DONALDSONCOAL

Part of the Yancoal Australia Group

ABN: 87 073 088 945

YANCOAL

兖煤澳大利亚有限公司

Annual Review

Abel Underground Coal Mine

1 January 2019 – 31 December 2019

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DONALDSON COAL

PTY LTD

ABN: 87 073 088 945

Annual Review

for the

Abel Underground Coal Mine

1 January 2019 – 31 December 2019

Compiled for:

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Ref No. 737/23b

March 2020

DONALDSONCOAL
Part of the Yancoal Australia Group

TITLE BLOCK

Name of Operation	Abel Underground Coal Mine
Name of Operator	Donaldson Coal Pty Ltd
Development consent / project approval #	05_0136
Name of holder of development consent / project approval	Donaldson Coal Pty Ltd
Mining Lease #	ML1618 and ML 1653
Name of holder of mining lease	Donaldson Coal Pty Ltd
Water licence #	20WA218986 and WAL41525
Name of holder of water licence	Donaldson Coal Pty Ltd
MOP/RMP start date	02/05/2016
MOP/RMP end date	01/05/2021
Annual Review start date	01/01/2019
Annual Review end date	31/12/2019

I, Phillip Brown, certify that to the best of my knowledge this report is a true and accurate record of the compliance status of the Abel Underground Coal Mine for the period 1 January 2019 to 31 December 2019 and that I am authorised to make this statement of behalf of Donaldson Coal Pty Ltd.

Note.

a) *The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.*

b) *The Crimes Act 1900 contains other offences relating to false and misleading information: Section 192G (Intention to defraud by false or misleading statement – maximum penalty 5 years imprisonment); Section 307A, 307B and 307C (false or misleading application/information/documents – maximum penalty 2 years imprisonment or $22,000, or both).*

Name of authorised reporting officer	Phillip Brown
Title of authorised reporting officer	Environment and Community Relations Superintendent
Signature of authorised reporting officer	
Date	31 March 2020

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APPENDICES

FIGURES

TABLES

1. STATEMENT OF COMPLIANCE

The compliance status of relevant approvals was reviewed for the reporting period and is summarised in **Table 1.1**. It was determined that there was one administrative non-compliance during the reporting period. The non-compliance recorded during the reporting period has been ranked according to the risk matrix included in **Table 1.2**.

Table 1.1
Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	Yes / No
Project Approval 05_0136	No
Mining Lease 1618	Yes
Mining Lease 1653	Yes
Water Supply Works Approval 20WA218986 and Water Access Licence 41525	Not Determined[1]
1. Updated licence with conditions not yet received.	

Table 1.2
Non-compliances

Relevant Approval	Cond #	Condition Description (summary)	Compliance Status	Comment	Where Addressed in Annual Review
PA 05_0136	2/11a	Ensure that all new buildings and structures, and any alterations or additions are constructed in accordance with the relevant requirements of the BCA.	Non-compliant	Construction Certificates have been received for buildings within the surface infrastructure area but not Occupation Certificates. Certifying body inspected once and requested changes. Changes have been made and the Certifying body requested to reinspect. Certificates yet to be issued.	Section 11

Compliance Status Key

Risk level	*Colour code*	*Description*
High	*Non-compliant*	*Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence.*
Medium	*Non-compliant*	*Non-compliance with:* • *potential for serious environmental consequences, but is unlikely to occur; or* • *potential for moderate environmental consequences, but is likely to occur.*
Low	*Non-compliant*	*Non-compliance with:* • *potential for moderate environmental consequences, but is unlikely to occur; or* • *potential for low environmental consequences, but is likely to occur.*
Administrative non-compliance	*Non-compliant*	*Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions).*

2. INTRODUCTION

2.1 OVERVIEW OF OPERATIONS

The Abel Underground Coal Mine (the "mine") is located approximately 23km northwest of Newcastle, New South Wales (see **Figure 2.1**). Following the grant of Project Approval 05_0136 in June 2007, the Company undertook construction and mining activities until the mine was placed in care and maintenance from 2 May 2016. Activities undertaken to date include the following.

i) Construction of surface infrastructure and facilities, including the administration offices, amenities, service and storage facilities and car parking area, within the surface infrastructure area.

ii) Initial mine construction involving the formation of three mining portals and underground roadways and construction of the ventilation, conveying and coal stockpiling systems.

iii) Coal recovery using bord and pillar methods including first and second workings.

iv) Processing of recovered coal at the Bloomfield Colliery CHPP and transportation via the Bloomfield Rail Loop and Spur and subsequently via the Main Northern Railway.

Several of the earlier activities relating to the mine, involving the formation of the box cut within which the surface facilities and ROM stockpiles are located, were undertaken as part of the approved Donaldson Open Cut Coal Mine.

2.2 SCOPE AND FORMAT

This Annual Review for the Abel Underground Coal Mine has been compiled by R.W. Corkery & Co. Pty. Limited on behalf of Donaldson Coal Pty Ltd (the "Company"). Donaldson Coal Pty Ltd became part of Yancoal Australia Limited in July 2012.

This is the fourth Annual Review submitted for the mine, following eight Annual Environmental Management Reports, and is applicable for the period 1 January to 31 December 2019 ("the reporting period"). The information presented within this Annual Review has been compiled based on information and advice provided by the Company.

This Annual Review generally follows the format and content requirements identified in the Department of Planning and Environment's (DPE) *Annual Review Guideline* dated October 2015 and meets the requirements of Condition 4, Schedule 6 of PA 05_0136.

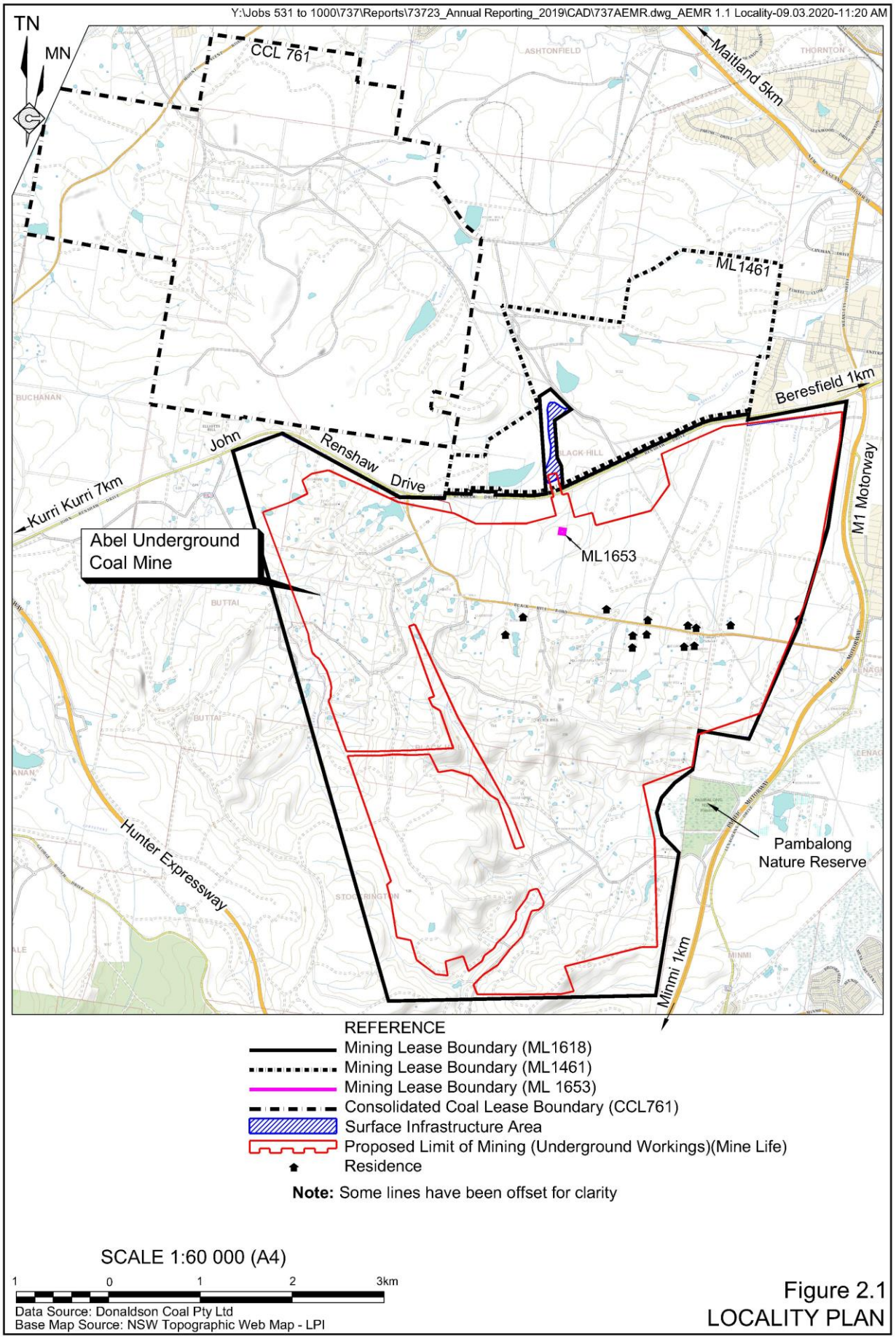


Figure 2.1
LOCALITY PLAN

2.3 KEY PERSONNEL CONTACT DETAILS

The Manager, Mining Engineering, Mr William Farnworth is the primary mine contact (Tel: 02 4015 1100). Mr Farnworth is currently the Manager Mining Engineering for legislative purposes and as such, is responsible for the environmental management of the mine and ensuring compliance with all relevant legislative obligations. Mr Phillip Brown (Tel: 0439 909 952) is the nominated Environment & Community Relations Superintendent and is also responsible for the environmental management of the mine. The contact details for the mine office are as follows.

Postal Address:	Donaldson Coal Pty Ltd	Tel: 02 4015 1100
	PO Box 2216 GREENHILLS NSW 2323	Fax: 02 4015 1159
Email:	donaldson@doncoal.com.au	
Physical Address:	Abel Underground Coal Mine	
	1132 John Renshaw Drive BLACKHILL NSW 2322	

A 24-hour Environmental Hotline (Tel: 1800 111 271) is maintained by the Company. Details of calls taken on this number are forwarded to the Environment & Community Relations Superintendent for further actioning, if required.

3. APPROVALS

The Company has operated the approved activities at the mine under the approvals listed in **Table 3.1**.

Table 3.1
Abel Underground Coal Mine – Consents, Leases and Licences

Consent/Lease/Licence	Issue Date	Expiry Date	Details / Comments
Project Approval 05_0136	7 June 2007	31 December 2030	Granted by the (then) Minister for Planning and last modified on 04 December 2013.
Mining Lease ML 1618*	15 May 2008	15 May 2029	Granted by the Minister for Primary Industries. Incorporates 2755ha of surface area.
Mining Lease ML 1653*	21 January 2011	21 January 2032	Granted by the Minister for Primary Industries. Incorporates 0.25ha of surface area. Issued construction of ventilation shaft.
Environment Protection Licence No. 12856	9 July 2008 (licence version date 21 December 2011)	Not applicable	Issued by the (then) Department of Environment and Climate Change (EPA).
Water Supply Works Approval 20WA218986	01/07/2016	30/06/2029	Bore Licence 20BL171935 was issued for the interception and inflow of groundwater due to the underground mining operations. Following commencement of the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources 2016* in July 2016 20BL171935 was converted to a water supply works approval and water access licence with an allocation of 500ML/year.
Water Access Licence (WAL) 41525	01/07/2016	Continuing	
* See **Figure 2.1**			

It is noted that this Annual Review has been prepared to fulfil the annual reporting requirements of Project Approval 05_0136, ML 1618, ML 1653, and WAL 41525. A separate Annual Return has continued to be submitted to the NSW EPA in accordance with the requirements of Environment Protection Licence (EPL) 12856. It is noted that an application to consolidate and rationalise EPL 12856, for the Abel Mine, and EPL 11080, for the Donaldson Open Cut Coal Mine, is currently being processed by the EPA and is expected to be finalised during the next reporting period.

The Company also holds Exploration Licence 5497 (see **Figure 2.1**) which was granted on 22 July 1998, with a current expiry date of 21 July 2019. An application for renewal of EL 5497 has been submitted and is awaiting determination.

4. OPERATIONS SUMMARY

4.1 MINING OPERATIONS

Coal mining activities ceased on 2 May 2016 when the site was placed into care and maintenance. No coal mining is planned during the next reporting period. **Table 4.1** presents a summary of the production statistics.

Table 4.1
Production Summary

Material	Approved limit (specify source)	Previous reporting period (actual)	This reporting period (actual)	Next reporting period (forecast)
Waste Rock / Overburden (m^3)	None specified	0	0	0
ROM Coal / Ore (t)	6 100 000 (PA 05_0136 Cond 2/6)	0	0	0
Coarse Reject (t)	None specified	0	0	0
Fine Reject (Tailings) (t)	None specified	0	0	0
Saleable Product (t)	None specified	0	0	0

4.2 OTHER OPERATIONS DURING THE REPORTING PERIOD

No exploration, land preparation, construction or processing activities were undertaken during the reporting period.

Environmental monitoring activities continued throughout the reporting period including surface water, groundwater, flora and fauna and subsidence monitoring. Results of this monitoring is summarised in Sections 6 and 7.

The following management plans were updated during the reporting period to reflect more appropriate environmental monitoring programs during the care and maintenance period and to reflect comments raised as part of the 2018 Independent Environmental Audit. These management plans were approved by DPIE on 4 June 2019.

- Water Management Plan – Care and Maintenance (Version 4 – 3 June 2019).
- Rehabilitation Management Plan – Care and Maintenance (Version 2 – 3 June 2019).
- Noise Management Plan – Care and Maintenance (Version 5 – 3 June 2019).
- Air Quality and Greenhouse gas Management plan – Care and Maintenance (Version 3 – 3 June 2019).
- Abel Underground Mine: Aboriginal Heritage Management Plan (Revision 2.1 – June 2019).
- Rehabilitation Management Plan – Care and Maintenance (Version 2 – 3 June 2019).

The Pollution Incident Response Management Plan (Version 4 – 5 July 2019) was also updated during the reporting period to reflect the most appropriate content and contact details.

4.3 NEXT REPORTING PERIOD

The activities proposed for 2020 will principally involve continued monitoring and, if required, maintenance activities. The following provides a summary of the planned activities.

Exploration

The Company is considering further exploration but currently does not intend to undertake any drilling within ML 1618 or ML 1653 during the 2020 reporting period. In the event that drilling is undertaken, the appropriate approvals will be sought and the drilling reported as part of the next Annual Review and within the annual exploration report.

Mining

No mining is currently planned to be undertaken during the 2020 reporting period.

Rehabilitation

No specific rehabilitation activities are currently planned for the 2020 reporting period, however, work will continue to be undertaken to develop a closure strategy. Any rehabilitation works undertaken will relate to rehabilitation of any subsidence impacts or to ongoing maintenance, principally erosion and sediment control.

Monitoring

The following monitoring will be undertaken during the next reporting period.

- Air Quality – ongoing deposited dust (until approval of variation of EPL 12856), and PM_{10} monitoring will continue to be undertaken.
- Surface water – ongoing surface water quality at a range of routine monitoring sites located within Blue Gum Creek, Viney Creek, Buttai Creek, Four Mile Creek and a number of local water storages. This monitoring will be undertaken as part of the integrated monitoring with the Bloomfield, Donaldson and Tasman Extended Mines.
- Groundwater – ongoing groundwater quality and level monitoring will be undertaken as part of the integrated network of monitoring bores for the Bloomfield, Donaldson and Tasman Mines. Measurement of the quality and volume of inflow water to the underground workings will also continue to be undertaken.
- Noise – noise monitoring will continue but at a six monthly frequency whilst the mine remains on care and maintenance.
- Flora & Fauna – flora and fauna surveys and reporting will continue to be undertaken in accordance with approved Flora and Fauna Management Plan. It is noted that, whilst the mine is on care and maintenance, the Pambalong Nature Reserve, dam monitoring and sub-tropical rainforest monitoring will be deferred pending the recommencement of mining.

