' and that '<i>erosion & sediment control maintenance works was also conducted for all other remaining borehole sites within the SCA on 6/12/2018. Sediment fencing was removed from all sites that were assessed to be adequately rehabilitated, self sustaining and long term stable.</i>'	Closed.
16	5	OFI: Future incident reports to DRG should contain all requirements of Condition 5 of the Mining Lease and be submitted within 7 days as specified in the condition.		- Refer Appendix A3 ML1331 of the main 2021 IEA Report. - Condition 5 of ML1331 was not triggered during the period of the IEA.	Closed
Environment Protection Licence 12374					
17	L2.1	NC: Complete the investigation of options to improve Airly's surface water		Refer Appendix A1 SSD_5581 Schedule 4 Condition 10	Closed

Appendix B: Status of Recommendations from Previous IEA (MCW Environmental, 2018)

2018 REC No.	Condition (Sch.-cond.)	2018 IEA Recommendation (non-compliances (NC), not verified (NV) and Opportunity for Improvement (OFI) conditions)	2021 IEA Evidence	2021 IEA Findings	Status (2020)
		management system including automation of pumps and construction of additional downstream pollution control dam; and implement the findings. It is noted that the Annual Review 2017 contains a commitment to "Investigate options for the installation of a pollution control dam, downstream of Airly operations to improve the Mines pollution control management".		Improvements to the hydrocarbon storage area and surface water management system have been undertaken during the period of the IEA.	
18	O2.1	OFI: Continue to develop the design and then construction of best practice hydrocarbon management in the new site facilities such as the workshop.		- Refer Appendix A1 SSD_5581 Schedule 4 Condition 10 - Improvements to the hydrocarbon storage area and surface water management system have been undertaken during the period of the IEA.	Closed
Groundwater Management Plan and Model (Opportunities for Improvement)					
19	SSD-5581 4-15	OFI: The water management plan, and the assignment of groundwater level triggers for unsaturated VWP sensors, should be reviewed and updated.		Subject to Independent Expert Review. Refer Appendix G of the main 2021 IEA Report.	Closed
20		OFI: Review monitoring locations for Gap Creek and Genowlan Creek alluvial standpipes. Are the standpipes located in the deepest sections of the alluvium?	2018 Annual Review (Centennial Airly, 2019)	Centennial Airly advised "<i>Alternative locations are unlikely to intercept more permanent groundwater. It is considered that the coverage of alluvial groundwater is sufficient.</i>"	Closed
21		OFI: Review procedures for analysis, presentation and use of VWP data.		Subject to Independent Expert Review. Refer Appendix G of the main 2021 IEA Report.	Closed
22		OFI: Review and revise water quality analytical suite.		Subject to Independent Expert Review. Refer Appendix G of the main 2021 IEA Report.	Closed
23		OFI: Review lack of dynamic response in model predictions.		Subject to Independent Expert Review. Refer Appendix G of the main 2021 IEA Report.	Closed
24		OFI: Assess potential for re-activation of major geological structures, particularly seam to surface structures that intersect or are coincident with the Gap Creek and Genowlan Creek alluvial aquifers.		Subject to Independent Expert Review. Refer Appendix G of the main 2021 IEA Report.	Closed

Appendix C

DPIE Endorsement of IEA Auditors

Centennial Airly Pty Limited
Attention: Mr James Wearne
PO BOX 1000
Toronto New South Wales 2283

13/01/2021

Dear James Wearne

**Airly Coal Project (SSD-5581)
IEA Auditor Request**

I refer to your letter dated 16 December 2020 seeking the Secretary's endorsement for an auditor to undertake the Independent Environmental Audit (audit) for the Airly Coal Project SSD 5581 (Consent).

The Department has reviewed the nominations and information you have provided and is satisfied that the MCW Environmental Consulting Pty Limited (MCW) Audit Team is suitably qualified and experienced. Consequently, I can advise that the Secretary approves the appointment of MCW to prepare the Independent Environmental Audit Report.

In accordance with Schedule 6 Condition 12 of SSD5581 and the Independent Audit Post Approval Requirements, the Secretary has agreed to the following audit team:

- Michael Woolley – Lead Auditor
- Jenny MacMahon - Auditor

Please ensure this correspondence is appended to the Independent Audit Report.

The Audit must ensure it has addressed all the Independent Environmental Audit conditions of Consent. Furthermore, the Audit is to be prepared, undertaken and finalised in accordance with *AS/NZS ISO 19011 Australian/New Zealand Standard: Guidelines for quality and/or environmental management systems auditing* and consider the requirements of the Independent Audit Post Approval Requirements. Failure to meet these requirements may require revision and resubmission.

The Department reserves the right to request an alternate auditor or audit team for future audits.

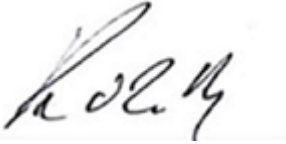
Notwithstanding the agreement for the above listed audit team for this Project, each respective project approval or consent requires a request for the agreement to the auditor or audit team be submitted to the Department, for consideration of the Secretary. Each request is reviewed and depending on the complexity of future projects, the suitability of a proposed auditor or audit team will be considered.

Within 12 weeks of commissioning the audit, you are required to submit a copy of the audit report to the Secretary, together with your response to any recommendations contained in the audit report and a timetable to implement the recommendations.

Prior to submitting the audit report to the Secretary, it is recommended that you review the report to ensure it complies with the relevant conditions of consent.

If you wish to discuss the matter further, please contact Jennifer Rowe on 0242471851.

Yours sincerely

A handwritten signature in black ink, appearing to read 'K. O'Reilly', is enclosed in a thin black rectangular border.

Katrina O'Reilly
Team Leader - Compliance
Compliance
As nominee of the Planning Secretary

Centennial Airly Pty Limited
Attention: Mr James Wearne
PO BOX 1000
Toronto New South Wales 2283

15/02/2021

Dear Mr Wearne

Airly Coal Project (SSD-5581)
Endorsement of Independent Expert – Groundwater

I refer to your letter dated 9 February 2021 seeking the Secretary's endorsement of an independent expert to complete the independent expert review of the Groundwater Management Plan, as a requirement of the Independent Environmental Audit for the Airly Coal Project SSD 5581.

