

# Upper Hunter Mining Dialogue

Final and Temporary Rehabilitation Principles and Commitments

## REPORT BY YANCOAL

(including Hunter Valley Operations and Mt Thorley Warkworth)

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**Upper Hunter  
Mining Dialogue**

## Final and Temporary Rehabilitation Principles and Commitments

### Introduction

The nine coal producers of the Upper Hunter, through the Upper Hunter Mining Dialogue have agreed to this set of principles and commitments with regard to final and temporary rehabilitation. The Principles and Commitments have been developed with advice and guidance from the UHMD Joint Working Group – Land Management which is a stakeholder and industry group.

The Upper Hunter Mining Dialogue has two five-year goals with regard to land management:

- *Goal 1 To decrease the time that disturbed areas are left without final or temporary cover, recognising that different mining operations are at different points in rehabilitation.*
- *Goal 2 To achieve a consistent level of best practice, quality, integrated rehabilitation – both within the industry and with future land uses - across the Upper Hunter and to be a responsible steward of the land.*

The primary focus of the Rehabilitation Principles and Commitments is to contribute to Goal 1. A number of other projects are underway to progress Goal 1. The industry participants in the UHMD acknowledge the importance of clear goals for rehabilitation developed through consultation with community and regulators, continuing to improve rehabilitation techniques and sharing innovative and successful rehabilitation techniques within the industry. Projects under Goal 2 focus on continuous improvement of rehabilitation practices.

### Principles and Commitments

The Upper Hunter coal producers will publicly report against the Principles and Commitments on an annual basis. The reporting will be aggregated by the NSW Minerals Council and shared with the community. Table 1 sets out the six principles and provides a description of how each will be reported against.

**Table 1 – Principles and Commitments**

Principle	Reporting
<p><b>Principle 1 – Include rehabilitation planning in mine planning</b></p> <p><i>Planning for rehabilitation should be integrated into the mine planning process and should include allocating adequate and dedicated resources to achieve the planned rehabilitation outcomes.</i></p>	<p>Planning for progressive rehabilitation is built into all phases of mine planning from Life of Mine Planning to Annual Operating Plans. The mine planning teams at each site are accountable for identifying sufficient areas of mine dumps that can be completed and released for rehabilitation each year to meet the rehabilitation commitments specified in the respective Mining Operations Plans (MOPs).</p> <p>Progress against the dump release schedule is tracked through the year by the site management teams to ensure that areas for rehabilitation are available early enough to allow rehabilitation to be completed before the end of the reporting period. Reporting of rehabilitation progress for each stage of rehabilitation i.e. dump released, bulk shaped, topsoil spread and sown is undertaken monthly to allow tracking against the schedule for each activity.</p> <p>Rehabilitation activities are undertaken by a combination of mine and contracted equipment across the various sites. Equipment requirements for rehabilitation activities are scheduled as part of developing the annual operating plans and are budgeted for accordingly.</p> <p>An initiative which continues to help HVO and MTW achieve their rehabilitation targets is planning in to have additional dump areas released and bulk shaped for later-stage rehabilitation work to commence early in the following year. This carrying over of bulk shaped areas allows the rehabilitation workload to be spread throughout the year and means a relatively consistent equipment fleet can be utilized. At the start of 2017, 37ha and 32ha of bulk shaped area was carried over at HVO and MTW respectively.</p> <p>HVO and MTW engage the same principal contractor for rehabilitation works which, given their close proximity, allows rehabilitation equipment to move between the two sites as the workload fluctuates.</p> <p>HVO and MTW have engaged specialized agricultural and restoration contractors to perform work associated with the final stages of rehabilitation i.e. soil preparation, weed control, seed collecting/harvesting and sowing. The expertise and equipment provided by these contractors is helping to improve the quality of the rehabilitation.</p>
<p><b>Principle 2 – Undertake progressive rehabilitation</b></p> <p><i>Companies should undertake rehabilitation progressively, with the objective of ensuring that rehabilitation is as close as possible to active mining.</i></p>	<p>Yancoal aims, where possible, to have the amount of rehabilitation exceed disturbance.</p> <p>During 2017, this was achieved at both HVO and MTW. The combined rehabilitation total of 227.2ha, was 79.4ha more than the total disturbance undertaken during 2017 of 147.8ha.</p> <p>An accelerated rehabilitation plan for the southern end of Warkworth Mine was developed in mid-2014 and submitted to</p>