- Meteorological – the on-site meteorological station at the Abel Mine will be maintained and data collated.
- Subsidence monitoring will continue to be undertaken in accordance with the approved subsidence monitoring programs.

Community Consultation and Liaison

The community consultative committee will continue to be convened during the next reporting period. It is expected that meetings will be held six-monthly unless otherwise agreed with the committee. The 24hr environmental hotline will be maintained and a register retained of any complaints received.

Mining Operations Plan

A new or amended Mining Operations Plan (MOP) will be prepared and submitted prior to 31 August 2020 to reflect the outcomes of the closure strategy (see Section 5).

5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The 2018 Annual Review was forwarded to the Resources Regulator within the (then) Department of Planning and Environment (DPE) and the DPE compliance unit on 29 March 2019. Feedback was received from the DPE compliance unit dated 30 April 2019. The Annual Review was considered to generally satisfy the conditions of the approval.

Feedback was also received from the Resources Regulator dated 16 July 2019 confirming the Annual Review was considered to satisfy the requirements of the relevant conditions of the mining leases. However, the feedback noted that, during the review of the Annual Review and following a site inspection on 7 June 2019, closure planning was considered an "emerging risk". A separate Section 240(1)(c) Notice dated 11 July 2019 was issued with two directions required to be implemented by 31 August 2020. A summary of these directions (and subcomponents) is provided in **Table 5.1**

Table 5.1
Actions from the previous Annual Review / Section 240(1)(c) Notice

Action required from previous Annual Review / Notice	Requested by	Action taken by the Operator	Where discussed in Annual Review
1. Develop a Closure Strategy ("Strategy") for the management of the West and Square Pits. The Strategy is to: i. Be developed to reflect the following separate closure pathways: a. the resumption of mining within the Abel Underground Mine and development of the voids; b. the closure of the Abel Underground Mine with no resumption of mining. ii. Include Rehabilitation Objectives and Completion Criteria for both closure pathways identified in Point (i) above. iii. Include a risk assessment that identifies and assesses risks to rehabilitation that are associated with each closure pathway identified in Point (i) above. Following the risk assessment, develop control actions that are incorporated in a Trigger Action Response Plan for each closure pathway. iv. Incorporate a timeline for completion of rehabilitation works required for each closure pathway identified in Point (i) above. v. Reflect Project Approval requirements, including completion of a gap analysis that assesses whether Project Approval modifications are required for intended post mining landforms.	Resources Regulator	Preliminary planning and consideration of this matter has been undertaken. The Closure Strategy will be finalised during the next reporting period.	Section 8.3.1
2. Submit an updated Mining Operations Plan (MOP) for ML 1618 and ML 1653 - Abel Underground Mine that includes Closure Strategy that is outlined in Direction 1. The MOP is to be submitted electronically to minres.environment@planning.nsw.gov.au to the satisfaction of the Regulator, referencing "Response to NTCE0003227" in the subject heading.	Resources Regulator	Either a new or amended MOP will be submitted prior to 31 August 2020 to reflect the outcomes of the Closure Strategy.	Section 4.3 & 5

6. ENVIRONMENTAL PERFORMANCE

6.1 SUMMARY OF ENVIRONMENTAL PERFORMANCE

A summary of environmental performance for the principal environmental aspects is provided in **Table 6.1**. Further detail regarding specific environmental aspects is also provided in the following subsections. It is noted that a range of monitoring activities are integrated with the Donaldson Open Cut Coal Mine and Bloomfield Colliery, as outlined within the Integrated Environmental Monitoring Program. The following subsections present results specific to the Abel Mine with data relevant to other operations presented in their respective Annual Reviews.

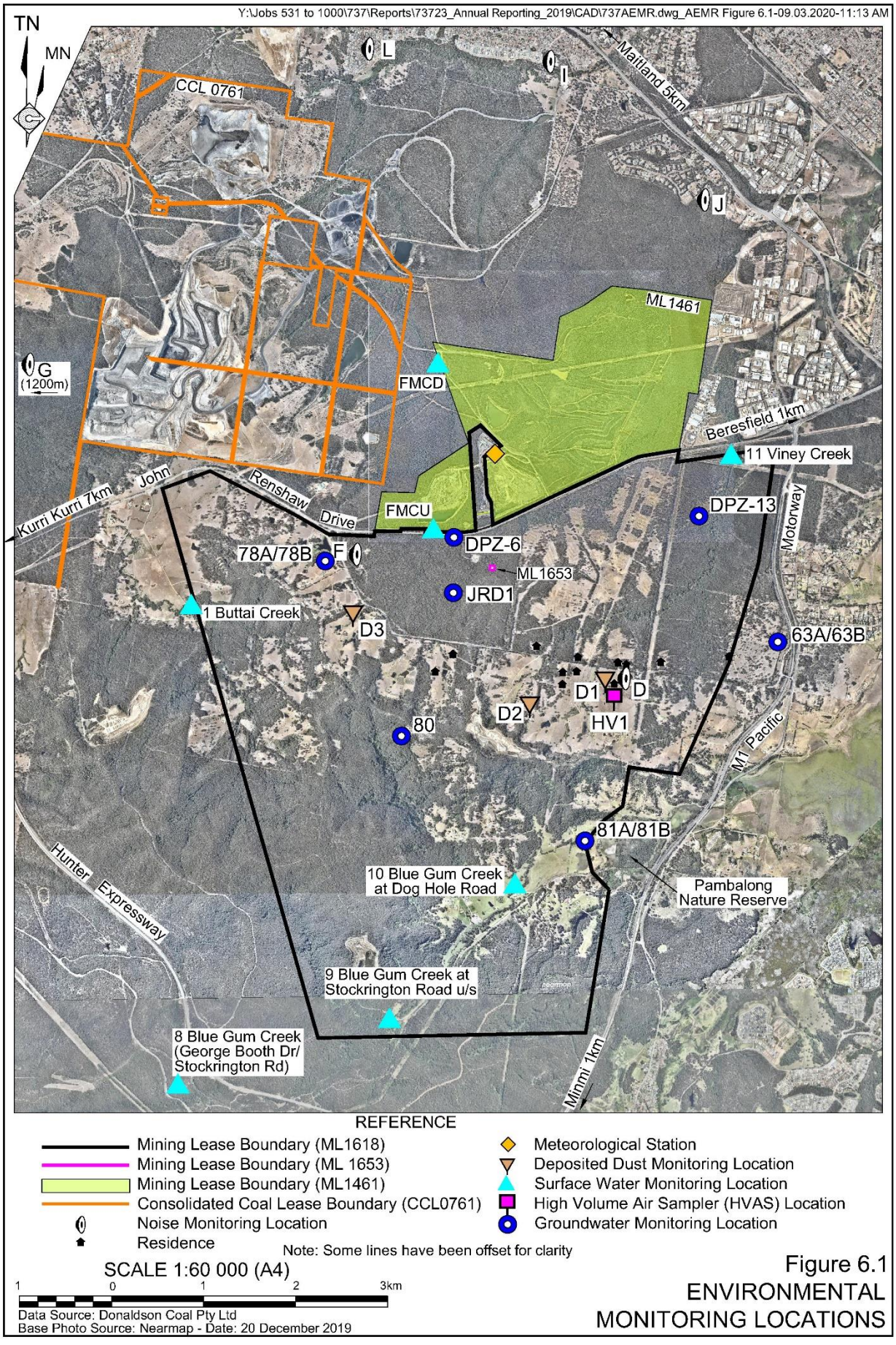
Table 6.1
Environmental performance

Aspect	Approval criteria / EIS prediction	Performance during the reporting period	Trend/key management implications	Implemented/proposed management actions
Noise	No exceedance of applicable noise criteria.	No exceedances and no complaints.	Implies management measures are currently adequate.	No additional management action required.
Blasting	No exceedance of applicable blast criteria.	No blasts undertaken. No complaints.	Implies management measures are currently adequate.	No additional management action required.
Air Quality	No exceedances of applicable air quality criteria.	No exceedances and no complaints.	Implies management measures are currently adequate.	No additional management action required.
Biodiversity	No significant impacts upon flora, fauna species, populations, communities or habitat.	No impacts upon flora, fauna species, populations, communities or habitat were recorded. No effect upon Pambalong Nature Reserve or Sub-tropical rainforest.	Implies current mining design and safeguards are currently adequate.	No additional management action required.
Heritage	Management in accordance with approved Aboriginal Heritage Management Plan.	No heritage items undermined during the reporting period. No subsidence impacts.	Implies no specific management actions were necessary.	No additional management action required.
Subsidence	Subsidence management in accordance with approved Subsidence management Plan / Extraction Plan.	No notifiable events occurred.	Implies management measures are currently adequate and predictions sufficiently accurate.	No additional management action required.

6.2 METEOROLOGICAL MONITORING

An automated weather station, installed for the Donaldson Mine, has been approved by the (then) Department of Planning as also meeting the requirements for the Abel Mine. The weather station records wind speed and direction, temperature, rainfall and solar radiation. This station was subsequently relocated in March 2015 to adjacent the Helipad near the Abel surface facilities (see **Figure 6.1**). A summary of the rainfall data since commencement of the Abel Mine in 2007 is presented in **Table 6.2**.

Total rainfall during the 2019 calendar year was 564.0mm, representing an annual rainfall equivalent to less than 60% of the average annual rainfall of 964.7mm.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MN
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L
I
Maitland 5km
J
ML1461
G
(1200m)
FMCD
Beresfield 1km
11 Viney Creek
John
Renshaw
Drive
Kurri Kurri 7km
FMCU
DPZ-13
Motorway
78A/78B
F
DPZ-6
ML1653
JRD1
1 Buttai Creek
D3
63A/63B
D1
D
D2
HV1
80
M1 Pacific
81A/81B
Hunter
Expressway
10 Blue Gum Creek
at Dog Hole Road
Pambalong
Nature Reserve
9 Blue Gum Creek at
Stockrington Road u/s
8 Blue Gum Creek
(George Booth Dr/
Stockrington Rd)
Minmi 1km
REFERENCE
Mining Lease Boundary (ML1618)
Mining Lease Boundary (ML 1653)
Mining Lease Boundary (ML1461)
Consolidated Coal Lease Boundary (CCL0761)
Noise Monitoring Location
Residence
Meteorological Station
Deposited Dust Monitoring Location
Surface Water Monitoring Location
High Volume Air Sampler (HVAS) Location
Groundwater Monitoring Location
Note: Some lines have been offset for clarity
SCALE 1:60 000 (A4)
1 0 1 2 3km
Data Source: Donaldson Coal Pty Ltd
Base Photo Source: Nearmap - Date: 20 December 2019
Figure 6.1
ENVIRONMENTAL
MONITORING LOCATIONS

Table 6.2
Monthly Rainfall Records

Period	Average Monthly Rainfall (mm)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
2007	13.4	87.6	102.4	85.6	60.0	253.0	16.5	79.6	28.3	35.0	163.8	49.5	974.7
2008	153.4	191.8	46.0	237.6	2.2	122.9	30.0	28.5	195.3	62.2	73.3	62.6	1205.8
2009	11.3	340.7	136.5	189	143.8	75.7	32.1	1.8	29.2	59.8	51.4	62.0	1133.3
2010	89.0	52.1	83.9	37.1	89.4	112.8	65.3	38.5	26.0	80.6	171.1	55.9	901.7
2011	25.6	34.5	65.6	138	98.8	152.2	128.7	48.9	103.2	100.0	171.9	75.9	1143.2
2012	96.1	207.0	137.6	114.7	11.8	172.3	53.8	26.6	18.7	5.7	47.9	47.9	944.1
2013	166.7	226.6	97.9	89.4	60.9	96.5	11.2	9.7	21.2	49.5	261.8	2.6	1094.0
2014	15.6	108.3	112.8	99.3	44.3	31.4	24.6	104.0	42.4	55.0	38.4	133.4	809.5
2015	167.0	48.0	73.3	412.0	89.4	44.6	17.9	30.6	56.8	59.0	69.8	103.8	1172.2
2016	430.8	26.0	78.0	31.8	13.4	113.0	44.2	74.2	60.0	43.8	33.2	58.6	1007.0
2017	66.9	71.7	150.4	94.5	12.7	128.5	3.2	6.0	12.6	77.7	66.8	41.6	732.6
2018	6.6	120.0	191.4	52.8	7.0	107.4	4.2	21.4	55.4	109.0	92.6	91.8	859.6
2019	**17.2**	**32.8**	**158.0**	**27.0**	**19.4**	**97.4**	**26.0**	**66.6**	**69.4**	**22.0**	**28.2**	**0.0**	**564.0**
Average	*96.9*	*119.0*	*110.3*	*123.8*	*50.2*	*116.0*	*35.2*	*41.3*	*55.3*	*58.4*	*97.7*	*60.4*	*964.7*

Note: Results relevant to this reporting period are in bold.

6.3 NOISE

Environmental Management

The principal noise control prior to the site entering care and maintenance was the continued use of low modulated frequency reversing alarms on mobile equipment used on the surface. Whilst mobile equipment usage during care and maintenance has been minimal this remains the principal management measure.

Environmental Performance

Quarterly noise monitoring applicable to the Abel Mine commenced in December 2008 as an extension of the monitoring survey previously undertaken for the Donaldson Open Cut Coal Mine. Quarterly attended and unattended noise monitoring continued to be undertaken throughout the reporting period at six monitoring locations relevant to the Abel Mine (see **Figure 6.1**) for quarters ending March (Q1), June (Q2), September (Q3) and December (Q4) 2019. Monitoring results are presented in **Table 6.3** and copies of the monitoring reports are presented within **Appendix 1**.

The findings of the monitoring surveys were that operations were inaudible at all monitoring locations during Q1, Q2 and Q3. Operations at the Bloomfield CHPP were audible at monitoring locations I and L during night periods during Q4 but remained well below the applicable criteria. Notably, all monitoring events were undertaken whilst the Abel Mine was under care and maintenance and therefore not audibly contributing to received noise. Further discussion regarding the Bloomfield CHPP is provided in their respective annual reporting.

Whilst PA 05_0136 provides for cumulative noise criteria, given that the Abel operations were inaudible at all times, the Donaldson Coal Mine is also on care and maintenance, and noise from the Bloomfield CHPP was either inaudible or well below the relevant criteria, no cumulative effects are considered to have occurred.

Table 6.3
Summary of Attended Noise Monitoring Results – 2019

Location	Time	Noise Criteria	Attended Monitoring[1]				Noise generated by Abel Mine
			Q1	Q2	Q3	Q4	
D Black Hill School, Black Hill	Day ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Evening ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A1(1min)}$)	45	NA	NA	NA	NA	Operations inaudible at all times
F Black Hill Rd, Black Hill	Day ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Evening ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A1(1min)}$)	45	NA	NA	NA	NA	Operations inaudible at all times
G Buchanan Rd, Buchanan	Day ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Evening ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A1(1min)}$)	45	NA	NA	NA	NA	Operations inaudible at all times
I Lord Howe Drive, Ashtonfield	Day ($L_{A\ eq\ (15\ min)}$)	36	NA	NA	NA	NA	Operations inaudible at all times
	Evening ($L_{A\ eq\ (15\ min)}$)	36	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A\ eq\ (15\ min)}$)	36	NA	NA	NA	<25	CHPP operations barely audible during Q4
	Night ($L_{A1(1min)}$)	45	NA	NA	NA	<25	CHPP operations barely audible during Q4
J Parish Drive, Thornton	Day ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Evening ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A\ eq\ (15\ min)}$)	35	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A1(1min)}$)	45	NA	NA	NA	NA	Operations inaudible at all times
L 7 Kilshanny Av, Ashtonfield	Day ($L_{A\ eq\ (15\ min)}$)	40	NA	NA	NA	NA	Operations inaudible at all times
	Evening ($L_{A\ eq\ (15\ min)}$)	40	NA	NA	NA	NA	Operations inaudible at all times
	Night ($L_{A\ eq\ (15\ min)}$)	40	NA	NA	NA	33	CHPP operations audible during Q4
	Night ($L_{A1(1min)}$)	47	NA	NA	NA	41	CHPP operations audible during Q4

NA – Not able to be calculated as operations inaudible at all times (dBA)
[1] Estimated Abel Contribution
CHPP – Bloomfield Coal Handling Processing Plant

Reportable Incidents

No reportable incidents were recorded during the reporting period.