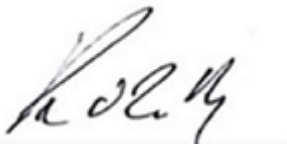
The Department has reviewed the nomination and information you have provided and is satisfied that Mr Noel Merrick, Senior Principal Hydrogeologist of Hydro Algorithmics, is suitably qualified and experienced. Consequently, I can advise that the Secretary approves this appointment.

Please ensure this correspondence is appended to the Independent Audit Report.

The Department reserves the right to request an alternate expert for future audits.

If you wish to discuss the matter further, please contact Jennifer Rowe on 0242471851.

Yours sincerely

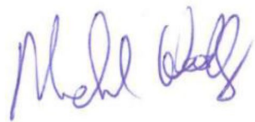


Katrina O'Reilly
Team Leader - Compliance
Compliance

As nominee of the Planning Secretary

Appendix D

Statement of Independence - Auditor

Statement of Independence	
Project Name	Airly Mine Independent Environmental Audit
Consent Number	SSD_5581
Description of Project	Underground mine
Project Address	319 Glen Davis Road, Capertee, NSW 2846.
Proponent	Centennial Airly Pty Ltd
I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;	
I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;	
I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;	
I am not an Environmental Representative for the project; and	
I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.	
Signature 	
Lead Auditor	Michael Woolley
Auditor Certification	Exemplar Global
Company	MCW Environmental Consulting Pty Ltd
Date	Expires Jan 23 2022

Appendix E

Register of Attendees at Opening and Closing Meetings

Table E-1: Opening Meeting Attendees (11 February 2021)

Attendee	Position Title
Brian Nicholls	Mine Manager
Derek Smith	Commercial Manager
David King	Technical Services Manager
Paul Williamson	Mine Mechanical Supervisor
James Pinnock	Electrical Coordinator
Sam Price	Environment and Community Coordinator
Magdalena Golik	Mining Engineer - Graduate
Michael Woolley	Lead Auditor (MCW Environmental)
Jenny MacMahon	Auditor (MCW Environmental)

Table E-2: Closing Meeting Attendees (12 February 2021)

Attendee	Position Title
Brian Nicholls	Mine Manager
David King	Technical Services Manager
James Pinnock	Electrical Coordinator
Sam Price	Environment and Community Coordinator
Magdalena Golik	Mining Engineer - Graduate
Michael Woolley	Lead Auditor (MCW Environmental)
Jenny MacMahon	Auditor (MCW Environmental)

Appendix F

Regulatory Agency Consultation

Table G-1: Agency Consultation Summary

Agency / Community Representative	Consultation	Topics	Comments and/or section where topics are addressed in this IEA
DPIE - Compliance	Email response received on 9 February 2021	1. Please ensure all Independent Environmental Audit requirements outlined in Consent have been addressed as part of the audit	Refer Appendix A1.
		2. As part of the audit please address the sites monitoring, management and mitigation measures implemented to ensure compliance with the impact assessment criteria for: - Noise, - Air quality, - Surface and Groundwater, - Biodiversity, and - Subsidence	Refer Appendix A1 and A2.
		3. Review the management plans prepared in accordance with the Consent and their status (eg review and revisions) to determine compliance with Schedule 6 Condition 3.	Refer Appendix A1 Schedules 3, 4 and 6.
		4. Review subsidence monitoring data and assess whether there are any further subsidence incidents/cracks attributed to the project.	Refer Section 2.4.1 of the main 2021 IEA report and Appendix A1 (Schedule 3 Condition 2 and Schedule 6 Condition 9).
		5. Review monitoring data and discuss whether the project is undertaking any biodiversity and water monitoring within the State Conservation Area, particularly in relation to subsidence impacts.	Refer Appendix A1 (SSD_5581 Schedule 4 Condition 15).
		6. A commitment from the 2018 Audit was the project would commission the HVAS by June 2019, however the 2019 Annual Review noted this was not completed and that it would be commissioned by July 2020. Please provide comment as to whether the HVAS has been commissioned and when.	The HVAS was commissioned on 1 January 2021.
		7. Incidents that have been reported to the Department include: Subsidence Cracks - Subsidence greater than 125mm was measured on 31 January 2020 following subsidence line surveys undertaken in accordance with the approved Mt Airly Panel and Pillar Extraction Plan	- Noted. - The coal spill occurred prior to the audit period and was covered in the previous IEA.

Agency / Community Representative	Consultation	Topics	Comments and/or section where topics are addressed in this IEA
		b. Coal Spill - Thursday, 21 December 2017, approximately 75 tonne of coal was spilt from an open wagon door on wagon number 4 of a Pacific National Coal Train during coal loading operations at Airly Mine.	
		8. Agency Consultation is required and should include, but not limited to, the following agencies/departments: a. EPA - NSW Environment Protection Authority b. NPWS – National Parks and Wildlife Services c. BCD - Biodiversity Conservation Division within DPIE (former OEH) d. DRG - Division of Resources and Geoscience within DPIE (Resources Regulator) e. DPI Water f. WaterNSW g. Council	Refer this Table (Appendix F).
		9. Enforcement Action: a. Warning Letter – Issued 26/6/20 – Failing to comply with Schedule 3, Condition 7	Refer Section 2.4 of the main 2021 IEA report.
Resources Regulator	Email response received on 5 February 2021	Review relevant mining leases and exploration licences as agreed with Resources Regulator	Refer Appendix A3 ML 1331.
		Undertake an assessment of compliance against the conditions of title related to environmental management.	Refer Appendix A1 Schedule 3, 4 and 6.
		Verify that there is a current Mining Operations Plan (MOP) in place, and it has been approved by the Regulator – review compliance against any conditions of approval of the MOP.	Refer Appendix A1 Schedule 4 Condition 27.
		Undertake a critical review of the MOP, including an assessment of its compatibility with the description of operations contained in the planning approval. In particular:	Refer Appendix A1 Schedule 4 Conditions 25 and 27.
		Review the rehabilitation strategy as outlined in the MOP to determine if it is consistent with the Project Approval in terms of progressive rehabilitation schedule; and proposed final land use(s)	Refer Appendix A1 Schedule 4 Conditions 26.

