

ASSESSMENT REPORT

ABEL COAL MINE

Upcast Ventilation Shaft Modification (05_0136 - MOD 2)

1 BACKGROUND

Donaldson Coal Pty Limited (Donaldson) has approval to establish and operate the Abel Coal Mine, at Black Hill, approximately 23 kilometres (km) northwest of Newcastle (see Figure 1). The majority of the mine is located in the Cessnock local government area (LGA), with minor components located in the Maitland and Newcastle LGAs.



Figure 1: Location of the Abel Coal Mine

The Abel Coal mine was approved by the Minister for Planning in June 2007 (see Appendix A). This project approval (05_0136) allows Donaldson to:

- extract up to 4.5 million tonnes per annum (Mtpa) of run-of-mine coal by bord and pillar mining methods;
- transport this coal to the existing Bloomfield Coal Handling and Preparation Plant (CHPP), using private haul roads;
- operate the Bloomfield CHPP to process coal extracted from the Abel Coal Mine and also the nearby Bloomfield and Donaldson coal mines; and
- rehabilitate the site.

Since receiving approval, Donaldson has undertaken the construction of the Abel mine facilities, including temporary surface buildings and infrastructure, the excavation of a box cut for the mine's entries and a coal conveyor from the box cut to the run-of-mine coal stockpile. Coal extraction commenced in late 2008.

The project approval was modified in June 2010 (05_0136 MOD 1), allowing Donaldson to construct and operate a downcast ventilation shaft. The ventilation shaft was required to provide additional air to the mine to support the expansion of the underground operations.

2 PROPOSED MODIFICATION

On 16 March 2011, Donaldson submitted an application seeking to modify the project approval under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposed modification involves installing an upcast ventilation shaft and fans, and constructing and using a power supply to these fans. The ventilation shaft is required to supply additional air to the mine to support the ongoing development of the mine's underground workings. The shaft would be located approximately 250 metres (m) south of John Renshaw Drive, with access to the site along existing bush tracks (see Figure 2).

The top of the ventilation shaft would have fans installed to draw out stale air from the mine (ie it is an 'upcast' shaft). As air is drawn through the underground workings it becomes contaminated with carbon dioxide, dust and other pollutants. A 'downcast' shaft, introducing fresh air to the mine, has already been approved and constructed. The existing air intake is at the mine's box cut portal, which is associated with a high velocity for the intake air. This increases the risk of picking up dust from underground roadways and conveyor belts, which can contaminate the fresh intake air. The additional intake airway would minimise the velocity of air flow within the underground workings and thereby enhance the comfort and safety of mine workers. It would also reduce pressure loss for air entering the mine, as less distance is required for the air to travel to the working areas.

The shaft would be constructed using the 'raise bore' method, where a pilot hole is first drilled from the surface to the underground workings. The shaft is then excavated upwards to the surface, by a drill rig located at the surface. Excavated material would be removed via the existing underground workings. Use of the raise bore method would minimise surface disturbance, construction noise and traffic impacts. The shaft would be 40 m deep and 5.5 m in diameter. It would be lined with concrete and finished with a concrete collar on the surface. Two large centrifugal fans (including one relocated from the box cut portal) would be installed on the surface along with two electrical switch rooms. Power would be provided to the ventilation fans by extending the existing underground power cable located under John Renshaw Drive. A 26 week construction schedule is proposed. The proposal is explained in more detail in the attached Environmental Assessment (see Appendix B).

3 STATUTORY CONTEXT

Approval Authority

The Minister for Planning was the approval authority for the original project application, and is consequently the approval authority for this modification application. However, under the former Minister's delegation of 25 January 2010, the Deputy Director-General, Development Assessment and Systems Performance, may determine the modification application.

Modification

The proposed modification involves minor earthworks and constructing and using an upcast ventilation shaft and power supply corridor. It does not involve changing the mining or

transportation components of the approved project. The Department is satisfied that the proposed modification is within the scope of section 75W of the EP&A Act.

Consultation

Under section 75W, the Department is not required to undertake consultation or exhibit the modification application. However, after accepting Donaldson's modification application and Environmental Assessment (EA), these documents were made publicly available on the Department's website. No public or agency submissions were received in response.