Further Improvements

Other than ongoing plant maintenance and noise monitoring (both attended and unattended), no additional management measures are planned during the next reporting period. Given the results of previous noise monitoring, the placement of the Abel Mine into care and maintenance, and the approval of the Noise Management Plan – Care and Maintenance (Version 5 – 3 June 2019), it is intended that noise monitoring will occur at reduced six-monthly frequencies during the next reporting period as required by the Noise Management Plan.

6.4 BLASTING

No blasts were undertaken during the reporting period.

6.5 AIR QUALITY

Environmental Management

As the Abel Mine is on care and maintenance the principal air quality management measure during the reporting period was maintenance of mobile equipment and on-site vehicles to reduce greenhouse and particulate emissions.

Environmental Performance

Monthly deposited dust monitoring was undertaken by the Company at a total of three locations surrounding and relevant to the Abel Mine. Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM_{10}) monitoring was also undertaken at the existing High Volume Air Sampling (HVAS) station located approximately 2,300m southeast of the surface infrastructure area at Blackhill (located at Site D1). Monitoring locations are shown on **Figure 6.1** and results are summarised in **Table 6.4** and **Figures 6.2**, **6.3** and **6.4**.

Deposited Dust

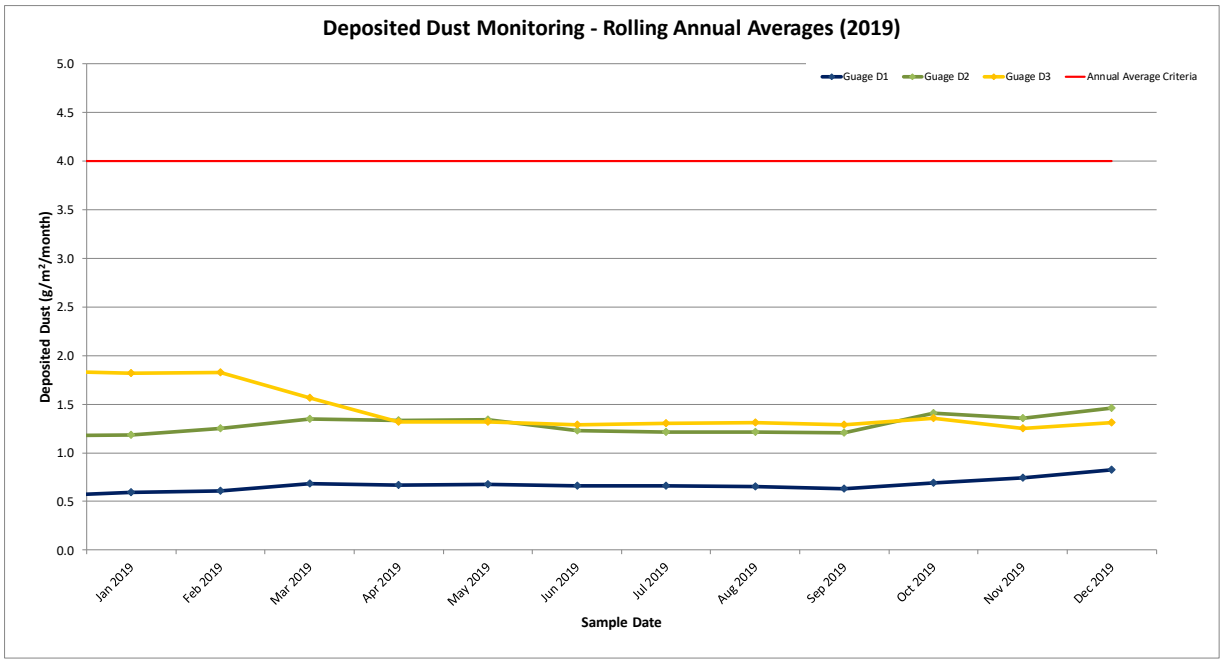
The highest monthly dust deposition measurement was 3.6g/m^2/month (insoluble solids) at D3 during December 2019 (see **Table 6.4**). Given that December 2019 dust deposition at D1 and D2 were also relatively high at 2.1g/m^2/month and 3.2g/m^2/month respectively, the slightly elevated results are likely to reflect regional drought conditions and bushfires during this period.

The annual average monthly deposition rates for the reporting period were between 0.9g/m^2/month and 1.5g/m^2/month which is significantly below the cumulative criteria of 4g/m^2/month and compliant with the incremental criteria of an increase of 2g/m^2/month, indicating good air quality with respect to dust deposition.

Table 6.4
Deposited Dust Monitoring Results – 2019^

Month	Monthly Dust Deposition Rate (g/m^2/month)					
	D1		D2		D3	
	Insoluble	Ash	Insoluble	Ash	Insoluble	Ash
January	1.2	1.0	1.7	1.1	1.5	1.1
February	0.7	0.6	1.6	1.1	1.3	1.0
March	1.3	0.9	1.8	1.5	2.0	1.5
April	0.3	0.3	0.8	0.7	0.9	0.9
May	0.4	0.2	0.9	0.5	0.8	0.5
June	0.5	0.3	1.7	0.8	0.7	0.5
July	0.3	0.2	0.4	0.3	0.4	0.3
August	0.4	0.2	0.5	0.4	0.7	0.4
September	0.5	0.3	0.6	0.5	0.6	0.4
October	1.0	0.6	2.9	1.3	1.5	1.1
November	1.2	0.8	1.4	0.9	1.7	1.2
December	2.1	1.8	3.2	2.4	3.6	2.8
Monthly Minimum	*0.3*	*0.2*	*0.4*	*0.3*	*0.4*	*0.3*
Monthly Maximum	*2.1*	*1.8*	*3.2*	*2.4*	*3.6*	*2.8*
Average	***0.8***	***0.6***	***1.5***	***1.0***	***1.3***	***1.0***

Source: Donaldson Coal Pty Ltd. ^ Historical data included in **Appendix 2**



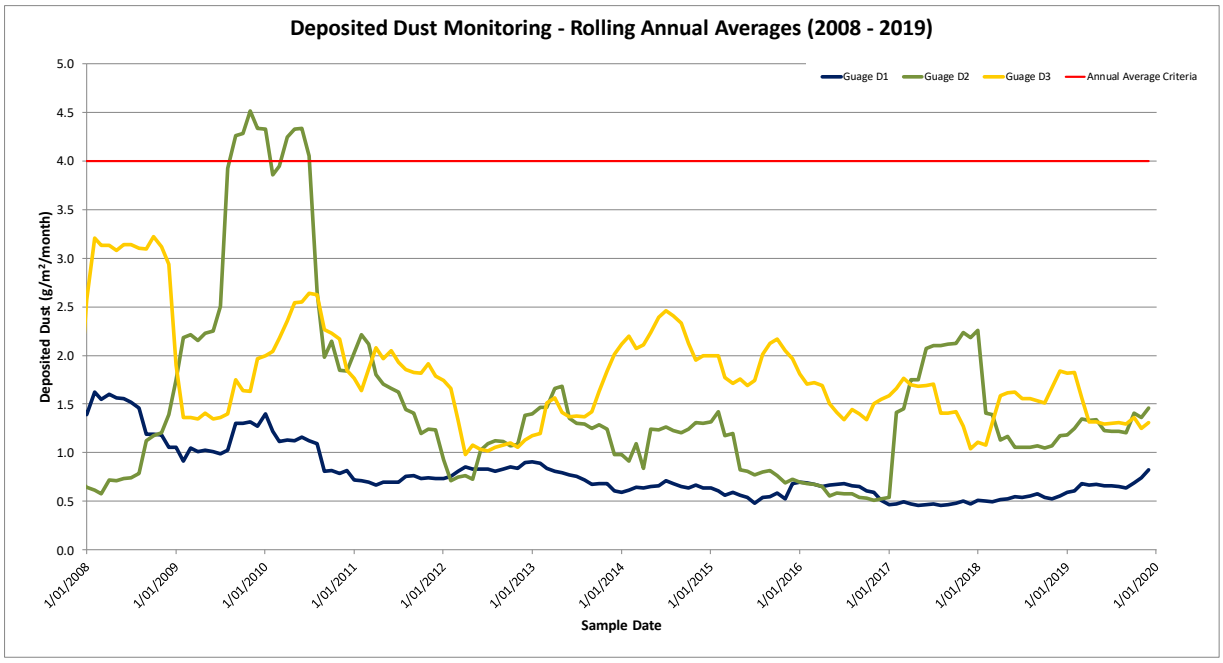


Figure 6.2 Deposited Monitoring Results

Since commencement of the Abel operations, the rolling annual average deposited dust levels have remained low although spikes are evident due to local events, particularly at sites D2 and D3. However, when accounting for such events, no specific trends are evident and deposited dust levels remain significantly below the annual average criteria.

Suspended Particulates – PM_{10} & TSP

The suspended particulate monitoring results indicate that the 50µg/m^3 24-hour *National Environment Protection Measures* (NEPM) goal was exceeded on six occasions during the reporting period, with five of the six exceedances occurring between 29 October 2019 and 10 December 2019 and the remaining exceedance occurring on 13 February 2019 (see **Figure 6.3**). The highest 24-hour average PM_{10} concentration during the reporting period, measured on 10 December 2019, was 118.0µg/m^3.

The October to December 2019 exceedances are consistent with similar or higher PM_{10} levels recorded at the DPIE monitoring stations at Wallsend, Beresfield and Newcastle due to bushfires. The February 2019 exceedance is considered to be the result of both elevated regional and local PM_{10} levels and follows dry conditions throughout January 2019. As no exploration, land preparation, construction or processing works were undertaken during the reporting period, the Abel Mine would have had minimal contribution to the recorded levels.

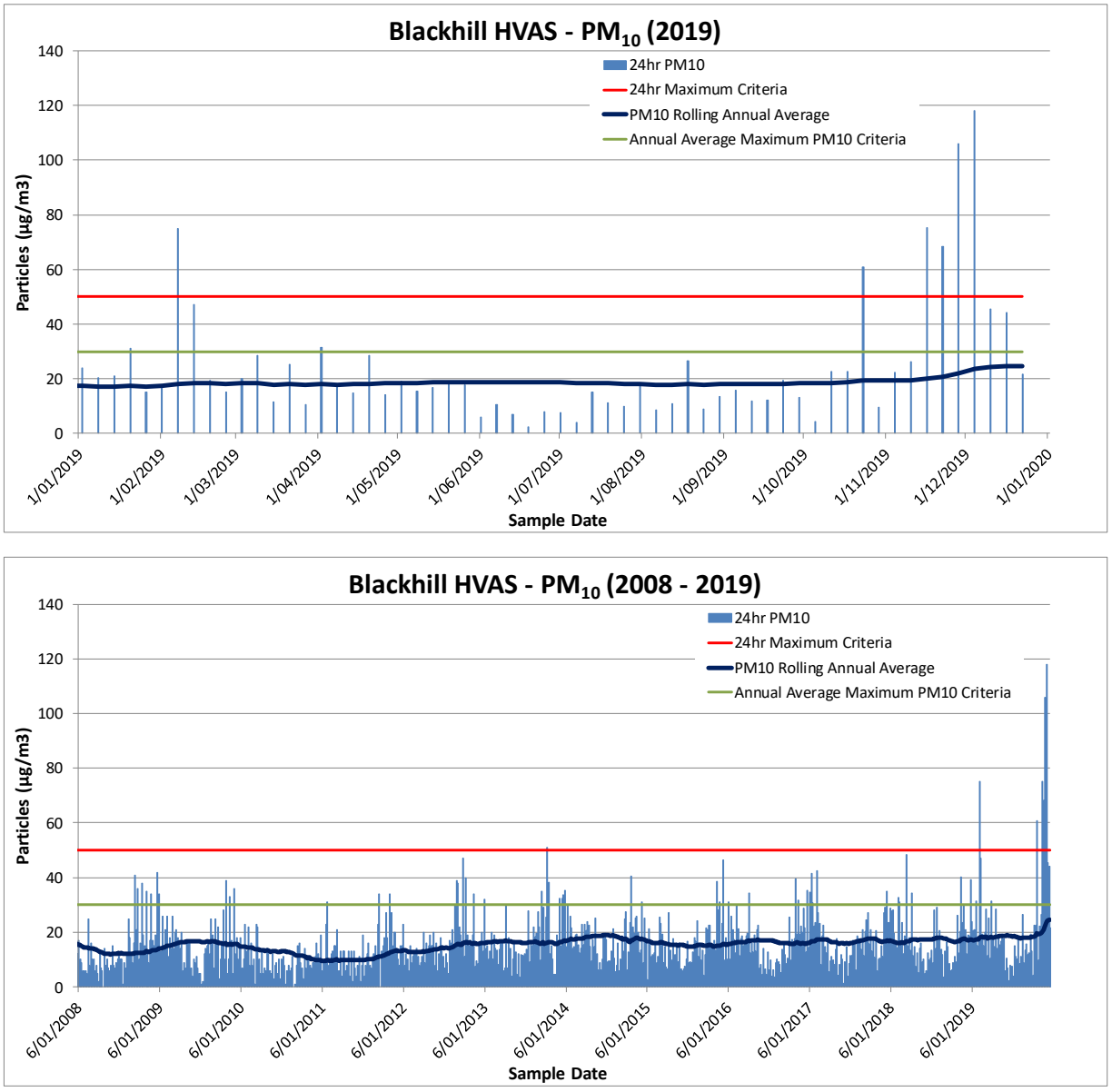
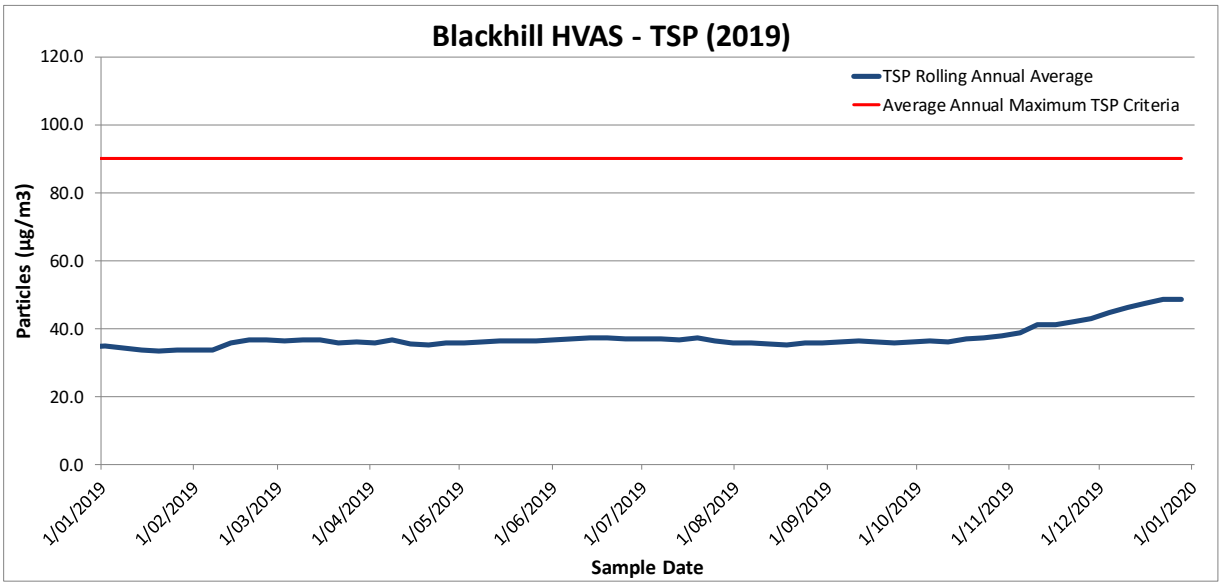