Agency / Community Representative	Consultation	Topics	Comments and/or section where topics are addressed in this IEA
		Review the rehabilitation objectives and completion criteria as outlined in the MOP to determine if they have been developed in accordance with the proposed final land use(s) as outlined in the Project Approval	Refer Appendix A1 Schedule 4 Condition 27 (e).
		Review the development and implementation of any rehabilitation monitoring programs to assess performance against the nominated objectives and completion criteria – verified by reviewing monitoring reports and rehabilitation inspection records.	Refer Appendix A1 Schedule 4 Condition 27(c), (d) and (e).
		Determine if a rehabilitation care and maintenance program has been developed and implemented based on the outcomes of monitoring program – verified by reviewing Annual Rehabilitation Programs or similar documentation.	A rehabilitation care and maintenance program has not been developed nor implemented.
		Confirm that mining operations are being conducted in accordance with the approved MOP (production, mining sequence etc.), including within the designated MOP approval boundary – to be verified by site plans and site inspection.	Refer Appendix A1 Schedule 2 Condition 2.
		Confirm that rehabilitation progress is consistent with the approved MOP as verified by site plans and a site inspection. This should include an evaluation against rehabilitation targets and whether the final landform is being developed in accordance with conceptual final landform in the Project Approval.	- Centennial Airly will conduct rehabilitation works at the completion of life-of-mine operations, in accordance with the approved Mining Operations Plan (MOP) Airly Mine 1 January 2018 to 31 December 2024 Amendment A (which incorporates the requirements of the Rehabilitation Management Plan). - The Mining Operations Plan Amendment A reports that there will be no rehabilitation undertaken during the term of the Mining Operations Plan as there is limited opportunity for progressive rehabilitation to occur prior to the cessation of life-of-mine operations and currently disturbed areas are required for current operations. - The 2018, 2019 and 2020 Annual Reviews report that no rehabilitation was undertaken during 2018, 2019 and 2020.
		Based on a visual inspection, determine if there are any rehabilitation areas that appear to have failed or that have incurred an issue that may result in a delay in achieving the successful rehabilitation outcomes.	No rehabilitation was required to be undertaken and no rehabilitation was observed during the IEA site inspection.

Agency / Community Representative	Consultation	Topics	Comments and/or section where topics are addressed in this IEA
		In addition to the above, the audit should note observations where rehabilitation procedures, practices and outcomes represent best industry practice.	No rehabilitation was required to be undertaken and no rehabilitation was observed during the IEA site inspection.
NPWS	Email received from BCD included feedback from NPWS, 15 February 2021 Telephone 13 March 2021	The 2018 independent audit report identified the need for the Independent Expert Panel to be involved in subsequent independent environmental audits, specifically regarding the subsidence management plan.	Refer Appendix A SSD_5581 Schedule 3 Condition 5
		The 2018 independent audit report referred to management arrangements for access to Mugii Murum-ban State Conservation Area (MMBSCA) trails. NPWS should again be consulted regarding MMBSCA access and trail management.	Refer Appendix A SSD_5581 Schedule 3 Condition 3.
		The Biodiversity Offset Plan should be reviewed specifically with respect to the Carinya offset management adequacy.	The Carinya offset management is not applicable to the Airly Mine.
		Weed management was reviewed in both the 2015 and 2018 audits and was noted to be somewhat effective. Deferral of land management responsibilities to lessees who manage stock on mine-owned lands leased from Centennial is not effective weed management as the lessee and the lessor both defer accountability while weed management actions are not undertaken.	Refer Appendix A SSD_5581 Schedule 4 Condition 15.

Agency / Community Representative	Consultation	Topics	Comments and/or section where topics are addressed in this IEA
BCD	Telephone, 16 February 2021 Email received 15 February 2021	Feedback on the current subsidence incident: - BCS would like to highlight that the subsidence incident is still currently active and ongoing within the MMBSCA and that further surface cracking, fissure dilation, horizontal movement of rock strata and other potential surface impacts to geological features have the potential to occur. This has also been acknowledged by Centennial Coal. - BCS believes that detailed review of the timeline of events from the identification of the breach of subsidence levels until now is important. In the document supplied to BCS (210118 DPIE_IEP Consultation Mt Airly PPMZ EP Mod 1 WE8-9 and 10-12 FNL) it states that "Continuing to operate with subsidence levels above 125mm is not considered to be operating generally in accordance with the EIS and would be a breach of the consent". Elevated subsidence levels were identified by the proponent in early 2020, BCS is unaware of what operations occurred between early 2020 and now. For instance, if operations included the continued cutting of chain pillars at regular width (rather than the modified width proposed for MOD 2 of the extraction plan for Miniwalls 10-12) then operations have served to increase the extent and severity of subsidence to continue over all chain pillars cut prior to the submission of MOD 2. - The impacts of the subsidence incident to the natural values of the MMBSCA have likely exceeded that within the approved EIS for the project. Legislative protections for both biodiversity values and areas of geological significance have changed since submission of the EIS 2014. BCS is concerned that the exceeded impacts from the subsidence incident have potentially caused additional direct impacts to biodiversity values (previously protected under the TSC Act now protected under the BC Act) in addition to indirect and prescribed impacts to features of geological significance (not protected under the TSC Act now protected under the BC Act). No updated impact. In addition to the surface fracturing of rock NPWS identified a significant rockfall event which occurred at the same time as the subsidence incident. NPWS Manager Mudgee Area would have more detail on this.	- Refer Appendix A1 SSD_5581 Schedule 3 Condition 2 and Schedule 6-Condition 9. - Evidence of a cliff fall located > 1 kilometre from Airly mining activities on Mt Airly was identified by Centennial Airly in 2020 using photogrammetry. The cliff fall was reported by Centennial Airly to NPWS. MCW Environmental sighted email approval for provision of 3D mesh (photogrammetry) information on the cliff fall to a

Agency / Community Representative	Consultation	Topics	Comments and/or section where topics are addressed in this IEA
			NPWS consultant dated 7 May 2020. NPWS were advised by Centennial Airly that the cliff fall was not related to Airly activities (due to distance from Airly mining activities). The 2020 Annual Review (Table 24 SSD_5581 Compliance Summary) states “No falls detected within an angle of draw of 26.5° of Airly underground mine workings”. MCW Environmental contacted the NPWS Manager Mudgee area on 13 April 2021 to assess if this issue had been closed out. At the time of finalising this IEA report, no response had been received.
Community Consultation Committee	Refer Letter from CCC Chair dated 2 March 2021 (below)	• Groundwater. • Rail transport of water. • Solar farm. • Development Consent MOD 2. Low number of community complaints.	No outstanding issues.
EPA		No comment was provided for the IEA	
Water Division		No comment was provided for the IEA.	
Lithgow City Council		No comment was provided for the IEA.	