Principle	Reporting
	<p>Planning &amp; Environment. The Plan details how rehabilitation in this area will progress between 2014 and 2018.</p> <p>For the period 2014 to 2017 the Plan committed to 124.7 ha of rehabilitation being completed. The actual rehabilitation amounts to 158.8 ha, which is 34.1 ha ahead of the planned progress.</p>
<p><b>Principle 3 – Minimise time that disturbed areas are left without vegetation</b></p> <p><i>Companies should actively seek to minimise the time that land is left without cover during mining. This should include:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Taking steps to ensure that rehabilitation is commenced within 12 months of land becoming available for rehabilitation</i></li> <li>▪ <i>Utilising methods of temporary rehabilitation<sup>1</sup>, such as aerial seeding of overburden and other disturbed areas where permanent rehabilitation has not commenced.</i></li> </ul>	<p>Rehabilitation targets have been set such that rehabilitation is required to commence soon after the dump areas are completed in order to meet the annual rehabilitation targets. The delay between areas becoming available for rehabilitation and commencement of rehabilitation activities is typically less than 2 months.</p> <p>Yancoal undertook aerial seeding across 359.3ha of disturbed land during 2017 to establish temporary vegetative cover on overburden dumps that are not yet available for final rehabilitation.</p> <p>Since 2012, HVO and MTW have been sowing vigorous cover crops as the first stage of rehabilitation to provide quick stability and protection from wind and water erosion. The cover crop stubble is utilized as a mulch layer to stabilize the soil surface in readiness for sowing the long-term seed mixes.</p>
<p><b>Principle 4 – Prioritise areas of rehabilitation and temporary cover to reduce impacts</b></p> <p><i>Companies should prioritise rehabilitation and temporary cover in those areas where leaving land exposed will have the most impact. The following areas should be considered to have priority:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Areas that have the greatest impact on visual amenity, such as areas that face townships, residences, or the highway</i></li> <li>▪ <i>Areas that have the potential to generate dust leaving the site</i></li> <li>▪ <i>Areas that are important for biodiversity, such as</i></li> </ul>	<p>Coal &amp; Allied aims to rehabilitate disturbed areas as soon as practically possible to assist in improving the visual amenity and reduce dust impacts. Measures undertaken during 2017 to reduce impacts in priority areas included:</p> <p><b>HVO</b></p> <ul style="list-style-type: none"> <li>• 22ha of rehabilitation completed on outer slopes of Cheshunt which are visible from Lemington Road (<b>see Figure 1 and 2</b>).</li> <li>• 6ha of rehabilitation completed on areas above Riverview Void which is adjacent to Golden Highway.</li> <li>• 10.9ha of rehabilitation completed on the outer slopes of Glider Pit which are adjacent to both the Hunter Valley Glider Club and Comleroi Road.</li> </ul> <p><b>MTW</b></p> <ul style="list-style-type: none"> <li>• 27.8ha of rehabilitation completed on outer slopes of South Pit North and South Pit South which are visible from the</li> </ul>

<sup>1</sup> Temporary rehabilitation describes reshaping, revegetation and other rehabilitation techniques that are used for purposes other than final rehabilitation. This includes such initiatives as seeding overburden emplacement areas to reduce erosion, which are only temporary.

Principle	Reporting
<i>rehabilitation adjoining or providing connectivity to remnant vegetation.</i>	<p>Golden Highway, Putty Road and residences to the east of Warkworth mine (<b>see Figure 3</b>).</p> <ul style="list-style-type: none"> <li>• 10.5ha of rehabilitation completed on outer slopes of North Pit North which are visible from the Golden Highway (<b>see Figure 4</b>).</li> </ul>
<p><b>Principle 5 – Meet target for rehabilitation progress identified in the Mining Operations Plan</b></p>	<p>2017 rehabilitation performance against MOP targets:</p> <p><b>HVO</b> – Actual rehabilitation 103.2ha versus a MOP target of 199.2ha  <b>MTW</b> - Actual rehabilitation 124.0ha versus a MOP target of 107.1ha</p> <p>MTW exceeded their MOP rehabilitation target during 2017. HVO was 96ha below their MOP rehabilitation target during 2017. However, the net rehabilitation (rehabilitation minus rehabilitation disturbance) at HVO is exceeding the MOP target by approximately 100ha due to significantly lower rehabilitation disturbance over the MOP period 2015 to 2017.</p>
<p><i>Each company should meet the annual target for rehabilitation quantity (area) set in the Mining Operations Plans for each of its mines.</i></p>	
<p><b>Principle 6 – Set quality targets for rehabilitation in the Mining Operations Plan and implement a monitoring program to measure performance</b></p>	<p>The Mining Operations Plans for HVO and MTW include performance criteria which will serve as quality targets for rehabilitation. Performance criteria have been developed for each stage of rehabilitation (i.e. Decommissioning, Landform Establishment, Growth Medium Development, Ecosystem and Land Use Establishment and Ecosystem and Land Use Development); and for the various types of rehabilitation that are being undertaken (i.e. grazing land, cropping land, native woodland etc). Rehabilitation monitoring programs have been implemented at HVO and MTW to monitor performance of rehabilitation against the MOP criteria.</p>
<p><i>Each company should include quality targets for the various types of rehabilitation in the Mining Operations Plan for each of its mines. A monitoring program to measure the performance of rehabilitation areas against the quality targets should be implemented at each of its mines.</i></p>	