Figure 6.3 PM_{10} Monitoring Results



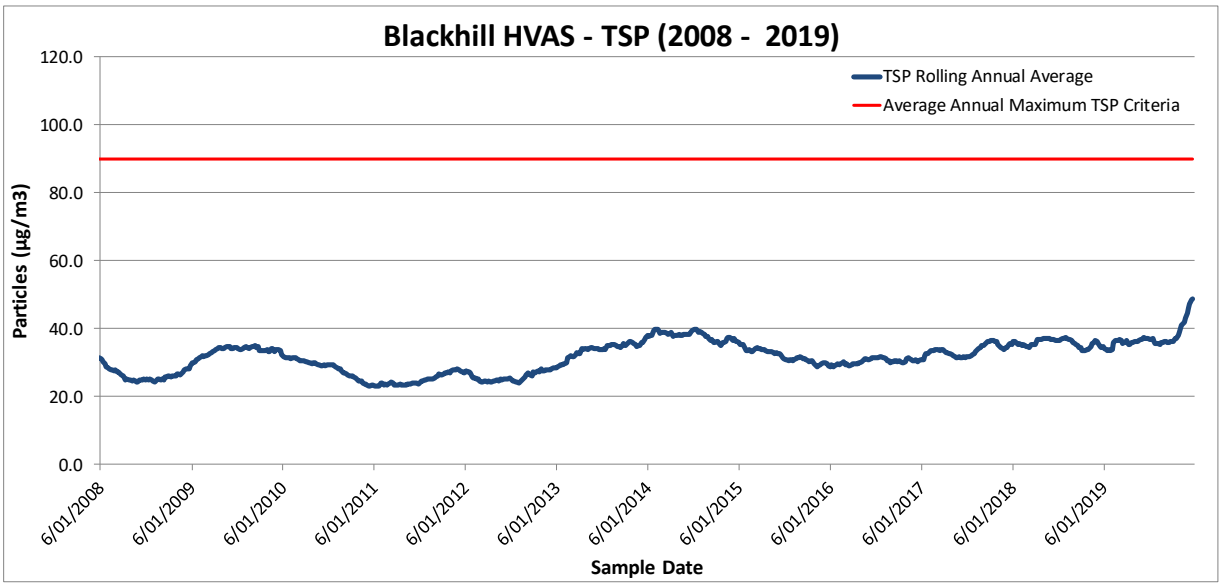


Figure 6.4 TSP Monitoring Results

The annual average PM_{10} concentration for Blackhill was 24.7µg/m^3 for the 12 months to 31 December 2019 whilst the annual average TSP concentration was 48.7µg/m^3, both below the annual average criteria of 30µg/m^3 and 90µg/m^3 respectively. Notwithstanding, these annual average values are significantly higher than the long term (from 6 January 2008) PM_{10} and TSP averages of 16.0µg/m^3 and 32.7µg/m^3 respectively. This is largely attributed to the ongoing bushfires across NSW which have resulted in regular and substantially higher than average particulate levels. This is evident in the rolling annual average PM_{10} data (see **Figure 6.3**).

Other than an annual trend of lower 24-hour average PM_{10} during the winter months and higher 24-hour averages during the summer months, no other long-term PM_{10} trends and no TSP trends are currently apparent.

Reportable Incidents

No reportable incidents relating to air pollution occurred during the reporting period.

Further Improvements

No other improvements relating to air pollution are planned or considered necessary.

6.6 BIODIVERSITY

Environmental Management

No underground mining occurred during the reporting period and no mining has previously been undertaken within areas that would lead to subsidence under or near the Pambalong Nature Reserve or under sub-tropical rainforest. Hence, no specific flora or fauna management measures have been required to date above these areas.

Environmental Performance

Ongoing survey work was completed by Kleinfelder Australia Pty Ltd during the reporting period as part of the Pambalong Nature Reserve Monitoring Plan (see **Appendix 3**). Macroinvertebrate sampling also continued to be undertaken within Blue Gum Creek upstream of the Pambalong Nature Reserve by Niche Environment and Heritage during Autumn and Spring 2019 (see **Appendix 4**).

In accordance with the updated Flora and Fauna Management Plan (Version 4 – 3 June 2019), presented as Appendix 3 of the Rehabilitation Management plan – Care and Maintenance (Version 2 – 3 June 2019), the dam monitoring and management survey and monitoring of the sub-tropical rainforest was not required during the reporting period. Monitoring of flora and fauna present in dams and sub-tropical rainforest areas will recommence following the recommencement of mining operations.

A summary of the results from surveys during the reporting period is provided as follows.

Pambalong Nature Reserve Monitoring

Whilst no mining occurred which could potentially impact upon the Pambalong Nature Reserve, monitoring was undertaken as part of the Pambalong Nature Reserve Monitoring Plan. The 2018/2019 survey represents the 11th year of baseline monitoring. The monitoring plan is aimed at building a picture of what constitutes normal variation so that any impacts from mining in the future can be identified, should they occur.

A total of 109 flora species were recorded during the December 2018 survey, including 22 that were not recorded in the 2017/2018 survey. A total of 200 flora species have been identified since monitoring commenced in 2008. No significant changes to the spatial extent of vegetation communities were observed, however, the following changes in weed abundance and distribution were recorded.

- Increased coverage of *Lantana camara* recorded in the Coastal Foothills Spotted Gum – Ironbark Forest community.
- Increase in weed diversity (12 weed species compared to seven during the 2017 survey) recorded in the Freshwater Wetland Complex.
- Significant decrease in coverage (from 50-<75% during the 2017 survey to <5%) of *Atriplex prostrata* in the Paperbark Swamp Forest.

Key weed species recorded within the Pambalong Nature Reserve during the survey included:

- *Eichhornia crassipes* (Water Hyacinth);
- *Alternanthera philoxeroides* (Alligator Weed);
- *Cenchrus clandestinus* (Kikuyu);
- *Rubus fruticosus* sp. aggregate (Blackberry); and
- *Lantana camara* (Lantana).

A total of 104 fauna species were recorded during the November/December 2018 and May 2019 surveys which is marginally below the yearly average of 105 species. Species recorded included 79 bird, 17 mammal (two arboreal, three terrestrial and 12 bat), six frog and two reptile species (**Figure 6.5**). Bird numbers were slightly less than the 2017/2018 monitoring but consistent with the 2 yearly cyclical rise and fall that recorded to date. Threatened species recorded during the survey included three bat species (*Miniopterus australis*, *Pteropus poliocephalus* and *Falsistrellus tasmaniensis*) and three bird species (*Haliaeetus leucogaster*, *Botaurus poiciloptilus* and *Glossopsitta pusilla*).

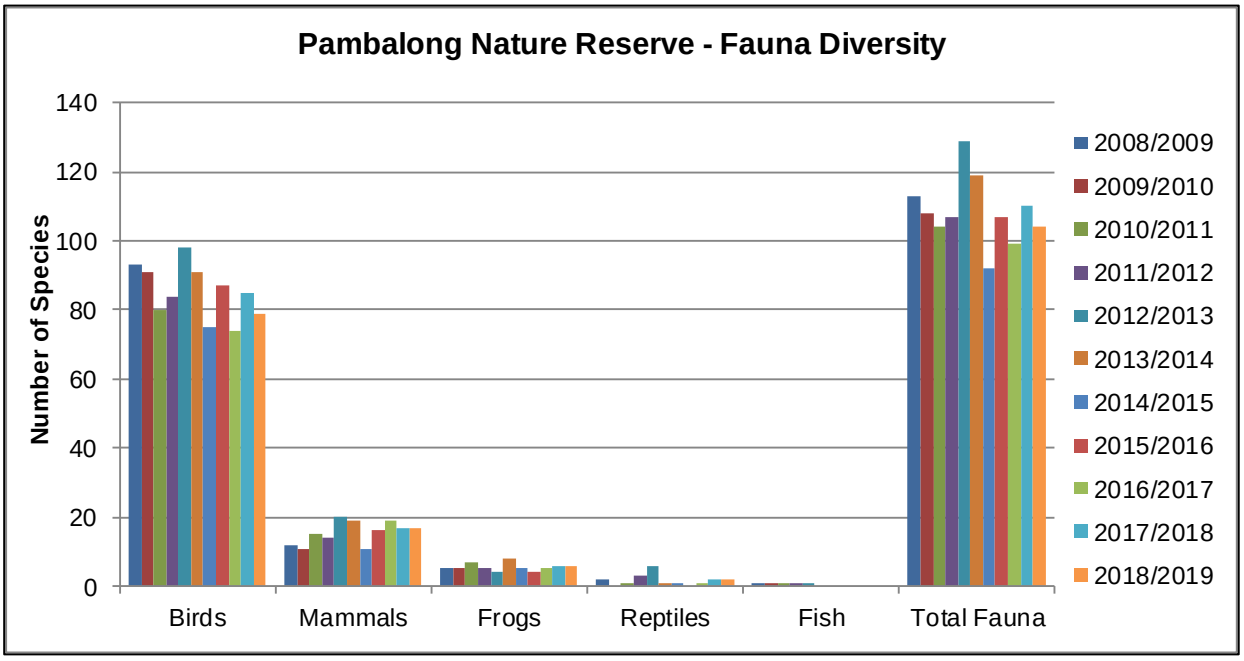


Figure 6.5 Selected Ecological Monitoring Results

Macroinvertebrate – Blue Gum Creek

Macroinvertebrate surveys have been undertaken within Blue Gum Creek at Stockrington Road and Dog Hole Road since 2009 and 2008 respectively. Monitoring during the reporting period included an assessment of the Riparian Channel Environmental (RCE) ranking and aquatic ecology diversity (utilising the SIGNAL index).

During the 2019 Autumn and Spring surveys, the RCE rankings were 38 and 40 respectively for the upstream sites. For the downstream sites, RCE rankings were 35 and 36 during the 2019 Autumn and Spring periods respectively. RCE scores above 40 reflect a stream in good condition, between 20 and 40 reflect a stream in moderate condition and below 20 indicates a

stream in poor condition. The 2019 RCE rankings are consistent with previous monitoring events which range from 33 to 40, indicating that Blue Gum Creek remains in moderate condition.

Table 6.5 provides a summary of the biological characteristics recorded during monitoring undertaken to date. It is noted that the use of the SIGNAL2 index was adopted in 2015 and results in a lower score that the original SIGNAL index utilised in previous monitoring.

Table 6.5
Summary of Biological Characteristics (Macroinvertebrates)

Parameter	Date	Blue Gum Creek at Stockrington Road (upstream)	Blue Gum Creek at Dog Hole Road (downstream)
Number of Taxa	01/08/08	-	22
	20/05/09	29	25
	16/11/09	20	22
	27/04/10	-	11
	14/12/10	33	35
	01/04/11	24	20
	18/10/11	24	16
	12/04/12	-	23
	01/11/12	28	20
	21/03/13	10	12
	29/09/13	22	16
	24/03/14	9	8
	15/09/14	20	13
	12/06/15	17	16
	07/10/15	15	2
	03/03/16	15	20
	08/09/16	22	5
	May 17	13	8
	Sep 17	-	9
	08/05/18	11	16
	14/11/18	19	11
	28/05/19	19	13
	16/09/19	12	21
SIGNAL Index	01/08/08	-	5.1
	20/05/09	5.7	5.8
	16/11/09	4.6	4.6
	27/04/10	-	3.4
	14/12/10	4.7	4.7
	01/04/11	4.7	4.4
	18/10/11	5.0	5.3
	12/04/12	-	5.6
	01/11/12	4.4	5.0
	21/03/13	4.9	5.6
	29/09/13	4.8	5.3
	24/03/14	4.8	3.2
	15/09/14	5.2	4.8
SIGNAL2 (weighted) Index	12/06/15	4.45	4.1
	07/10/15	3.29	3.17
	03/03/16	3.75	3.76
	08/09/16	3.98	2.73
	May 17	3.41	2.94
	Sep 17	-	3.43
	08/05/18	3.96	3.81
	14/11/18	3.18	3.54
	28/05/19	4.28	4.44
	16/09/19	4.05	4.11

Source: Niche Environment & Heritage and Robyn Tuft Associates

The upstream and downstream weighted SIGNAL2 scores during Autumn were 4.28 and 4.44 respectively, with upstream and downstream weighted SIGNAL2 scores in Spring decreasing to 4.05 and 4.11 respectively. The higher a SIGNAL2 score the more pollution sensitive taxa are present, indicating lower pollution, whilst a lower score indicates more pollution tolerant taxa are present, indicating greater pollution. SIGNAL2 scores of 5 and above indicate dominance of pollution sensitive taxa whilst scores of 4 and below indicate dominance of pollution tolerant taxa.

Therefore, the weighted SIGNAL2 scores recorded during the reporting period indicate the sites are subject to moderate pollution, potentially the result of pollution from erosion, siltation, weeds and elevated salinity. Additionally, taxa present indicate a dominance of pollution tolerant macroinvertebrate families. Despite the weighted SIGNAL2 scores, sensitive mayfly taxa (Leptophlebiida) and caddis fly taxa (Leptoceridae) were recorded at both upstream and downstream sites.

Overall, RCE and SIGNAL scores recorded for Blue Gum Creek during the 2019 Autumn and Spring surveys are consistent with previous monitoring results which indicate that the creek is in moderate condition and is potentially subject to ongoing disturbance or pollution. This poor stream health appears unrelated to the Abel or previous Tasman mining operations and is more likely related to disturbance from roadways, agriculture, and past high flow events as well as ongoing land use management issues and low flows associated with dry conditions during the reporting period.

Given the likely significance of other disturbance sources, the ongoing Blue Gum Creek monitoring program will be reviewed to determine whether the current monitoring sites remain appropriate locations for identifying mining-related impacts.

Reportable Incidents

No reportable incidents were recorded during the reporting period.

Further Improvements

In accordance with the updated Flora and Fauna Management Plan, monitoring of dams, sub-tropical rainforest and the Pambalong Nature Reserve will now not be undertaken until the recommencement of mining activities. As recommended by Niche Environment and Heritage, consideration will also be given to the need for ongoing aquatic monitoring within Blue Gum Creek and/or whether the monitoring program is continued in its current form.

Prior to the recommencement of mining operations, relevant dams will be reassessed for frog habitat to account for changes such as eutrophication from stock, fertiliser applications or other farming practices as opposed to changes resulting from mining.

6.7 HERITAGE

In accordance with the June 2019 *Abel Underground Mine: Aboriginal Heritage Management Plan* (Donaldson Coal, 2019), annual reporting will be undertaken through the Annual Reviews with a 5 yearly report documenting the results of monitoring undertaken in accordance with the plan to be prepared and provided to either the Mindaribba or Awabakal Local Aboriginal Land Councils (LALCs) (as applicable to the area monitored), DPIE and OEH. Given that no mining was undertaken during the 2019 reporting period, no specific monitoring was completed. The first of the 5 yearly reports is planned following the recommencement of mining operations.

6.8 SUBSIDENCE

Environmental Management

To date four Subsidence Management Plan (SMP)/Extraction Plan areas have been prepared for the mine. As part of each SMP/Extraction Plan, subsidence monitoring programs have been prepared together with required environmental and public safety management plans. Copies of all relevant SMP/Extraction Plan assessment reports and management plans are available on the Company's website.

Environmental Performance and Further Improvements

No mining occurred during the reporting period and no further quantitative monitoring of previous undermined panels occurred. However, photographic monitoring and visual inspections continued during the reporting period. A summary of the outcomes of this monitoring and any actions taken is outlined as follows.

- No further impacts to Blackhill Road were observed and the infrastructure remained within a safe and serviceable condition.
- All subsidence impacts on the Hunter Water Corporation Waterline, Ausgrid Powerlines and TransGrid Transmission Towers were within predicted levels with no subsidence impacts or management actions required during the reporting period.
- There have been no other observed and/or reported subsidence impacts, incidents, service difficulties, community complaints during the reporting period that would require notification under the SMP/Extraction Plan approvals or plans.

A comparison of previously surveyed subsidence levels against predicted levels for all panels within which extraction has been completed to date is provided within the annual Subsidence Management Report (see **Appendix 6**). A summary of subsidence impacts against the performance measures outlined in PA 05_0136 *Schedule 3 Condition 1* is also provided in **Table 6.6**.

During the next reporting period monitoring will be continued in accordance with the approved or any new SMP/Extraction Plans.