Independent environmental audit Airly coal mine as per development consent SSD_5581

I offer these comments on the above in my capacity as chair of the Airly coal mine Community Consultative Committee

Over the last three years the Airly coal mine CCC has met regularly averaging 3 to 4 meetings per year. Committee members represent a diverse range of community organisations including Capertee Valley Valley alliance, Lithgow city council, regional management from the Department of planning and environment and a community member at large together with management members from Airly mine.

Major issues addressed by our committee include the following.

Ground Water

Local land holders downstream of the mine raised concerns in relation to the impact the mines operation may have on the water supply both above and below surface. Mine representatives met on site with representatives of the landholders and cooperated to install a number of measuring devices.

A Community open forum was held at the mine with CCC members and community representatives to discuss the issue and agree on ongoing monitoring. To date the outcome has been very satisfactory the land holders advising that they are happy with the company's response.

Rail transport of water.

Due to the severe drought of 2019/20 management of Airly Mine found it necessary to bring water in by rail transport to ensure the operation of the mine. There was detailed discussion with the CCC on this issue and the local community were kept informed. The water was sourced from private supplies and did not impinge on any adjacent land owners or water users.

Subsidence

During 2020 monitoring showed that there were subsidence issues above the allowable limit in the mines development consent. The CCC is being kept abreast of this issue and the company is working with the relevant consent authorities to address the issue.

Solar farm

Airly mine has constructed and commissioned a 2 MW solar farm to complement power supply to the mine. the proposal has been well received by the local community.

Development Proposal modification 2.

This issue exercised a great deal of discussion between the CCC and the mine operators. The company has now withdrawn the application.

Community complaints.

The level of community complaints has been very low. A few isolated noise and visual issues have been addressed with the company through the CCC.

As CCC chair I can say that our committee is happy with the response Airly mine management give to environmental issues. They are quick to address issues raised and communicate with the affected parties.

Gerard Martin
Chair
Airly Mine
Community Consultative Committee

Appendix G

Independent Expert Review of the Groundwater Management Plan

INDEPENDENT REVIEW OF AIRLY MINE GROUNDWATER MANAGEMENT PLAN

Prepared for:

Centennial Coal Company Limited
Centennial Coal Pty Ltd
PO Box 1000
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2283

SLR Ref: -R01
Version No: -v0.1
April 2021



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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Centennial Coal Company Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
620.30368.00000-R01-v0.2	20 April 2021	Arash Mohajeri and John Barlow	Noel Merrick	John Barlow
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1 Introduction

Airly Mine commenced operations under SSD-5581 on 31 January 2017. Condition 14 of Schedule 4 of SSD-5581 requires that as part of any environmental audit of the development, the Applicant “must commission an independent expert....., to carry out a review of the Groundwater Management Plan for the development, including the groundwater model.” The independent expert review is to include:

- A review of all available groundwater monitoring data;
- A comparison of predicted and actual groundwater impacts; and
- A review of the effectiveness of the groundwater management plan for the development, including the groundwater model.

2 Data Reviewed

The following documents and data provided by Centennial Coal were reviewed as part of this assessment:

- Airly Mine Water Monitoring. 2020 Annual Report, February 2021 including groundwater level and pressure monitoring data for:
 - VWPs: ARP01, ARP02A, ARP03, ARP04, ARP06, ARP07, ARP08, ARP13, ARP15,
 - Standpipes: ARP05, ARP07, ARP08, ARP09, ARP11, ARP12, ARP13, ARP14, ARP15.
- Airly Mine Water Management Plan, October 2019
- Airly Mine Extension Project – Groundwater Impact Assessment, July 2014
- Airly Mine – Hydrogeological Model Recalibration, letter report, July 2017
- Airly Mine Mod 3 – Volume 2: Part 1: Appendix C -Hydrogeological Model Report, GHD, October 2019.

3 Review of Monitoring Data

3.1 VWPs

Vibrating wire piezometer (VWP) data is presented in the 2020 annual water monitoring report (GHD 2021). The data is presented at unsuitable scales for accurate interpretation of groundwater level responses in relation to mining activities. Vertical ranges vary up to 300 m, while date intervals are non-standard; two charts have unexplained dual sets of ticks, and minor ticks are either missing or are not at uniform monthly intervals. It would also be helpful to plot the data together with a cumulative rainfall excess / deficit curve to assess any pressure changes against seasonal rainfall variations. Whilst some raw data was provided it is not possible to process this without calibration factors and accurate VWP installation details including ground level datums.

Based on the charts presented in the 2020 annual water monitoring report (GHD 2021), a summary of the VWP sensors is provided in **Table 1**. Of the 28 VWPs installed 13 are no longer recording data, all of which are located in four arrays: ARP01; ARP02A; ARP03A; and APR15. In addition, 19 of the 28 sensors appear to have been either unsaturated since installation or are currently unsaturated following an extended period of equilibration to formation pore pressures. The charting of the data makes it difficult to determine this definitively but many of these VWPs appear to show 'flat' levels at or very close to their installation depth suggesting they are unsaturated. Data for ARP07 shows negative ~10m pressure relative to the sensor depths suggesting a calibration issue as well as likely unsaturated conditions.

Table 6-4 of the Water Management Plan (GHD, 2019) presents trigger values for a number of the VWP sensors and these are also presented in **Table 1**. Most of the VWPs are not assigned trigger values, due to their no longer working, or predicted drawdowns being below the base of the seam being monitored. It is noted that a number of the VWP sensors assigned trigger values appear to be unsaturated (based on the available charts) and/or are no longer working (since development of the WMP in 2019), leaving just four working VWP sensors with trigger levels. Two other working sensors are still considered to be stabilising after installation although 2-3 years is considered a very long stabilisation period. The WMP (GHD, 2019) indicates these sensor levels were to be reviewed in late 2020 and assigned trigger values once considered stable.