**Contextual information**

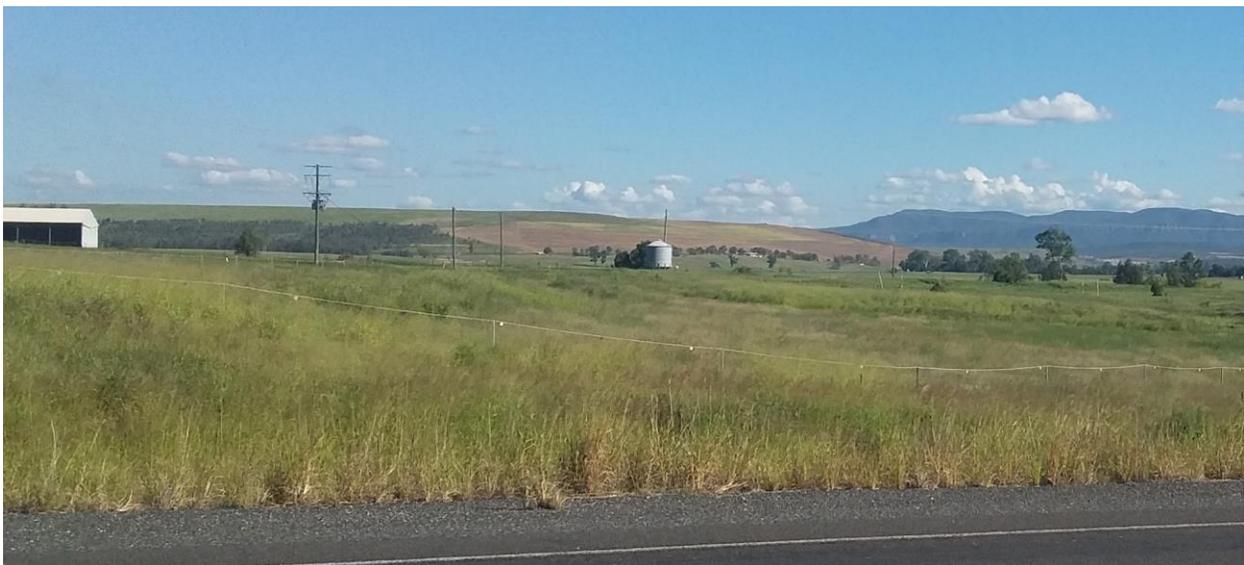
<p><i>This section provides an opportunity for each company to provide some commentary or contextual information regarding their reported results. Such information could include advice on:</i></p> <ul style="list-style-type: none"> <li>- <i>Any material changes to the site (i.e. expansions, acquisitions or divested assets);</i></li> <li>- <i>Why any figures may have changed since the last reporting period</i></li> </ul>	<p>N/A</p>
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### Future rehabilitation priorities

<i>This section provides an opportunity for each company to provide details on rehabilitation activities at their site/s for the upcoming year.</i>	N/A
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**Figure 1.** View of rehabilitation on outer slopes of dumps at HVO Cheshunt. Photograph taken from a vantage point on Lemington Road, Ravensworth.



**Figure 2.** View of rehabilitation on outer slopes of dumps at HVO Cheshunt. Photograph taken from a vantage point on Lemington Road, Ravensworth.



**Figure 3.** View of rehabilitation in MTW South Pit North and South Pit South undertaken between 2013 and 2017. Photograph taken from Hambleton Hill, Singleton.



**Figure 4.** View of rehabilitation on outer slopes of dumps at MTW North Pit North. Photograph taken from a vantage point on the golden Highway.