6.9 WASTE MANAGEMENT

In accordance with *Schedule 3 Condition 25* of PA 05_0136, a summary of waste management during the reporting period is provided as follows.

Wastes generated on site during the reporting period included the following.

- Hazardous (Recycled) - lead acid batteries and oil.
- Non-Hazardous (Recycled) – paper and cardboard, confidential documents, scrap steel.
- Hazardous (Disposal) – medical and sanitary waste, oily rags.
- Non-Hazardous (Disposal) – mixed solid waste.

Table 6.6
Review of Subsidence Impact Performance Measures

Performance Measure	Status
Table 2: Subsidence Impact Performance Measures ***Water Resources*** • Hexham Swamp; • Blue Gum Creek and Alluvium; and • Long Gully. — • Negligible environmental consequences, including: – *negligible* reduction in the quantity of water entering the swamp or the creeks (ie baseflow or environmental flows); – *negligible* reduction in the quality of water entering the swamp or the creeks; and – *negligible* reduction in creek bed or bank stability. • No connective cracking between the surface and the mine. • All other watercourses in the mining area. — • No greater environmental consequences than predicted in the EA and EA (MOD 3).	Mining to date has occurred substantially north of these features. Groundwater level monitoring has also not recorded any drawdown of surficial aquifers (see Section 7.3). Subsidence monitoring has not recorded any impacts upon other watercourses.
Land • Cliffs. — • Minor environmental consequences (that is, occasional rockfalls, displacement of or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 3% of the total face area of cliffs within the mining area). • Minor cliffs • Rock face features; and • Steep slopes. — • Minor environmental consequences (that is, occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 5% of the total face area of each such type of feature within the mining area). • Pambalong Nature Reserve. — • Negligible environmental consequences.	Mining has not yet occurred under any major cliff areas. Subsidence monitoring has not recorded any rock falls or other impacts. No impacts upon Pambalong Nature Reserve have been recorded.
Biodiversity • Threatened species; and • Endangered ecological communities (including unspecified Lowland Rainforest EEC). — • Negligible environmental consequences.	No mining related impacts have been recorded to date (see Section 6.6).
Heritage Sites • Aboriginal heritage sites. — • No greater subsidence impacts or environmental consequences than predicted in the EA and EA (MOD 3). • Historic heritage. — • No greater subsidence impacts or environmental consequences than predicted in the EA and EA (MOD 3).	No impacts upon Aboriginal or historical heritage have been recorded to date.
Mine workings • First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible subsidence impacts, negligible environmental consequences. — • To remain long-term stable and non-subsiding. • Second workings. — • To be carried out only in accordance with an approved Extraction Plan.	Subsidence control zones and second workings have been implemented in accordance with the approved Subsidence Management Plans.

Waste oil was stored within 205L drums, 1,000L IBCs or the waste oil tank within the oil store before being removed from site, along with used oil filters and oily rags, by J R Richards & Sons. A purpose built bunded storage container is also utilised to ensure adequate bunded storage is available. Used tyres are removed from site during servicing by Marathon Tyres Pty Ltd for repair or disposal.

Paper, cardboard, steel, aluminium and any other recyclable material was stored separately in 1.5m^3 and 3.0m^3 skip bins for recycling. Paper, cardboard and general waste material continued to be collected by J R Richards & Sons on a weekly basis whilst scrap metal was also collected by J R Richards & Sons on an as-needs basis. The scrap steel/drum crusher continued to be used.

All general wastes were stored in skip bins and removed by J R Richards & Sons.

The approximate volume of each waste stream generated during the reporting period is presented in **Table 6.7** together with the proportion of waste recycled. The proportion of waste recycled decreased from 74.30% in 2018 to 12.88% in 2019, largely due to a decrease in the volume of scrap steel generated, and subsequently recycled. As is expected, the total volume of wastes has also decreased since the mine entered care and maintenance.

As part of the Company's Environmental Management Strategy, it is a requirement for contractors and employees to minimise waste generation wherever possible and to dispose of all waste in a satisfactory matter. Whilst waste volumes during care and maintenance will remain relatively low, waste volumes will continue to be monitored into the future and opportunities to minimise waste or increase recycling implemented, where appropriate.

Table 6.7
Approximate Waste Volumes 2016 to 2019

Waste Class	Waste Stream		Total Volume (kg)		
		2016	2017	2018	2019
Hazardous (Recycled)	Effluent	43,500	0	0	0
	Lead Acid Batteries	0	0	220	0
	Empty Drums	0	88	0	16
	Waste Oil & Oil Filters	6 046	2 900	800	1 100
	Recycled	20.55%	6.31%	1.11%	5.17%
Non-Hazardous (Recycled)	Paper and Cardboard	1 960	1 170	545	1 200
	Confidential Documents	0	0	420	466
	Scrap Steel	116 560	14 100	66 271	0
	Timber	4 560	0	0	0
	Recycled	51.05%	32.24%	73.19%	7.72%
Hazardous (Disposal)	Medical and Sanitary Waste	359	138	161	238
	Oily Rags	408	258	54	72
	Recycled	0.35%	0.84%	0.23%	1.44%
Non-Hazardous (Disposal)	Mixed Solid Waste	67 595	28 715	23 390	18 499
	Recycled	28.04%	60.62%	25.46%	85.68%
Total Waste		**241 077**	**47 369**	**91 861**	**21 591**
Recycled Waste		**172 633**	**18 258**	**68 256**	**2 782**
Recycled Waste (%)		**71.61%**	**38.54%**	**74.30%**	**12.88%**

7. WATER MANAGEMENT

7.1 WATER TAKE

Applicable water licencing held for the Abel Mine operations include Water Supply Works and Applicable water licencing held for the Abel Mine operations include Water Supply Works and Use Approval 20WA218986 and Water Access Licence (WAL) 41525, which provide for up to 500ML of water take annually. The Abel Mine is not actively dewatered in advance of mining, rather passive inflows into the mine workings are transferred to completed mine workings or to the surface.

The net groundwater inflow volume has been estimated to be 178.8ML for the current water year 01 July 2018 to 30 June 2019, well within the 500ML allocation. No take of water from the overlying alluvial aquifers has occurred to date.

No compensatory water has been required to be supplied throughout the life of the mine.

7.2 SURFACE WATER

Environmental Management

As part of the Water Management Plan, Abel Mine transfers water off site to the Big Kahuna Dam and then to Bloomfield CHPP, as required. During the reporting period, a total of 207ML was transferred from the Abel Mine to the Big Kahuna Dam (consisting of groundwater inflows to the underground working and surface flows from the Square Pit, West Pit and Surface Infrastructure Area) and a total of 311ML was transferred from the Big Kahuna Dam to the Bloomfield CHPP. Surface water monitoring sites specified for the Abel Mine are aimed at detecting indirect impacts such as from underground mining activities and activities in the surface infrastructure area. Monitoring at Sites Four Mile Creek Upstream (FMCU) and Four Mile Creek Downstream (FMCD) commenced prior to the commencement of the Abel Mine and serve to provide baseline data. Monitoring at Sites 1, 8, 10 and 11 commenced in 2006 and provide baseline data and can also be used to assess impacts attributable to the Abel Mine.

Environmental Performance

Surface water monitoring data for the reporting period is summarised in **Table 7.1** and presented graphically in **Figure 7.1** with the full graphical presentation since 2008 presented in **Figure 7.2** and data set provided in **Appendix 2**.

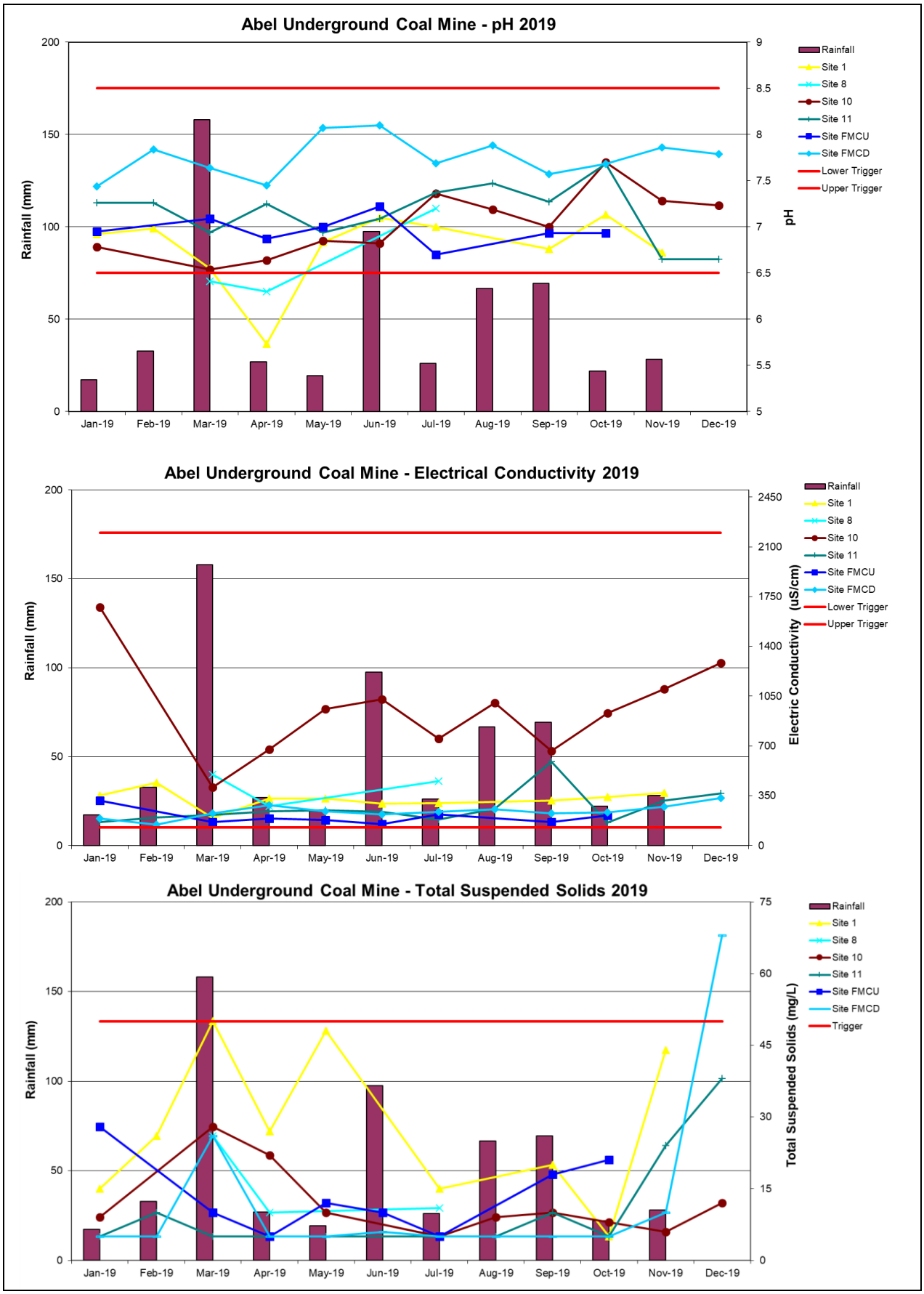


Figure 7.1 Surface Water Quality Monitoring Results – 2019

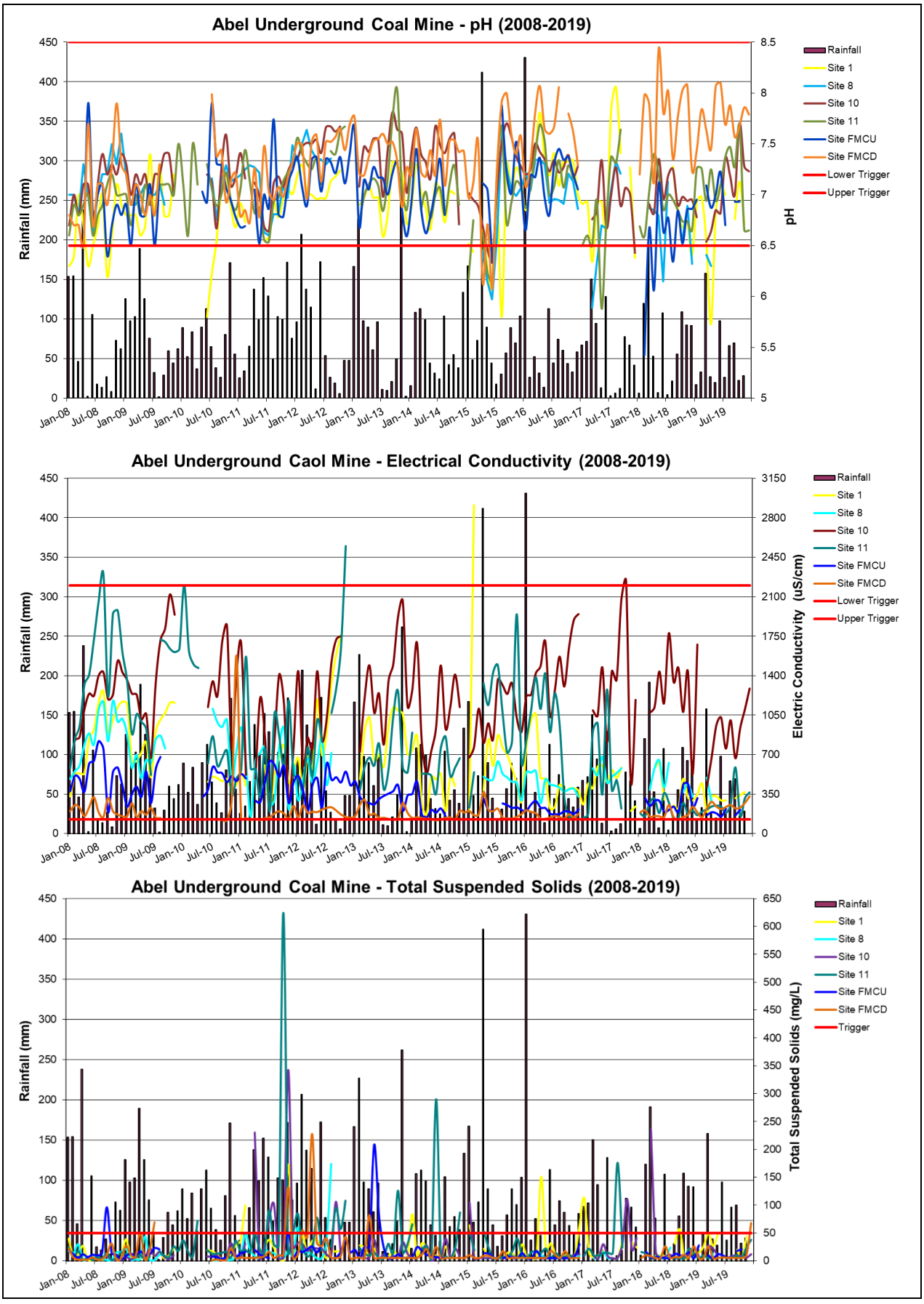


Figure 7.2 Surface Water Quality Monitoring Results – 2008 to 2019

Table 7.1
Summary of Water Quality Monitoring Results – 2019[1]

Sampling Site^	pH[#]	EC (µS/cm)[#]	Turbidity (NTU)	TSS (mg/L)
Upstream of Underground Workings				
1	**5.73** – 7.13 (6.77)	193.9 – 443.0 (326.2)	20.9 – **120.0** (48.0)	5 – 50 (28)
8	**6.30** – 7.20 (6.64)	275.2 – 498.0 (409.2)	10.9 – 31.2 (20.7)	10 – 26 (16)
10	6.54 – 7.70 (7.04)	410.0 – 1 676.0 (953.2)	**5.9** – 45.0 (22.85)	5 – 28 (12)
Downstream of Underground Workings				
11	6.65 – 7.68 (7.15)	160.3 – 588.0 (264.3)	**0.7** – 32.0 (7.12)	5 – 38 (11)
FMCU	6.70 – 7.22 (6.96)	151.8 – 314.0 (198.7)	20.0 – 48.1 (39.5)	5 – 28 (14)
FMCD	7.44 – 8.10 (7.75)	147.9 – 332.0 (238.5)	**5.3** – 16.9 (11.3)	5 – **68** (13)
Trigger Level	*6.5 – 8.5**	*125 to 2 200**	*6 – 50 (NTU)**	*50[@]*

1. Results cover period 01/1/2019 to 31/12/2019 ( ) = Average
^ See **Figure 6.1** [@]Standard Industry Criterion * ANZECC Chapter 3 – Aquatic Ecosystems – Lowland Rivers in NSW
Bold Red Text – Exceedance of Trigger Level [#] Field Measurement NS – Not Sampled

Analysis of the results obtained during the reporting period indicates the following.