We would make a number of recommendations regarding the presentation of the VWP data in the annual monitoring reports:

- The data should be plotted at suitable vertical scales to allow more detailed interpretation and evaluation of pressure responses.
- Where VWPs become unsaturated or where the pressures apparently fall below the level of the sensor (suggesting calibration issues), charts should be clearly annotated to indicate unsaturated conditions.
- Trigger levels should be included on the hydrographs.

Table 1 VWP Sensor Status

VWP ID	Formation	Depth (mblg)	Date of installation	Still working?	Saturated / unsaturated	Last data	Trigger level (mAHD)
ARP01	Narrabeen Sandstone	74	June 2012	No	Unsaturated	end 2015	-
	Irondale Seam	238.5		No	Unsaturated	early 2018	-
	Lithgow Seam	260		No	Unsaturated	early 2018	-
	Marrangaroo Formation	263		No	Saturated	early 2018	-
ARP02A	Narrabeen Sandstone	65	May 2012	Yes	Unsaturated		-
	Irondale Seam	243		No	Unsaturated	mid 2020	-
	Lithgow Seam	266		No	Unsaturated	mid 2020	-
	Marrangaroo Formation	270		No	Possibly unsaturated since mid 2020	early 2020	753 ¹
ARP03A	Narrabeen Sandstone	136	July 2012	No	Saturated	early 2020	867
	Middle River Seam	165		Yes	Appears to have been mostly unsaturated since installation		-
	Lithgow Seam	252		No	Unsaturated	end 2018	-
	Marrangaroo Formation	257		No	Unsaturated	end 2018	745 ¹
ARP04	Lithgow Seam	25	April 2012	Yes	Unsaturated from 2016 Inferred mining response		-
	Marrangaroo Formation	28.5		Yes	Unsaturated / flat from 2016 Inferred mining response		734
	Shoalhaven	210.3		Yes	Saturated		699
ARP06	Narrabeen Sandstone	230	June 2013	Yes	Saturated		866
	Irondale Seam	252		Yes	Unsaturated from 2014 - long settling in - low K equilibration		-
	Lithgow Seam	288		Yes	Unsaturated since installation		-
	Marrangaroo Formation	295		Yes	Unsaturated from 2016, long settling in period. Possible mining response late 2015 – early 2016.		-

VWP ID	Formation	Depth (mblg)	Date of installation	Still working?	Saturated / unsaturated	Last data	Trigger level (mAHD)
ARP07	Middle River Seam	168	July 2013	Yes	Unsaturated since installation. Sensor shows negative pressure – possible calibration issue.		-
	Lithgow Seam	252		Yes	Unsaturated since installation. Sensor shows negative pressure – possible calibration issue.		-
ARP08	Narrabeen Sandstone	183	Sept 2013	Yes	Unsaturated since late 2016. Very slow gradual decline since installation		-
	Irondale Seam	282.5		Yes	Slow decline from installation to unsaturated from late 2016 to early 2018. Then a gradual pressure increase, no data for most of 2020 followed by a step increase of 10m		-
ARP13	Shoalhaven Group	120	Dec 2016	Yes	Saturated		- ²
	Devonian	280		Yes	Saturated		573
ARP15	Lithgow Seam	140	Jan 2017	No	Saturated	Jan 2021	-
	Shoalhaven Group	200		No	Unsaturated from mid 2017		-
	Devonian	365		No	Saturated		- ²

1. Predicted drawdown will result in level below sensor, therefore trigger value is level of sensor.

2. VWP pressures are still stabilising. Triggers to be reviewed September 2020.

3.2 Standpipe Water levels

A summary of standpipe status and observed trends is provided in **Table 2**. In some standpipes, specifically ARP05 and ARP11 groundwater levels have declined to below the base of the piezometer. Other bores (ARP09 and ARP12) are intermittently dry. Dry bores, or bores which are frequently dry will prevent future observation of potential impacts. Dry alluvial monitoring bores may need to be replaced with bores located in thicker / deeper areas of the alluvium.

Table 2 Standpipe Status

Standpipe	Formation	Installed Depth (mblg)	Comments
ARP05	Gap Creek Alluvium	10.5	Water level decline >7m since monitoring commenced in 2012 to dry bore. Dry since late 2017 and intermittently dry since late 2015.
ARP09	Genowlan Creek Alluvium	4	Bore has been intermittently dry since installation in 2013. Responds to rainfall with up to 3m water above base of bore.
ARP14	Genowlan Creek Alluvium	2.3	Water levels generally stable with limited responses to heavy rainfall events. Uncharacteristic decline in late 2018 – early 2019 corresponds with extended dry period.
ARP07	Narrabeen Sandstone	110	Reported as dry since installation in 2013.
ARP11	Narrabeen Sandstone	15.3	Consistent declining trend since installation in January 2017. Approx. 4m decline to dry in late 2019
ARP12	Narrabeen Sandstone	2.6	Long dry periods with intermittent responses to rainfall of up to 2m above base of bore.
ARP15SP	Narrabeen Sandstone	16	Decline in minimum levels up to early 2020, followed by a general increase in levels. Delayed response to larger rainfall events.
ARP08	Lithgow	305	No hydrograph presented.
ARP13SP	Lithgow Seam	72	Generally stable levels with little variation. There is a discrepancy between the logger data and the manual readings – logger data should be corrected with the manual readings.

3.3 Implications for Groundwater Model

The groundwater model was last recalibrated in 2019. The recalibration data set included measurements in four standpipe monitoring bores (ARP11, ARP13SP, ARP14 and ARP15SP) and 13 VWP's at seven locations (ARP01, ARP02, ARP03, ARP04, ARP06, ARP13 and ARP15). The recalibration statistics showed RMS of 11 m for the transient calibration. The reported SRMS 4.1% for the transient recalibration which is considered appropriate according to The Australian Groundwater Modelling Guidelines (Barnett et al., 2012).

At the time of the recalibration in 2019, many of the monitoring sites were either naturally dry or had zero pressure head and could not be used quantitatively for recalibration. The graphs presented in the 2020 annual water monitoring report (GHD 2021), indicate that most of the VWP's and standpipes continue to remain dry or show no significant change in the groundwater levels since 2018. Therefore, it is expected that the new measurements would not result in any significant change in the model recalibration and model predictions.