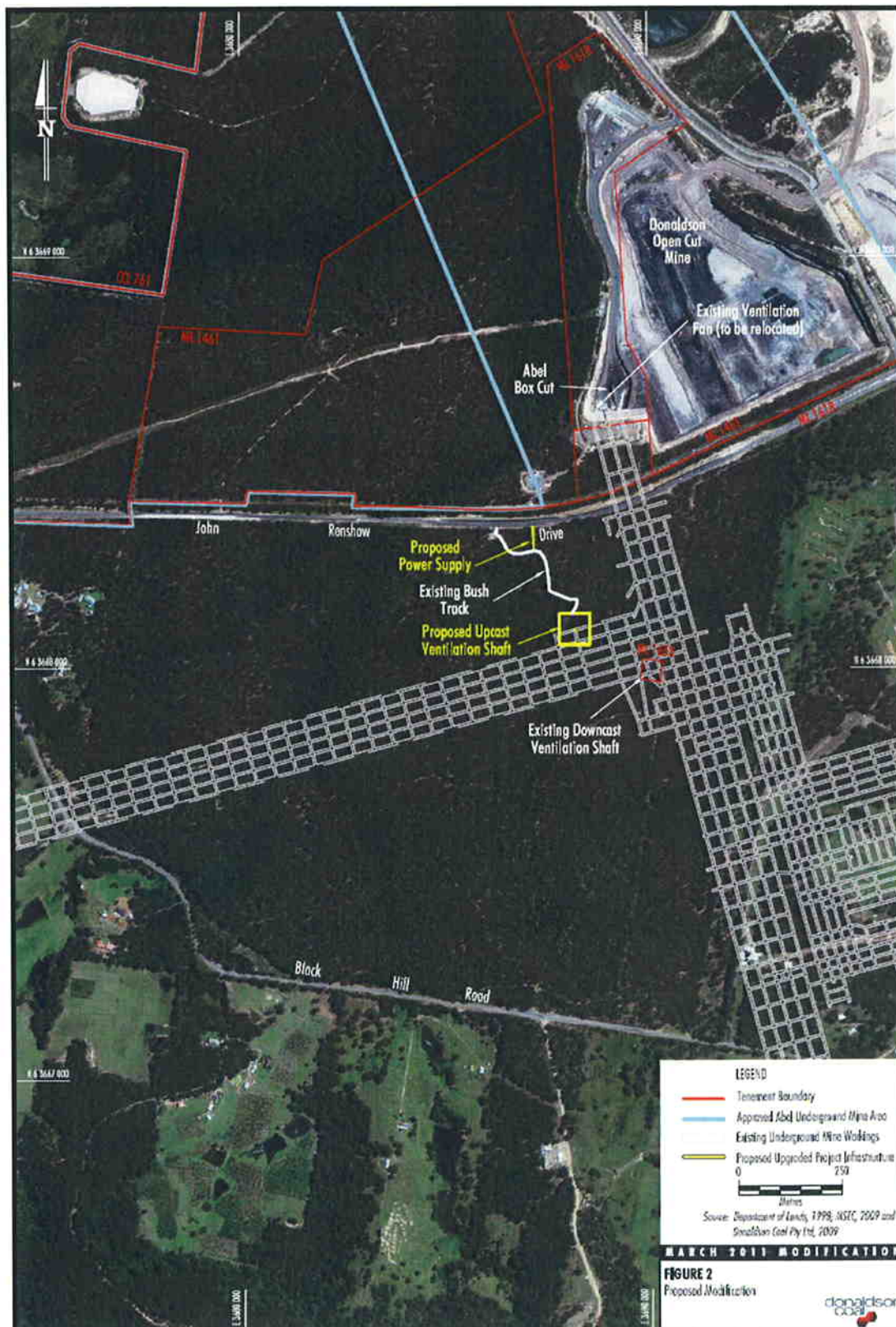


Figure 2: Location of proposed shaft and power supply route

4 ASSESSMENT

The Department has assessed the potential impacts of the proposed modification. Table 1 details this assessment.

Table 1: Assessment of environmental impacts

Issue	Consideration and Conclusion
Flora & Fauna	The proposed shaft site and power supply are both located within Lower Hunter Spotted Gum – Ironbark Forest, which is listed as an endangered ecological community under the <i>Threatened Species Conservation Act 1995</i>. No threatened flora species were recorded within the modification area, and no impacts on threatened flora are expected. An area of approximately 75 m x 75 m would need to be cleared for the ventilation shaft site. A corridor approximately 3 m x 60 m would be cleared to enable a new power cable to be laid from John Renshaw Drive to the existing bush track (see Figure 2). This track may need to be graded and levelled to improve access, but not widened or further cleared. A total area of 0.58 hectares (ha) of vegetation would need to be cleared to construct the shaft and power supply. The EA includes an Ecology Survey and Assessment Report, including a 7 part test assessing the impact of the proposed works, which concludes that this clearing would not lead to a significant impact on this community. The proposed shaft site is located within the 662 ha Donaldson Coal Bushland Conservation Area (Donaldson BCA), implemented in accordance with Donaldson Coal Mine's development consents (DA 98/01173 and 118/698/22). The Donaldson BCA is required to maintain a ratio of '2:1 in terms of compensatory habitat to the area to be directly impacted by mining and associated infrastructure' at the Donaldson Coal Mine. There are approximately 318 ha of approved disturbance within the Donaldson mine site (an offset ratio of 2.081 to 1). Clearing of 0.58 ha of the BCA can therefore take place while still maintaining the offset ratio required under the Donaldson consents (the offset ratio would reduce from 2.081 to 2.08). Donaldson would revise its BCA Management Plan to reflect the proposed modification. In the circumstances (of Abel and Donaldson being adjacent mines owned by the same parties, the maintenance of the required Donaldson offset ratio, and the small area of clearing associated with the modification), the Department is satisfied that no further offset is required and that current consent conditions and the revised BCA Management Plan would adequately manage flora and fauna impacts.
Noise	Since noise monitoring of the Abel Underground Mine commenced in 2008, noise emissions from the mine have been generally inaudible at all residential locations and have been compliant with relevant noise limits. The EA contains a qualitative assessment of potential construction noise and operational noise impacts, conducted by SLR Consulting (Heggies). Construction activities are not expected to impact on any residence, with the closest residence approximately 1.2 km to the east of the proposed shaft site. OEH's recommended standard construction hours and construction noise emission criteria would apply during the 26 week construction period. The raise bore drill rig would be partially enclosed in an acoustically-designed shed to provide noise screening to the nearest affected receivers. Use of the raise bore drilling method would minimise noise emissions, however drilling of the shaft would be undertaken 24 hours a day, seven days per week. The remainder of construction activities (eg installation of surface infrastructure) would be limited to daytime hours. The overall construction period is expected to be about 26 weeks. Operational noise emission criteria would apply outside of standard construction hours. Donaldson is confident that impacts from