1. Recorded pH values for two of the six monitoring sites fell below the lower pH water quality trigger value (6.5) for Lowland Rivers in NSW outlined in the *Guidelines for Fresh and Marine Water Quality* (ANZECC 2000) on one to two occasions during the reporting period (see **Figure 7.1**). Both sites, Site 1 and 8, are located upstream of the underground workings. Long-term monitoring records a history of short-term declines in pH. Previously, short term declines in pH have followed significant rainfall events (see April 2015 and January 2016 in **Figure 7.2**). Results which fall below the lower trigger value during this reporting period also appear to follow significant rainfall during March 2019.

   It is also noted that there is a divergence of the pH between the Four Mile Creek Upstream (FMCU) and Downstream (FMCD) locations. This is thought to be the result of ongoing leakage from the Stoney Pinch Reservoir above the Four Mile Creek Downstream sample point. As can be seen from the results, the lower pH originates at the upstream location and improves to neutral / slightly alkaline downstream. This is not mine related given that no operational activities or discharges occurred from either the Donaldson Open Cut Coal Mine or Abel Underground Coal Mine.

   No other long-term trends in pH are apparent (**Figure 7.2**).

2. The electrical conductivity (EC) results range between 147.9µS/cm and 1 676.0µS/cm for all sites which are within the water quality trigger values for Lowland Rivers in NSW (125 to 2 200µS/cm) (ANZECC 2000) at all sample sites.

   EC does not appear to be strongly correlated with the monthly rainfall. The average EC values upstream are significantly higher than the corresponding downstream values. No long-term trends in EC are apparent..

3. Turbidity (NTU) at upstream Site 1 and total suspended solids (TSS) levels at downstream Sites FMCD, exceeded the respective upper water quality trigger values for Lowland Rivers in NSW (6 to 50 NTU) (ANZECC, 2000) and industry standard TSS criteria (50mg/L). The lower NTU limit was also exceeded at upstream Site 10 and downstream Sites 11 and FMCD.

   Consistent with historical trends, TSS and NTU results do not appear to coincide with rainfall (**Figure 7.2**). In fact, the TSS exceedance at Site FMCD in December 2019 occurred during a month of no rainfall (**Figure 7.1**).

   Given that that each recorded exceedance did not persist across multiple survey periods, it is considered that short-term, localised conditions rather than mine activities contributed to these levels.

   No long-term trends are apparent within the monitoring data. Widely varying results with spikes in turbidity and TSS are not necessarily correlated with monthly rainfall. Baseline monitoring results for both upstream and downstream sites have previously recorded significantly elevated TSS which are considered to form part of the natural variation.

The Environmental Assessment (Donaldson Coal, 2006) predicted no significant impacts upon surface water as a result of the mine activities. The monitoring results to date support that assessment.

Reportable Incidents

No reportable incidents occurred during the reporting period.

Further Improvements

No other surface water control measures are planned or considered necessary.

7.3 GROUNDWATER

Environmental Management

Monthly monitoring of regional groundwater levels and groundwater quality was undertaken, where possible, throughout the reporting period in accordance with the Water Management Plan and Integrated Environmental Monitoring Program.

Environmental Performance

Groundwater Levels

A graphical summary of groundwater level monitoring results relevant to the Abel Underground Coal Mine is provided in **Figure 7.3** and an interpretation of these results is provided as follows.

Monitoring indicates that there is little evidence of any drawdown response in the alluvium or regolith groundwater. In particular Piezometers 81A and 81B are located adjacent the Pambalong Nature Reserve (see **Figure 6.1**). Monitoring results from 81A (single vibrating wire transducer placed within the Lower Donaldson Seam) showed a drawdown response to mining the Donaldson Seam within the Abel Mine. However, Piezometer 81B is screened within overlying shallow Permian strata with water levels remaining stable. The lack of response in the shallow piezometer may indicate minimal mining impact on the Pambalong Nature Reserve.

Piezometers 63A and 63B are located to the east of the Abel Mine adjacent to the F3 Freeway and near the Hexham Swamp (see **Figure 6.1**). It appears that the shallow Piezometer 63B has failed or the bore has collapsed and therefore this piezometer no longer provides useful data. However, Piezometer 63A is screened in the Lower Donaldson Seam and remains operational. Monitoring results from Piezometer 63A remained consistent throughout the reporting period indicating minimal impact from previous mining activities.

Similarly, monitoring results from 78A (standpipe piezometer within the Donaldson Seam) indicated minimal impact until the start of secondary extraction in Panel 23 in June 2013. Drawdown rates stabilised during 2016 and have since remained steady. As for the other nested piezometers, 78B located within the overlaying regolith indicates minimal drawdown response

Piezometer 80 is screened in the Donaldson Seam and located to the south of the mining activities completed to date. An expected drawdown commenced during secondary extraction in Panel 23 June 2013. The decline has steadied since the cessation of mining activities with a steady but modest recovery since mid-2017.

The results indicate that groundwater pressure reduction within the Lower Donaldson Seam resulting from mining has occurred as anticipated and is insulated from shallow and surficial groundwater systems in this area. This is consistent with the predictions within the Environmental Assessment.

Groundwater Inflows

As reported for 2015, between August 2013 and October 2015 inflow volumes could not be accurately estimated as a significant portion of mine water was accumulating in isolated in-mine storages. From 01 October 2015 water began reporting from the overflow of the storage areas. Based on a total in-mine storage volume of 459ML, it is calculated that average groundwater inflow ranged from 120ML/year to 240ML/year during that time.

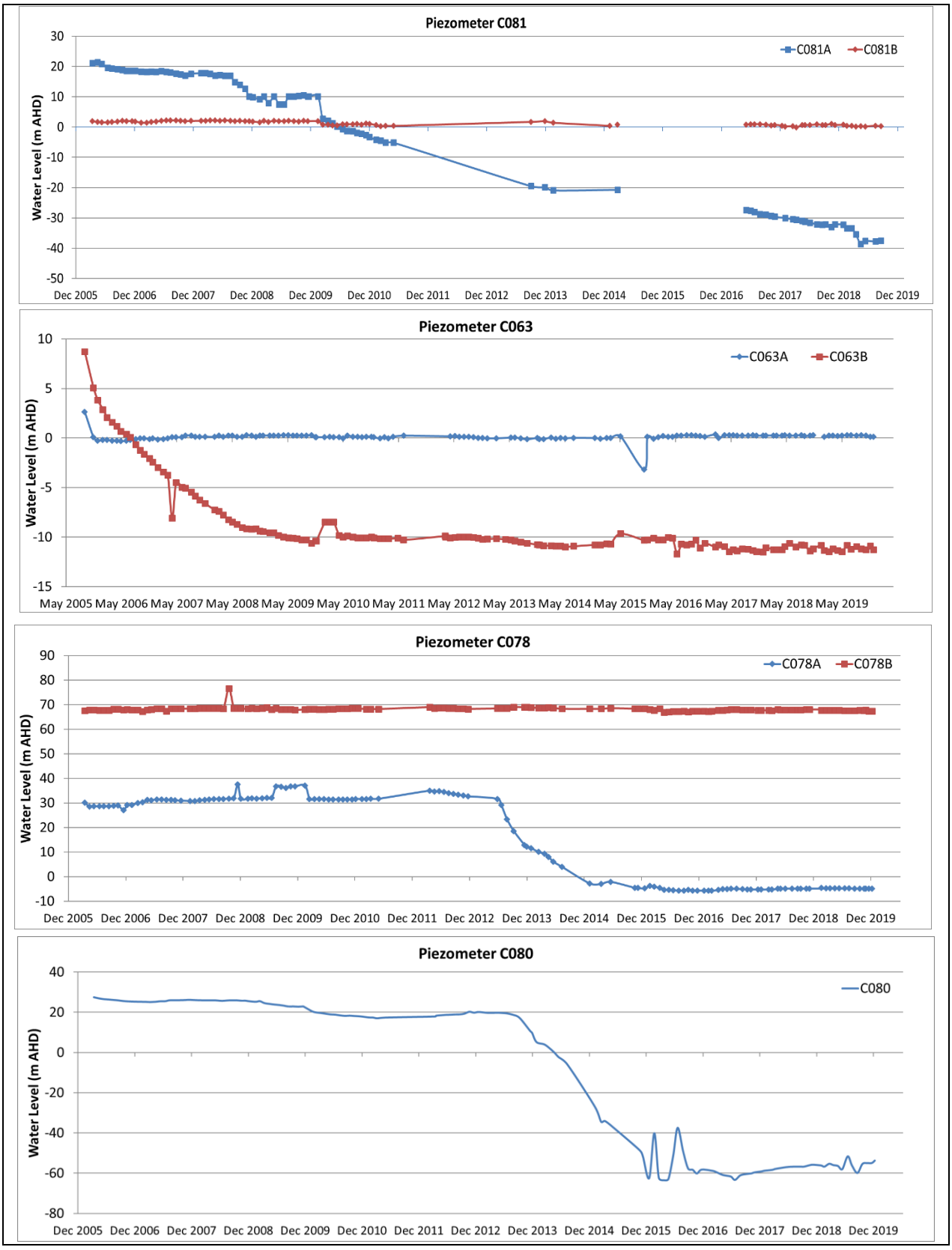


Figure 7.3 Groundwater Level Results – All Data

During the 2019 reporting period, groundwater inflows are estimated at 178.8ML. Since the mine was placed on care and maintenance, water has continued to be pumped from the underground workings, however, there have been smaller volumes of inflow and declining outflows. Groundwater model predictions for this stage of mining were for between 800ML and 1,000ML/year. Therefore, the actual inflow rates remain well below the predicted maximum rate.

Groundwater Quality

Groundwater quality monitoring results are presented in **Appendix 2**. A summary of three representative bores located within the Abel underground mine area is presented in **Table 7.2** and **Figures 7.3** with the full graphical presentation since 2008 presented in **Figure 7.4**.

Table 7.2
Summary of Groundwater Quality Monitoring Results – 2019

Sampling Site#	pH	EC (µS/cm)
DPZ – 6	6.59 – 6.96 (6.78)	1 960 – 2 420 (2 264)
DPZ – 13*	No Access	No Access
JRD2	6.27 – 7.28 (6.96)	146 – 2 550 (2 134)

Source: Donaldson Coal Pty Ltd ( ) = Average # see **Figure 6.1**
*DPZ – 13 inaccessible during 2019

These bores record pH values ranging from slightly acidic to slightly alkaline (6.27-7.28) and EC values between 146µS/cm and 2 550µS/cm.

Whilst some variations have occurred in pH, monitoring has generally recorded consistent pH values over time with all pH results within previously recorded baseline ranges

A downward trend in EC has previously been observed at bore DPZ13 (**Figure 7.5**) starting in 2010 / 2011, which may be due to enhanced recharge following drawdowns in the coal measures as a result of mining. Landholder access was unable to be obtained to enable sampling from DPZ-13 during the reporting period to confirm whether this trend had continued or plateaued. Conversely, EC has been relatively consistent within DPZ-6 and JRD2, with monitoring indicating occasional 'outliers' of significantly lower EC. This is likely due to ingress of rainwater temporarily lowering the salinity

For comparison, the Environmental Assessment baseline monitoring reported that the quality of groundwater sampled within the underground mining area of the Abel Mine was variable with total dissolved solids (TDS) ranging from less than 518mg/L to 13 000mg/L, which is approximately equivalent to EC readings of between 865µS/cm and 21 700µS/cm.

Reportable Incidents

No reportable incidents occurred during the reporting period.

Further Improvements

Monitoring will continue in accordance with the current Water Management Plan (WMP).