Mining related depressurisation is noted at ARP04, and ARP05. The mining impact is definite at site ARP04 and probable at ARP05. As shown in **Figure 1**, The calibration hydrograph for ARP04 was included in the recent model recalibration report (GHD, 2019). **Figure 1** shows the groundwater model predicts higher groundwater levels at ARP04 than observed, but under predicts the magnitude of the response to mining compared to observations.

The groundwater model recalibration did not include ARP05. Therefore, the comparison between observed and simulated groundwater levels was not possible. The 2020 annual water monitoring report (GHD 2021) noted that groundwater levels at the standpipe ARP08 were significantly higher in 2020. Electrical conductivity also displayed an increasing trend during 2020. The standpipe ARP08 is installed in the Lithgow Seam. Like ARP05, ARP08 was not included in the model recalibration. Therefore, it is unknown how the model is simulating the groundwater levels at ARP08. No reason was given in GHD (2019) report as why some of the VVPs and standpipes were excluded from the recalibration.

It is recommended that the simulated groundwater levels at the VVPs and standpipes excluded from the recalibration should be extracted from the model and be used to compare against the groundwater measurements.

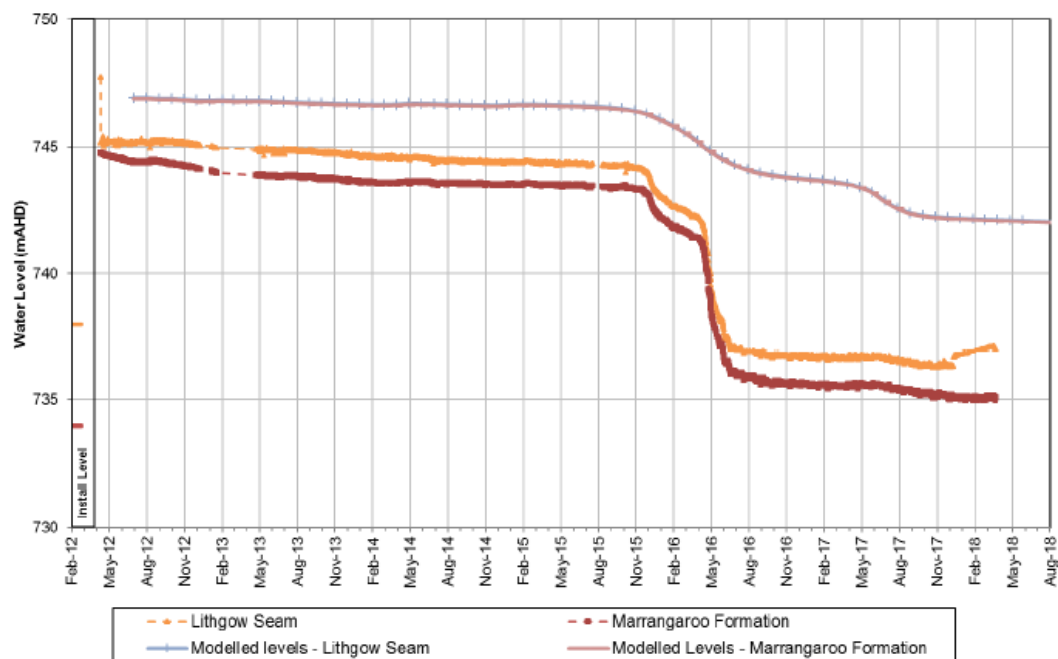


Figure 1 ARP04 Calibration Hydrograph – Modelled vs Observed Groundwater Levels (GHD, 2019)

3.4 Groundwater Quality

The 2020 Annual Water Monitoring Report presents monthly time series groundwater quality data for ARP05, ARP08, ARP09, ARP11, ARP13SP, ARP14, ARP15SP, AM2B-1 (production bore), Village Spring (groundwater seepage), and the private bore 'Nioka'. The time series data presented in the 2020 Annual Water Monitoring Report, Appendix B, have been briefly reviewed. A detailed assessment of groundwater quality data against triggers and guidelines is beyond the scope of this assessment but should be clearly detailed in the annual monitoring report.

Groundwater quality data presentation in the annual monitoring report makes it difficult to discern whether all bores in the monitoring program were sampled through 2020 from the time series data. The monitoring report does not present 80th percentile concentrations (for all samples collected over the preceding 24 months) and compare them to trigger levels defined in the WMP (GHD, 2019). The report would benefit from clear tabulation of groundwater quality monitoring requirements, compliance with requirements and exceedance of trigger values where these occur.

At the Village Spring and the alluvial monitoring bores (ARP05, ARP09 and ARP14), water quality is generally good with salinity of the order of 500 $\mu\text{S}/\text{cm}$ for the Village Spring and below 200 $\mu\text{S}/\text{cm}$ for the alluvial bores. It was noted that the time series data show significantly elevated levels of As, Cr, B and Be for Village Spring, and elevated concentrations are presented for Ba, Be, Cu and Li for ARP14 at times. However, on reviewing the time series groundwater quality data in the WMP (GHD, 2019), these elevated concentrations are not obviously present. Examples of this can be seen by comparing concentrations of dissolved chromium, arsenic and boron presented for Village Spring in the 2020 Annual Water Monitoring Report (up to 270 mg/l, 8 mg/l and 10 mg/l respectively) against the time series data in the 2019 Water Monitoring Plan (all results apparently at detection limits).

It is noted that quarterly sampling commenced at the private bore (Nioka) in 2018 as required by the WMP.

Not all water quality parameters detailed in **Table 4** are presented in the 2020 Annual Water Monitoring Report and there is no statement as to whether these were included in the groundwater analysis through 2020.

4 Comparison of Predicted and Actual Groundwater Impacts

Predicted water levels are not presented in the 2019 Hydrogeological Model Report and predicted water level impacts (i.e. drawdowns) are only presented for end of mining (GHD, 2019). However, the scattergram presented in Figure 3-3 of the GHD report and the recalibration hydrographs presented in the Hydrogeological Model Report (GHD, 2019) show that in general the model tends to predict slightly higher groundwater levels than observed. This indicates that where a formation is unsaturated, it is likely modelled as being saturated which will result in over prediction of drawdown and inflows. Therefore, with respect to potential impacts, the model is likely to be more conservative.