	this drilling would remain within the relevant noise limit. However, as a precaution, Donaldson would undertake attended and unattended continuous noise monitoring during the construction period to allow it to quickly respond should the relevant noise limit be exceeded. Should monitoring indicate that the construction noise levels exceed noise criteria, then construction activities would be immediately stopped by Donaldson until noise mitigation is implemented to achieve compliance. It is expected that the underground operations, including the operation of the new ventilation fans, would continue to meet the project's operational noise criteria at all monitoring locations under all meteorological conditions. Monitoring location D (Black Hill Public School) is identified as the only monitoring location that would be impacted by increased noise due to the operation of the proposed shaft. It is predicted that noise levels at this location would increase by 1 dB(A) under north-westerly winds, but only during the night-time period. This impact is considered negligible as the School will not be occupied during this period and the total noise level of 31 dB(A) will continue to satisfy the project's operational noise criteria of 36 dB(A) at this location. The Department is satisfied with the level of noise assessment undertaken for the modification and agrees that both construction and operational noise impacts would be negligible. No amendment to the conditions for managing noise impacts is considered warranted.
<i>Air quality</i>	The proposed earth works may cause some generation of dust. However, the raise bore method of construction would significantly reduce the likelihood of air quality impacts during construction. The two closest receivers are located approximately 1.3 km to the west and southeast of the site. The total amount of air to be ventilated from the mine remains unchanged from that assessed by the Abel Underground Mine EA. No dust, odour or other air quality impacts are expected from the operation of the upcast ventilation shaft. The Department considers that any impact would be negligible, and Donaldson's approved Air Quality Management Plan would continue to be applied to manage air quality impacts. The Department considers no additional conditions of approval are required.
<i>Water Management</i>	Sediment and erosion controls would be implemented at the shaft site in accordance with Donaldson's approved Erosion and Sediment Control Plan. The Department is satisfied that the proposed modification would have a negligible impact on water management and soil erosion and no additional conditions of approval need to be applied.
<i>Aboriginal Heritage</i>	Donaldson surveyed the shaft and power supply sites and did not locate any Aboriginal artefacts. Nevertheless, a member of the Mindaribba Local Aboriginal Land Council would be on site during clearing for the shaft and power supply, in accordance with Donaldson's approved Aboriginal Cultural Heritage Management Plan.
<i>Other Issues</i>	All other issues are considered to have negligible environmental impacts and not to warrant further assessment.

5 RECOMMENDED CONDITIONS

The Department has recommended modified conditions of approval for the Abel Coal Project that require the modification to be constructed and used as proposed in the environmental assessment submitted in support of the modification application. Donaldson has reviewed and accepted the proposed conditions.

6 CONCLUSION

The Department has assessed the modification application in accordance with the relevant requirements of the EP&A Act, including the objects of the Act. The Department is satisfied that the proposed modification would:

- assist in ventilating the Abel underground workings; and
- result in negligible changes to the approved project's environmental impacts.

On this basis, the Department is satisfied that the proposed modification is justified, and should be approved.

7 RECOMMENDATION

It is RECOMMENDED that the Deputy Director-General, Development Assessment and Systems Performance:

- **consider** the findings and recommendations of this report;
- **determine** that the proposed modification is within the scope of section 75W of the EP&A Act;
- **approve** the proposed modification under section 75W of the EP&A Act; and
- **sign** the attached Notice of Modification (Tag A).


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APPENDIX A: 05_0136 PROJECT APPROVAL

APPENDIX B: ENVIRONMENTAL ASSESSMENT

See the attached CD.