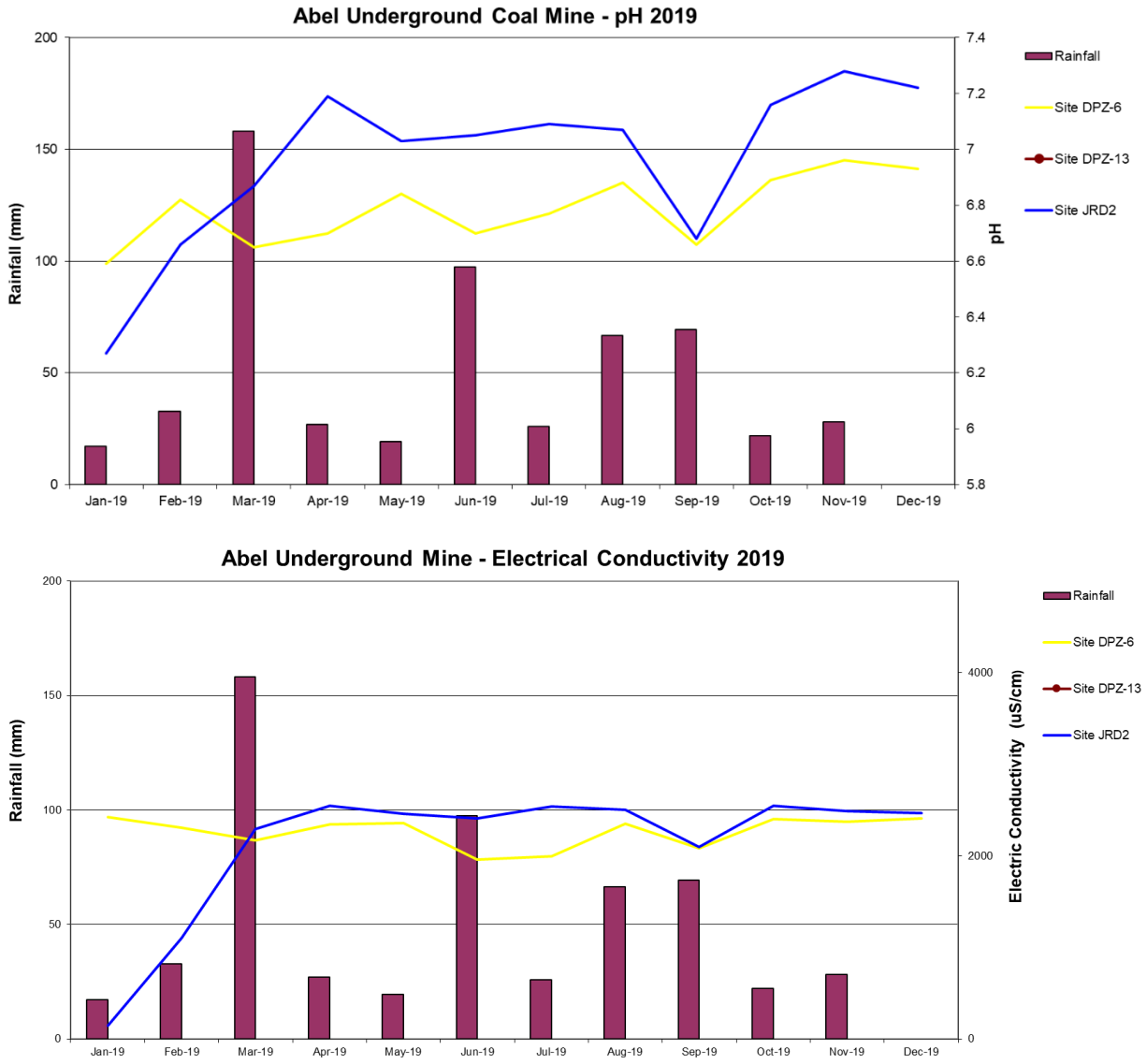


Figure 7.4 Groundwater Quality Monitoring Results – 2019

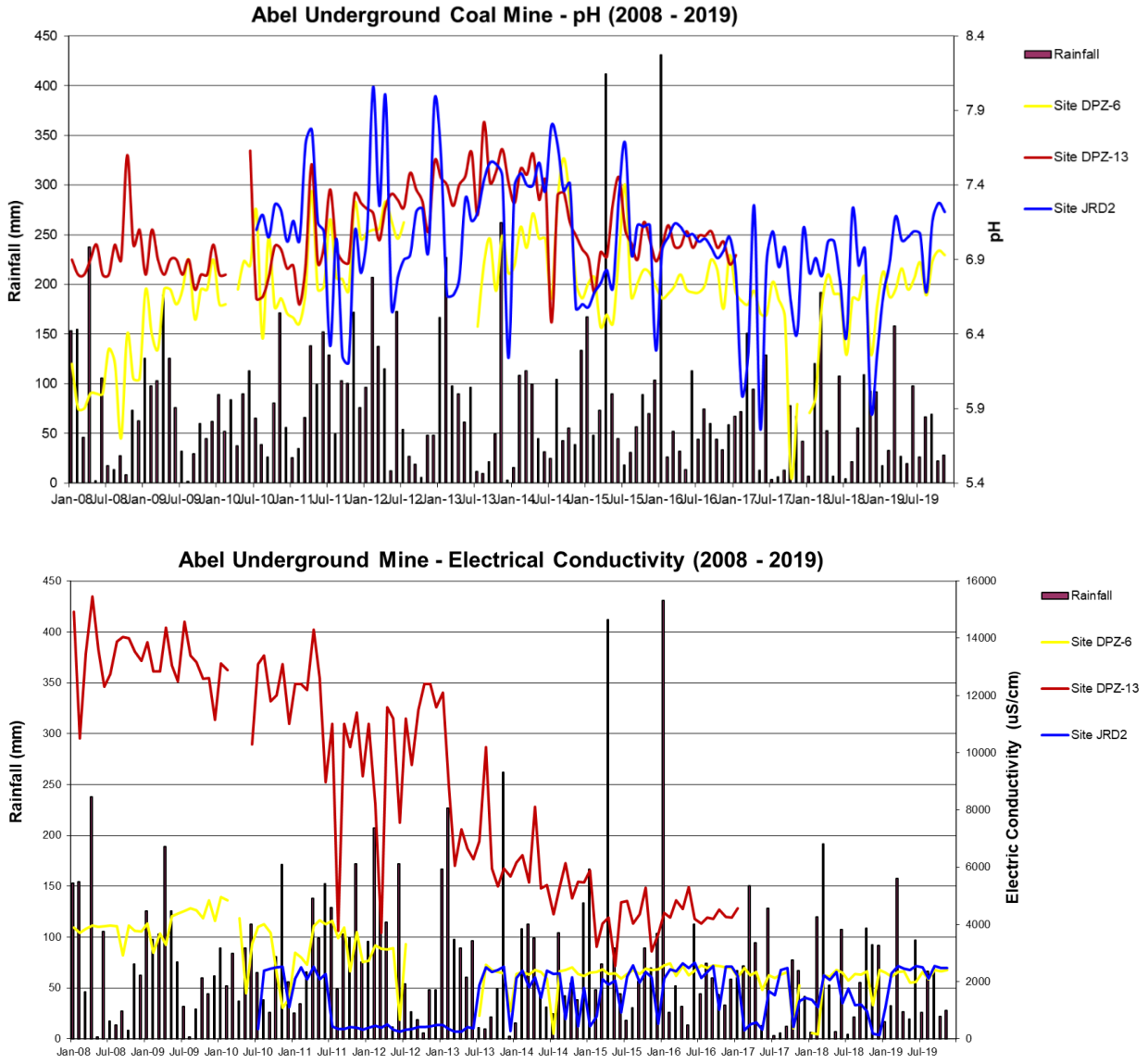


Figure 7.5 Groundwater Quality Monitoring Results – 2008 - 2019

8. REHABILITATION

8.1 REHABILITATION PERFORMANCE DURING THE REPORTING PERIOD

Figure 8.1 shows the status of rehabilitation and a summary of the areas of rehabilitation is provided in **Table 8.1**.

Table 8.1
Rehabilitation Summary

Mine Area Type	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period (Forecast)
	Year 10 (ha)	Year 11 (ha)	Year 12 (ha)
Total mine footprint	13.15[1]	13.15[1]	13.15[1]
Total active disturbance	13.15[2]	13.15[2]	13.15[2]
Land being prepared for rehabilitation	0	0	0
Land under active rehabilitation	0	0	
Completed rehabilitation	0	0	0

Notes:

1: Includes 0.41ha associated with the extended light vehicle car park, 0.23ha for the downcast ventilation shaft and 0.58ha relating to the upcast ventilation shaft but excludes underground mining areas. Areas that have been temporarily rehabilitated also included.

2: Whilst some areas have been temporarily rehabilitated, all areas within ML 1618 surface infrastructure area are considered to be 'active'.

A wild dog and fox baiting program was undertaken by Enright Land Management in October 2019 in consultation with surrounding landholders.

Within the surface infrastructure area, no permanent buildings were structurally altered, renovated or removed during the reporting period and, other than regular inspection and maintenance of previously temporarily rehabilitated areas (i.e. batter slopes) and retained vegetation, no specific rehabilitation activities were undertaken. Maintenance activities completed included scheduled equipment maintenance, regular security patrols of boundary fencing to prevent unauthorised access, and ongoing control of weeds (e.g. Pampas Grass) across the entire surface infrastructure area.

No rehabilitation trials or research was undertaken during the reporting period and there were no variations to the rehabilitation activities as outlined within the approved Mining Operations Plan.

There are currently no specific issues affecting the ability to successfully rehabilitate the site and therefore no specific management measures.

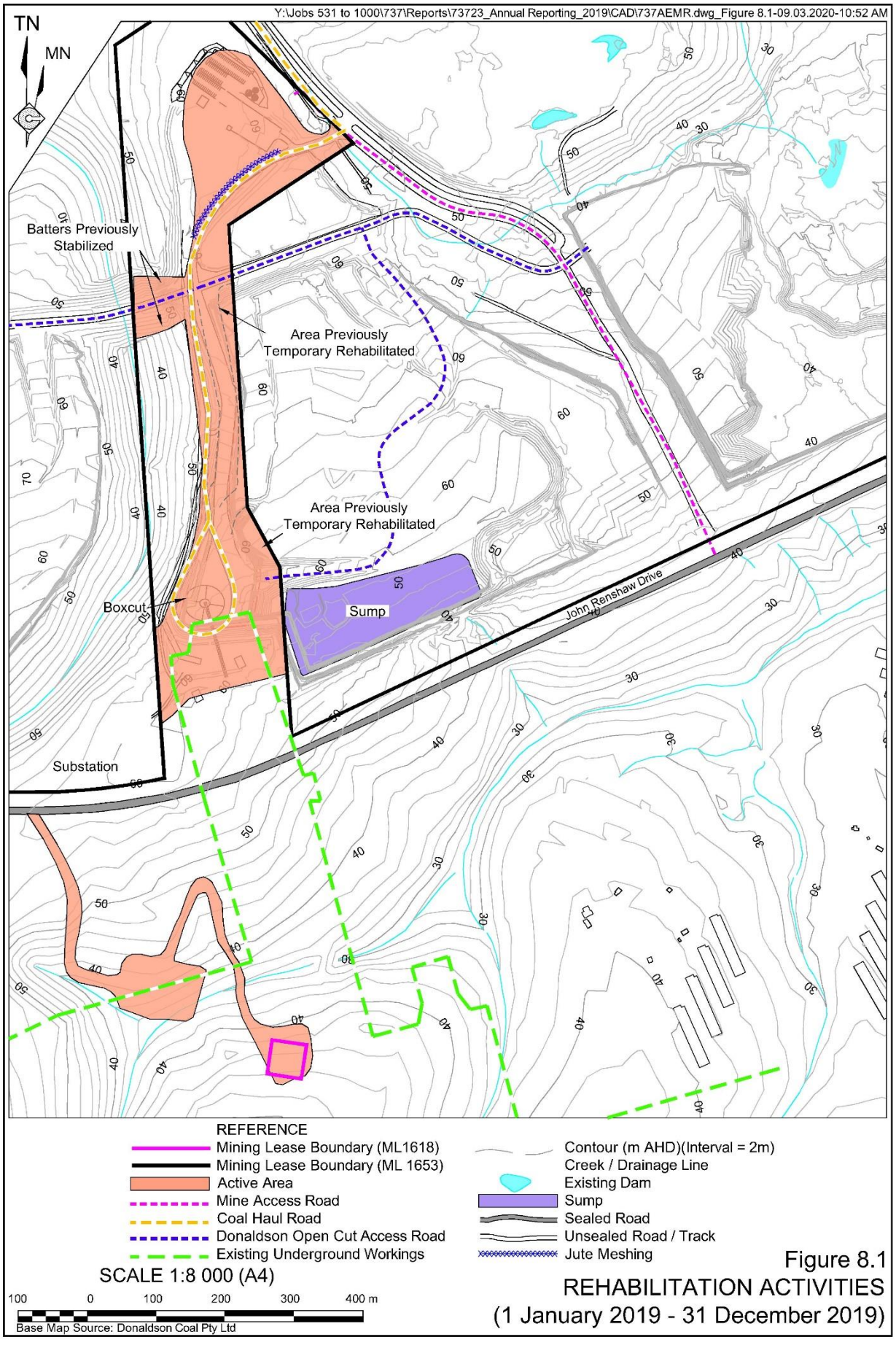


Figure 8.1
REHABILITATION ACTIVITIES
(1 January 2019 - 31 December 2019)

DONALDSONCOAL
Part of the Yancoal Australia Group

No rehabilitation areas became available for sign off by the Resources Regulator and no final land use objectives were met during the reporting period. As the Abel Mine is an underground operation, the only significant rehabilitation will be during mine decommissioning. As outlined within the approved 2019 Mining Operations Plan, during decommissioning the creation of the final landform will involve blasting of the western side of the Abel Box Cut (as part of final landform creation within the West Pit) followed by grading using a dozer to create a maximum slope of 18 degrees. The northern side of the Abel Box Cut will also be blasted and graded to a maximum of 10 degrees, with a permanent vehicle access and egress ramp constructed to allow access to the final void for ongoing monitoring and management.

Surface infrastructure areas located within existing forested areas, such as the substation and ventilation shafts, will be returned to native vegetation. The current post-mining land use goal for the Abel Box Cut is for use as water storage suitable for use in surrounding mining operations.

8.2 ACTIONS FOR THE NEXT REPORTING PERIOD

No specific rehabilitation works are planned during the next reporting period and no major rehabilitation work will be able to be undertaken until the decommissioning of the site. Any surface cracks that appear will be backfilled, compacted, topsoiled and seeded and ongoing repairs to any subsidence damage to public roads will be completed in accordance with the approved subsidence monitoring and management plans. Notably, any further rehabilitation works to Blackhill Road will be completed by the Subsidence Advisory NSW.

Maintenance works, such as erosion and sediment control, and ongoing control of weeds and feral pests will also be undertaken as required.

In addition to these works, a closure strategy will be developed for the West and Square Pits addressing the closure pathways should mining recommence at the Abel Underground Coal Mine or if mining does not recommence.

9. COMMUNITY

9.1 COMMUNITY COMPLAINTS

No complaints were received during the 2019 reporting period. The last complaint was received on 9 October 2017. Since commencement of the Abel Mine, a total of seven complaints have been received which are summarised in **Table 9.1** and presented on the Donaldson website. Given that no further complaints have been received and the Abel Mine is currently under care and maintenance, no specific actions are currently deemed necessary.

Table 9.1
Community Complaints Summary

Location	Date of Complaint	Comments
Blackhill	24/04/2009	Light from Donaldson Open Cut/Abel shining towards house and is very bright. Light was turned down.
EPA	22/06/2015	Complaint about noise from trucks on 5th and 18th June 2015. Advised the EPA officer that there had been no change to truck movements on site and that the recent noise monitoring in May 2015 showed compliance with Licence limits.
Browns Road, Black Hill	17/07/2015	A resident in Brown's Road Black Hill lodged a complaint with the EPA regarding truck noise on 16/07/15 at 20:30hrs. Quebe provided data that trucks were parked up at that time. Advised the EPA officer. No further action.
John Renshaw Drive	3/09/2015	Complaint received regarding sulphur smell for the last month. Complainant told the EPA that it was the mine on John Renshaw Drive that was owned by Ashton company. Advised EPA that there was no odour emanating from site.
Meredith Road Black Hill	1/10/2015	Concerned about subsidence to his property and Meredith Road. Repairs undertaken in accordance with the Property Subsidence Management Plan.
210 Meredith Road Black Hill	2/10/2015	Concerned about subsidence damage to Meredith Road/Blackhill Road. Repairs undertaken in accordance with Property Subsidence Management Plan.
Avalon Drive, Thornton	9/10/2017	Complainant has experienced a "dramatic increase" in coal dust around her property since moving there 4 years ago. Provided response to complainant indicating that this corresponded with the closure and rehabilitation of Donaldson Open Cut. Abel Underground has been placed in Care and Maintenance with no coal mined, processed or transported since mid-2016.
Source: Donaldson Coal		

9.2 COMMUNITY LIAISON

The principal formal community consultation undertaken is the Community Consultative Committee. In accordance with *Schedule 6 Condition 6* of PA 05_0136, the Company has established a Community Consultative Committee for the Abel Mine. During the reporting period, the committee consisted of:

- four representatives of the local community (Mr Alan Brown, Mr Allan Jennings, Mr Terry Lewin, Mr Brad Ure);
- a representative from Bloomfield Colliery (Mr Greg Lamb);
- four representatives from the Company (Mr Tony Sutherland, Mr William (Bill) Farnworth, Mr James Benson and Mr Phillip Brown); and
- a representative from Cessnock Council (Clr Melanie Dagg).

The committee was chaired by Mrs Margaret MacDonald-Hill, an independent chairperson appointed as the independent Chair by the Secretary, Department of Planning and Environment.

The committee held a total of two meetings during the reporting period (4 March and 9 September 2019). The meetings have continued to provide an opportunity for the Company to keep the community up to date with activities undertaken and programmed at the Abel Mine and for community members to table issues relating to the Abel Mine for the Company's consideration. It is noted that the Company provided presentations during each meeting to provide updates on the mine development / care and maintenance, environmental monitoring, subsidence management, planning, and other relevant matters.

Copies of minutes and presentations are available on the Donaldson Coal Website at www.doncoal.com.au.

10. INDEPENDENT AUDIT

The last independent environmental audit of the mine was undertaken in December 2018, in accordance with *Schedule 5 Condition 5* of PA 05_0136 for the period 20 March 2015 to 20 December 2018. The independent audit report was finalised in February 2019 and confirmed that the areas inspected were generally satisfactory and that mining has occurred generally in accordance with the approved mine plan. The audit identified a total of six (6) non-compliances against PA 05_0136 for the audit period, of which four (4) can be considered relevant to the 2018 reporting period (see Section 11). No non-compliances were recorded against ML1683.

A range of recommendations were provided within the audit and a response plan prepared. A status review of these responses is provided in **Table 10.1** and will continue to be updated as part of the Annual Review for the next reporting period.

The next independent environmental audit is due 2021.