As discussed in **Section 3.3**, In general, significant mining impacts on water levels have not been observed with the exception of ARP04 and ARP05. ARP04 records response to mining in the Lithgow and Marrangaroo Formation. ARP05 is an alluvium bore that was reported dry in 2020 and was not a part of the model recalibration.

As shown in **Figure 1**, the recalibration hydrograph for ARP04 in the Marrangaroo Formation and the Lithgow seam shows the model over predicts the groundwater levels by approximately 7 m at the end of the recalibration period (August 2018). The simulated depressurisation for ARP04 was approximately 5m while actual observed depressurisation is of the order of 9m at the end of the recalibration period. One possible reason for the difference in the simulated and observed depressurisation is that the actual base of the Lithgow seam is lower than the elevation of the model layer representing the Lithgow seam in the model.

The 2020 annual water monitoring report (GHD 2021) reported steady groundwater levels at ARP04. Therefore, it is expected that the model continues to overpredict groundwater levels and underpredict depressurisation at this VWP until the present day.

5 Groundwater Management Plan review.

The groundwater management plan that has been reviewed is the Airly Mine: Water Management Plan, Revision 4 (GHD, October 2019). The previous revision of the WMP (Revision 3, July 2018) is noted as having been revised in the light of comments from the Department of Planning and Environment. The status of the current version (4) of the report with regard to regulatory approval is not indicated although it is understood that it was submitted to the DPIE for approval in October 2019.

Condition 14 of Schedule 4 of SSD-5581 requires that as part of any environmental audit of the development, the Applicant “must commission an independent expert....., to carry out a review of the Groundwater Management Plan for the development, including the groundwater model.”

The groundwater monitoring requirements for Airly mine as set out in the current Water Management Plan (GHD, 2019), are summarised in **Table 3**, **Table 4**, and **Table 5**.

Table 3 Water Level, Pressure, and Seepage Monitoring Requirements

Monitoring Type	Locations	Monitoring Requirement
VWP	ARP01, ARP02, ARP03, ARP04, ARP06, ARP07, ARP08, ARP13, ARP15	Piezometric pressure is recorded automatically for each VWP every 12 hours and saved by the data logger at each bore. Data loggers to be downloaded every 1 - 3 months.
Standpipes	ARP05, ARP07, ARP08, ARP09, ARP11, ARP12, ARP13SP, ARP14, ARP15SP	Groundwater levels are recorded every six hours by the water pressure transducers in the monitoring standpipes (with the exception of the production bore AM2B-1) and saved by data loggers, which are downloaded monthly
Seepage	Village Spring Mine Workings	Seepage volume from the old shale workings is monitored continuously using a pressure transducer setup at the Village Spring.

Table 4 Water Quality Monitoring Requirements

Monitoring Location	Frequency	Parameters
AM2B-1 (production bore) ARP05, ARP07, ARP08, ARP09, ARP11, ARP12, ARP13SP, ARP14, ARP15SP, Village Spring	Monthly	Physicochemical parameters: EC, pH, TDS. Major ions: alkalinity, calcium, chloride, magnesium, potassium, sodium, sulfate. Metals (dissolved and total): arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, zinc.
	Annually	Physicochemical parameters: BOD, DO, TSS*, turbidity. Nutrients: ammonia, nitrate, nitrite, nitrate + nitrite, total Kjeldahl nitrogen, total nitrogen, total phosphorus. Metals (dissolved): aluminium, barium, beryllium, boron, caesium, cobalt, gallium, gold, lithium, rubidium, strontium, thorium, yttrium Metals (total): aluminium, barium, boron, cobalt Other parameters: bromine, chlorine (free and total residual), fluoride, oil and grease, silica, silicon.
Nioka	Quarterly	Physicochemical parameters: BOD, DO, EC, pH, TDS, TSS, turbidity. Nutrients: ammonia, nitrate, nitrite, nitrate + nitrite, total Kjeldahl nitrogen, total nitrogen, total organic carbon, total phosphorus. Major ions: alkalinity, calcium, chloride, magnesium, potassium, sodium, sulfate. Metals (dissolved): aluminium, arsenic, barium, beryllium, boron, cadmium, caesium, chromium, cobalt, copper, gallium, gold, iron, lead, lithium, manganese, mercury, nickel, rubidium, strontium, thorium, yttrium, zinc. Metals (total): aluminium, arsenic, barium, boron, cadmium, cobalt, iron, lead, manganese, mercury, nickel, selenium, silver, zinc. Other parameters: bromine, fluoride, oil and grease, silica, silicon.

* TSS monitored monthly at Village Spring

Table 5 Other Groundwater Monitoring Requirements

Monitoring	Locations	Monitoring details
Underground water transfers	Underground workings	Daily monitoring of the transfer of water to and from the underground workings is undertaken using inline flow meters
Stygofauna Monitoring	AM2B-1 (production bore) ARP05, ARP09, ARP14, ARP15	The Western Region Stygofauna Monitoring and Assessment Plan details the stygofauna monitoring requirements for Airly Mine. The stygofauna monitoring methodology includes: • Measurement of groundwater quality parameters including alkalinity, DO, EC, pH, temperature and turbidity. • Sampling of bores and identification of stygofauna in accordance with guidelines by WA EPA (2007; 2013).

5.1 Effectiveness of the Groundwater Management Plan

In general, the mining at Airly is considered to be of low risk to local groundwater values, in part due to the geologically isolated nature of the resource. However, key areas where there is potential for groundwater impacts arising from mining at Airly are considered to relate primarily to:

- Potential impacts to shallow aquifers overlying the mining operation on which groundwater dependent ecosystems or other groundwater users may be reliant, in particular the shallow alluvial aquifers associated with Gap Creek and Genowlan Creek.
- Potential reductions to baseflow contributions for the surface water drainages overlying the mining operations.

5.1.1 Groundwater Monitoring

The current coverage of aquifers across the mining area is considered to provide suitable spatial coverage and is commensurate with predicted impacts and risk. With respect to monitoring of the main alluvial aquifers associated with Gap Creek and Genowlan Creek, with the drying of bores ARP05 and ARP09 consideration should be given to identifying replacement bores in deeper/thicker sections of the alluvium in order to continue to monitor impacts in the alluvium.

As mining progresses, additional monitoring locations should be considered in the northeast towards Genowlan Point prior to mining progression into the area.

Potential baseflow reductions are difficult to quantify and rely on stream flow monitoring to try and differentiate between climatically induced changes and mining related impacts, particularly in ephemeral creeks. The current continuous flow monitoring at Gap Creek and Genowlan Creek is considered to be adequate.

Attenuation of seepage is difficult to quantify and not practical to monitor, particularly along steep escarpments. Reduction of seepage contributions to Gap Creek and Genowlan Creek is unlikely to be able to be observed in the flow monitoring data, however, the application of any additional methods to attempt to monitor potential seepage attenuation is not considered to be practical.

Mining is not considered to pose a significant risk to water quality and the current monitoring network is considered to provide suitable coverage. However, deeper replacement bores for the dry bores ARP05 and ARP09 would allow continued monitoring of alluvial groundwater quality.

5.1.1.1 Water Quality Parameters

The list of groundwater quality parameters (reproduced in Table 4) has been significantly reduced in the latest version of the WMP. This is endorsed and a likely action from the recommendation made in the previous review of the groundwater management plan (Jacobs, 2018) to reduce the list of parameters by removing many elements which:

- Are not typical indicators of general water quality;
- Would not be expected to be present in significant concentrations as a result of mining activity.
- Would likely only be present at trace concentrations with low level detection, if present at all.
- Do not have guideline values associated with drinking water or ecotoxicity.

Whilst the significant reduction in irrelevant parameters is endorsed, the suite still includes a number of metals and rare earth elements that do not have water quality or ecotoxicity guidelines and which have little practical benefit to the monitoring program. There is therefore opportunity to further reduce groundwater quality analysis.

5.1.2 Underground Water Transfers

The WMP action for monitoring the transfer of underground water is reasonable, however, inflows to the mine are currently negligible. The 2020 Annual Water Monitoring Report indicates that inflows to the underground workings are insignificant and no mine dewatering occurred in 2020.

5.1.3 Stygofauna Monitoring

The WMP stygofauna monitoring program is reasonable, however, inflows to the mine are currently negligible. The aquifers with the greatest potential for providing stygofauna habitat at Airly are the alluvial aquifers associated with Gap Creek and Genowlan Creek.

5.1.4 Seepage Monitoring

The 2020 Airly Mine Water Monitoring Report indicates that the flow rate at Village Spring is monitored continuously using a tipping bucket flow gauge and data logger. No data was recorded between 1 January and 30 June 2020 due to a malfunctioning logger.

5.1.5 Effectiveness of the Groundwater Model

The existing groundwater model for Airly was last updated and recalibrated in 2019. The recalibration was aimed at reducing inflow predictions in line with the negligible inflow into the existing underground mine workings and reproducing the mining related depressurisation observed at ARP04 in the Lithgow Seam and Marrangaroo Formation. The 2019 updated version of the groundwater model was peer reviewed by Dr Noel Merrick in 2019 and found to be fit for the purpose of predicting potential groundwater impacts resulting from mining operations at Airly. The comments in the groundwater model review report were reviewed as a part of this audit.

Based on the review of the 2019 Hydrogeological Model Report (GHD, 2019) and discussions in **Section 3.3** and **Section 4** of this report, the groundwater model is still considered fit for purpose where the purpose is jointly estimation of water take and reduction in groundwater pressure heads. However a number of opportunities for improvement are suggested in the next model review:

- Review/comment on the lack of dynamic response in model predictions.
- Additional discussion on the reason for excluding some of the VWPs and standpipes from the 2019 recalibration.
- The simulated groundwater levels at the VWPs and standpipes excluded from the recalibration should be extracted from the model and be used to compare against the observed responses.
- Present contour maps of simulated water levels at the end of calibration and end of mining.
- Present contour map of predicted water level impacts (drawdown) for end of calibration.

6 Opportunities for Improvement

The groundwater monitoring requirements of the current WMP (GHD, 2019) are generally considered to be appropriate based on project risks to groundwater values. However, a number of opportunities for improvement are suggested:

- The WMP groundwater level triggers should be reviewed and updated for unsaturated / non operational VWP sensors.
- As mining progresses, additional monitoring locations should be considered in the northeast towards Genowlan Point prior to mining progression into the area.
- Review monitoring locations for Gap Creek and Genowlan Creek alluvial standpipes and consider the replacement of dry bores ARP05 and ARP09 with standpipes in deeper sections of the alluvium to allow continued monitoring of alluvial groundwater levels and quality.
- Whilst the groundwater quality analytical suite has been significantly improved by the removal of a large number of parameters that had no practical use within the monitoring program, a number of parameters remain for which there are no water quality guideline values, and which are unlikely to result from mining activity. Some further rationalisation of the suite could be undertaken without significant impact on the groundwater quality monitoring objectives.
- Consider including a requirement to review predicted drawdowns against groundwater level observations in the annual monitoring report.
- Consider stipulations relating to the presentation of data in the annual monitoring report as suggested below.

Following review of the 2020 Annual Water Monitoring Report (GHD, 2021), a number of improvements to the presentation of annual water monitoring data are recommended, some of which could be specified in the WMP to aid data interpretation, the identification of trends and demonstrate compliance with the WMP:

- VWP hydrographs:
 - Should be plotted on appropriate vertical and horizontal scales to allow more detailed interpretation and evaluation of pressure responses.
 - Should be annotated where VWPs have become unsaturated.

- Should include trigger levels (TLs should also be included on standpipe hydrographs).
 - Should include plots of rainfall excess / deficit (also should be included on standpipe hydrographs).
- WQ time series data should be thoroughly checked for anomalies / errors, and allow easy differentiation of the time series for each individual bore when data for all bores is plotted on the same chart.
- The flow monitoring data for Gap Creek and Genowlan Creek should be plotted with a logarithmic vertical scale to provide detail for periods of low flow / baseflow conditions.
- The monitoring report would benefit from clear concise tabulation of monitoring requirements, compliance with requirements, and trigger level breaches. Such a table would allow easy identification of whether each monitoring location had been monitored in accordance with the WMP for the specified parameters (quality, levels, flow etc) at the specified frequency, with explanations provided for where this was not possible e.g. bore dry, VWP no longer functioning etc.
- Explanation should be provided for any monitoring parameters or locations specified in the WMP which are not presented in the annual monitoring report and the lack of dynamic response in model predictions.

7 References

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