Table 10.1
Independent Audit Action Response Plan Status

Ref	Description	Donaldson Response	Timeline	Status Update
Section 4	Annual groundwater reporting in the Abel Mine Annual Review should include graphical presentations of water level data to indicate trends. These should continue to be included in Annual Review's during care and maintenance phase for bores approved in the revised WMP	The Abel Annual Review will continue to provide graphical representation of relevant groundwater bores within the relevant section of the document.	31 March 2019	Graphical summaries were presented in the 2018 Annual Review and are presented in Section 7.3 of this Annual Review.
PA 05_0136 Compliance Recommendations				
Various	Work with relevant regulators to resolve where possible all of the non-compliances.	Accept recommendation and continue to work with regulators to resolve non-compliances.	As and when required	Compliance status update provided in Sections 1 and 11 of this Annual Review.
Sch 3 Cond 1	Blue Gum Creek and Long Gully – Water Quality Recommend for future Trigger Level EC exceedances, assessment of metals (Fe, Al and Mn) are used to assess whether change in EC is mining induced. Trigger values for metals should also be included for Site 10 in Table 3.7 of the WMP. Further consideration of this trigger level in the revised WMP should be undertaken in consultation with a relevant water specialist and relevant regulators in consideration of distance to active mining. Pambalong Nature Reserve – Groundwater Levels Recommend monthly monitoring at Piezometer C081B or in accordance with approved WMP. Further consideration of this trigger level in the revised WMP should be undertaken in consultation with a relevant groundwater specialist and relevant regulators in consideration of distance to active mining. Recommend the following updates to the WMP: • Revision of Piezometer Monitoring Sites for Pambalong Nature Reserve to ensure the piezometer relevant to the feature; and • Clarify Trigger Level 1 and 2 for Groundwater levels for the Pambalong Nature Reserve.	The Water Management Plan will be reviewed and updated in 2019. This update will include a review of trigger actions that determine if a change in water quality is mining induced. Abel Coal Mine will update the Water Management Plan in 2019 and review comments provided by the audit team. A water specialist will, where relevant, incorporate comments into the updated management plan.	30 April 2019	The Water Management Plan was reviewed and updated during the reporting period with DPIE approval received 04 June 2019.

Table 10.1 (Cont'd)
Independent Audit Action Response Plan Status

Ref	Description	Donaldson Response	Timeline	Status Update
PA 05_0136 Compliance Recommendations (Cont'd)				
Sch 4 Cond 10b)	Recommend dust gauges re-sited (if not being removed from program).	A dust gauge audit will be conducted to identify any non-complying dust gauges with corrective actions put in place to ensure compliance. An update to the Air Quality Management Plan will propose the removal of Dust Gauges.	31 March 2019 30 April 2019	The Air Quality Management Plan was reviewed and updated with DPIE approval received 04 June 2019. The updated Plan provides for the cessation of deposited dust monitoring during care and maintenance, thereby removing the need to undertake an audit of the gauges. A variation to EPL 12856 was also submitted with comments on the draft variation returned to EPA on 24 January 2020. Deposited dust monitoring will continue until the EPL variation is finalised.
Sch 4 Cond 23	Coal Transport records are consistently made publicly available on website when production recommences	All coal transport records are up to date to the end of 2018 on the Donaldson Coal Website. This will occur on an annual basis at the start of the new year.	31 January 2019	The 2018 coal transport report is available on the Donaldson Coal website. Further coal transport reports will be uploaded following recommencement of mining.
Sch 4 Cond 24c)	Audit be undertaken to confirm compliance at lighting components which will operate in next period (e.g. CHPP and rail loadout)	On recommencement of mining, including use of the Bloomfield CHPP and Rail Loadout, Abel will recommission currently disused lights for use at night time. At this point, Abel will conduct an audit against AS4282.	When mining recommences	Not yet applicable – mining has not yet recommenced.
PA 05_0136 MOD3 Continual Improvement Recommendations				
Sch 2 Cond 4	Follow up with WaterNSW to resolve Certificate of Title for WAL 41525 being incorrectly labelled to a water source.	WaterNSW will be contacted again in February 2019 to follow up on the Abel Certificate of Title for WAL 41525.	28 February 2019	Water NSW have been regularly followed up regarding resolution of this. Still awaiting correctly labelled certificate with conditions.
Sch 2 Cond 9	Include a statement in the relevant Annual Review that discusses transportation of product coal produced on the Bloomfield site via the Bloomfield Rail Loop, and Rail Spur and the Main Northern Railway.	Accept recommendation and incorporate statement into the 2018/19 Annual Review.	31 March 2019	Commentary included in Section 2.1 of this Annual Review.
Sch 2 Cond 11	Include a statement in the Annual Review that discusses alterations and additions to building and structures.	Accept recommendation and incorporate statement into the 2018/19 Annual Review.	31 March 2019	Statement included in Section 8.1 of this Annual Review.

Table 10.1 (Cont'd)
Independent Audit Action Response Plan Status

Ref	Description	Donaldson Response	Timeline	Status Update
PA 05_0136 MOD3 Continual Improvement Recommendations (Cont'd)				
Sch 3 Cond 1	• "Minor Cliff" definition be clarified on review of EP/management plans.	• Minor Cliff's will be defined in the next update to the Subsidence Monitoring Program required under the Extraction Plan.	When mining recommences	Not yet applicable – mining has not yet recommenced.
	• Whilst mining, AEMR include PA 05_0136 Table 2 and a tabulated summary of impacts and conclusions.	• The 2018/19 Abel Annual Review and future Annual reviews will include a tabulated summary of impacts and conclusions as outlined in Table 2.	31 March 2019	Tabulated summary included in Section 6.8 of this Annual Review.
	• Labelling of Water Quality Monitoring Sites 9 and 10 in AEMR are consistent with that shown in the WMP.	• Water quality labels of sites 9 and 10 will be reviewed and addressed in the 2018/19 Annual Review.	31 March 2019	The labelling on Figure 6.1 of the 2018 Annual Review (and this Annual Review) has been updated.
	• If mining recommences, a clear definition of GDEs in the Hexham Swamp be documented (impacts and monitoring).	• When mining recommences the Water Management Plan (WMP) will require an update. If mining recommences, a definition will be included in the WMP of Groundwater Dependent Ecosystems.	When mining recommences	Not yet applicable – mining has not yet recommenced.
Sch 3 Cond 4p)	Future TARPs include Trigger Levels for Groundwater Drawdown, especially at bores relevant to Pambalong Nature Reserve (excluded from Area 4 EP).	The next update to the Extraction Plan will review the trigger levels for TARPs relating to the Pambalong Nature Reserve.	When mining recommences	Not yet applicable – mining has not yet recommenced.
Sch 3 Cond 6	No written evidence was provided that first working in South Mains were designed to DRG's satisfaction. Recommend a response is sought for any future first workings in accordance with this condition prior to works being undertaken.	On the recommencement of mining, Abel Mine will seek a written response from the relevant authority confirming that first workings are designed to the satisfaction of the DRE	When mining recommences	Not yet applicable – mining has not yet recommenced.
Sch 3 Cond 11	When revising Service Boreholes Management Plan, include mitigation and management measures for visual impacts and compensation for noise, air and visual impacts.	Accept recommendation and incorporate mitigation and management measures into the next update of the Service Boreholes Management Plan.	When mining recommences	Not yet applicable – mining has not yet recommenced.
Sch 4 Cond 1	Remove Location K from PA 05_0136 Table 4 and any other strategy, plan or program.	There is no proposed modification to PA 05_0136 where Location K will be removed. This recommendation will be considered with any future modification.	Noted	No modification currently planned.
Sch 4 Cond 3	Include statement in AEMR that reports on Cumulative Noise Criteria.	Accept recommendation and incorporate into the 2018/19 Annual review.	31 March 2019	Statement included in Section 6.3 of this Annual Review.

Table 10.1 (Cont'd)
Independent Audit Action Response Plan Status

Ref	Description	Donaldson Response	Timeline	Status Update
PA 05_0136 MOD3 Continual Improvement Recommendations (Cont'd)				
Sch 4 Cond 5c)	Clarify noise mitigation process in NMP under meteorological conditions to which noise limits do not apply.	Accept recommendation and incorporate into the 2019 update of the Noise Management Plan.	30 April 2019	The Noise Management Plan was reviewed and updated during the reporting period with DPIE approval received 04 June 2019.
Sch 4 Cond 11	Energy efficiency opportunities for the Abel Underground Mine to be identified, assessed and reported through a series of five year assessment cycles in accordance with the Energy Efficiency Opportunities Act 2006 (EEO Act, 2006).	Energy Efficiencies will be identified in the updated 2019 Air Quality Management Plan. Compliance with the Energy Efficiency Opportunities Act 2006 will be managed by Yancoal Corporate who are the 'controlling corporation' as defined by the EEO Act, 2006.	30 April 2019	The Air Quality Management Plan was reviewed and updated during the reporting period with DPIE approval received 04 June 2019. It is noted that the EEO Act 2006 was repealed in 2014.
Sch 4 Cond 16	Recommend clearly labelling column on water transfer amounts on site spreadsheet e.g. "Transfer from Big Kahuna to Lake Kennerson (ML)" and including pumped volumes in Annual Review.	Accept recommendations and update site water spreadsheet and incorporate into 2018/19 Abel Annual Review.	28 February 2019 31 March 2019	The spread sheet has been updated as recommended. The volume transferred during this reporting period is reported in Section 7.2 of this Annual Review.
Sch 4 Cond 25b)	Recommend that refresher training provided to any personnel on site to ensure that waste management and waste bins handled correctly (see Plates 7, 8, 10, 14, 15 and 18).	A tool box talk will be provided to all operational personnel onsite in March 2019 to outline the correct handling of waste onsite.	31 March 2019	A waste management presentation was presented to all operational personnel in March 2019.
Sch 4 Cond 25c)	Investigate redundant tank (see Plate 19) and respond accordingly. Confirm source of which pipe below operating sewage system to confirm it is benign.	A review of the future requirements for the redundant tank will be undertaken and actions reported in the 2019/20 Annual Review. The contractor that services the sewerage treatment plant (STP) at Abel has been approached to determine the source of the pipe below the STP.	31 March 2019	Site personnel have inspected and do not believe the pipe is connected to the sewage system. Advice was received from the wastewater treatment contractor confirming that the pipe is not associated with the STP but is rather a stormwater pipe draining from the car park. No further actions required.
Sch 4 Cond 26a)	Bush Fire Response Procedure Section be added to site induction presentation at next review.	The Abel Site Familiarisation Induction currently covers the Emergency Muster Area and what to do in the event of an emergency. It also covers fire equipment onsite.	Noted	No further action required.

Table 10.1 (Cont'd)
Independent Audit Action Response Plan Status

Ref	Description	Donaldson Response	Timeline	Status Update
PA 05_0136 MOD3 Continual Improvement Recommendations (Cont'd)				
Sch 4 Cond 29e)	Complete mine closure plan at least 5 years prior to closure or consent expiry date.	Accept recommendation and complete Mine Closure Plan 5 years prior to closure.	Noted	Currently no further action. Mine is currently in care and maintenance. Consent does not expire until 2030.
Sch 6 Cond 1f)	Recommend adding links to EMS attached documents or including as appendix to EMS.	Accept recommendation and on next update of the EMS, provide a link to the 'Abel Management Plans' page on the Donaldson Coal website.	Next update of the EMS	The Environmental Management Strategy (dated August 2018) has yet to be updated but will be reviewed during the next reporting period.
Sch 6 Cond 2	Condition list made into a table and included in each revised management plan during care and maintenance and demonstrate where each is addressed.	Accept comments and incorporate into future updates of Management Plans.	30 April 2019	The review and update of various management plans was completed and the plans approved 4 June 2019. The updated plans include a summary of relevant requirements and where each is addressed in the plan.
SOCs	Recommended that at next project approval modification (if mining recommences), a full review of the SOCs are undertaken and any commitments which are duplicative of development consent conditions are sought to be removed with a relevant justification.	Accept comment and action in the next modification of Abel Coal.	When mining recommences	Not yet applicable – mining has not yet recommenced.
Management Plans	Most plans required update for care and maintenance status. Detail in table A and B should be considered during this review. The plans would all benefit from clarification of what responsibilities are Bloomfield's (CHPP and rail loadout) and which are care and maintenance activities and as such the responsibility of Abel Mine. Some of the changes will be inconsistent with the SOCs which include significant detail which is more suited to inclusion in the management plans. An appendix should include evidence of consultation with relevant regulators for each plan. Address recommended changes to each plan as listed in Table A of Appendix D. The RMP should include confirmation of where topsoil is stored and confirmation that adequate volumes exist to achieve the nominated final land use.	Abel Coal Mine will update relevant management plans in 2019 and review comments provided by the audit team and where relevant, incorporate comments into the updated management plans. Updated plans will be specific for Care and Maintenance and include a clarification of the responsibility boundaries between Abel and Bloomfield. A summary of management plan status will be included in the Abel 2019/20 Annual Review.	30 April 2019 31 March 2020	The review and update of various management plans was completed with agency comments addressed and final approval sought from DPIE 4 June 2019. A summary of the management plans is provided in Section 4.2 of this Annual Review.

Table 10.1 (Cont'd)
Independent Audit Action Response Plan Status

Ref	Description	Donaldson Response	Timeline	Status Update
EPL12856				
A1	Recommend that consideration be given to a variation to reduce the 'coal works' scale as mine in care and maintenance status. This assumes that CHPP and rail loadout facilitates are included in Bloomfield's EPL.	Abel will review this recommendation and determine the benefits of a license variation. A variation will be applied for if it is determined there is a benefit in reducing the scale of coal works on the sites license.	Noted	Comments on draft EPL variation returned to EPA 24 January 2020. Awaiting final issue of varied EPL.
P1	Recommend updating this condition when management plans updated. Consideration should be given to seek reduction or removal of depositional dust gauges from program.	A variation to the locations of monitoring sites was submitted to the EPA in 2018. The variation is currently being assessed by the EPA. Further review of locations within site management plans may trigger another variation if required.	Noted	Comments on draft EPL variation returned to EPA 24 January 2020. Awaiting final issue of varied EPL.
L2	Recommend updating noise monitoring locations and meteorological condition limit wording to make consistent with those shown in PA 05_0136 whilst operational.	A review of the noise monitoring locations and meteorological condition limit wording will be conducted with the update to the Noise Management Plan.	30 April 2019	The Noise Management has been updated and removes location K from the active monitoring locations. Whilst noise limits are specified within EPL 12856 for additional locations it does not specify that noise must be monitored at every (or any) location. Therefore, there is no inconsistency with the updated Noise Management Plan. Notwithstanding, noise monitoring has been requested to be removed from the EPL. Awaiting final issue of varied EPL
O4	Seek removal/amendment to condition O4.2 as no sprays are utilised by the septic system.	There is no plan to remove condition O4.2 from the EPL. Abel Coal may utilise sprays in future adjustments to the Sewerage Treatment Plant.	Noted	No further action required.
U1.3-1.5	Recommend requesting U1 removed at next variation as it has been completed	Accept recommendation and incorporate into the next EPL variation.	Noted	Comments on draft EPL variation returned to EPA 24 January 2020 requested removal of this condition. Awaiting final issue of varied EPL
ML1618				
11	Date of when mine entered Care and Maintenance is reported in the Annual Mining Lease Group Exploration report as being 02 May 2016, this date is not consistent with other reports e.g. the 2017 AEMR states mine entered care and maintenance on 28 April 2016. Recommend updated in next report.	Accept and incorporate into the next Annual Mining Lease Group Exploration report or Annual Review dependent on a review of the agreed date	31 March 2019	The official date the Abel Mine entered care and maintenance has been confirmed as 2 May 2016. This is reflected in the 2018 and 2019 Annual Reviews and will be reflected in future reporting.

11. INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

During the reporting period there were no:

- reportable incidents or exceedances; or
- official cautions, warning letters, penalty notices or prosecution proceedings.

As discussed in Section 5, a Section 240(1)(c) notice was received directing the Company to undertake a range of actions. This notice is not a non-compliance or penalty notice. The status of the required actions is discussed in **Table 5.1**.

One administrative non-compliance was recorded for the reporting period. PA 05_0136 Schedule 2 Condition 11 requires that all new buildings and structures, and any alterations or additions are constructed in accordance with the relevant requirements of the BCA. Whilst Construction Certificates have been received for buildings within the surface infrastructure area, the Occupation Certificates have not yet been received. The certifying body inspected once and requested changes prior to issuing the Occupation Certificate. The requested changes have been made and the certifying body requested to reinspect. However, the certifying body has not yet issued the final certificate. This will continue to be followed up.

12. ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

As outlined in Section 4.3, a range of monitoring, including surface water, groundwater, flora and fauna and subsidence monitoring are planned during the next reporting period. This monitoring represents the monitoring approved through the updated management plans for care and maintenance. Notwithstanding, the need for and frequency of monitoring is to be continually reviewed together with corresponding management plans to ensure that an appropriate level of monitoring and management during care and maintenance is undertaken.