

Chapter 3

Rehabilitation, regulation, and planning

Rehabilitation

3.1 Rehabilitation is a key aspect of mining industry regulation. Submitters and witnesses opposed to mining in the Liverpool Plains and the Darling Downs claimed that existing rehabilitation methods are inadequate. Generally, those opposed to mining could not see any circumstances where mining and agriculture could coexist due to their lack of faith in existing rehabilitation measures. When asked if there were any circumstances in which she would support mining in the region, Mrs Blomfield stated:

In the case of open-cut mining I would say no, because of what I have just explained about the contaminants. If we knew there was an absolute guarantee that, in the case of the longwall mining, no water would be lost from any sort of aquifer then maybe, but I cannot see how that guarantee could be given.¹

3.2 The ASSSI submission argued that the Australian mining industry had developed the technology to successfully rehabilitate diverse landscapes.² However, their submission did acknowledge that rehabilitated open-cut mines in Queensland and NSW were, in most cases, returned to a state for grazing or forestry rather than cropping.³ The ASSSI argued that there are currently no examples from Australia where soils of the type typically found on the Liverpool Plains and the Darling Downs have been successfully reinstated.⁴ While there were examples from the United States of America and Germany of the rehabilitation of agricultural land, these soils had a much lower clay content (around 35%) than the Liverpool Plains and the Darling Downs (around 70%).⁵ The ASSSI stated that:

If the community, industry and government believe that mining should proceed in the Darling Downs and Liverpool Plains, but that the land should be returned to its original productivity following mining, then experience from both Germany and the USA shows clearly that the entire depth of the soils need to be conserved and replaced (particularly to retain the plant available water capacity). [The] Vertosols of the Darling Downs and Liverpool Plains...are commonly 1.0 – 2.0 m deep...⁶

1 Mrs Kirrily Blomfield, *Proof Committee Hansard*, 28 September 2009, p. 23.

2 Australian Society of Soil Scientists Incorporated, *Submission 24*, p. 4.

3 Australian Society of Soil Scientists Incorporated, *Submission 24*, p. 4.

4 Australian Society of Soil Scientists Incorporated, *Submission 24*, p. 4.

5 Australian Society of Soil Scientists Incorporated, *Submission 24*, p. 4.

6 Australian Society of Soil Scientists Incorporated, *Submission 24*, p. 4.

3.3 The ASSSI further argued that:

In order to return the soil close to its original state (and cropping potential), the entire soil profile would have to be cut into layers of the order of 25-30 cm which would have to be stockpiled separately and then replaced, in order, after mining. Mixing of the soil profile would result in depression of crop yields due to the increased salinity and ESP in the upper layers. Additionally, the stockpiling of soil, which would be necessitated because of the restraints of the mining process, would result in organic matter breakdown in the surface layer and in the dispersion and erosion of the subsoil layers.⁷

3.4 The ASSSI submission concluded that the potential impacts of mining on the cropping soils of the Liverpool Plains and Darling Downs and surrounds would include a reduction in the yield potential of the reinstated soil, loss or reduction of underground water supplies and dust impacts on surrounding crops.⁸

3.5 The ASSSI's position was echoed by the Sustainable Minerals Council who argued that Australia has only very limited experience in the rehabilitation of agricultural soils.⁹ The Sustainable Minerals Council further stated:

To ensure a successful re-use of rehabilitated land for agriculture, the re-building of (mined) soils has to be well understood and tested. Thorough and detailed rehabilitation research programs will be required to demonstrate that mining prime agricultural land is only a temporary cessation to agricultural production and that disturbed landscapes and soils can be re-constructed to pre-mine capability and productivity.¹⁰

3.6 The Friends of Felton confirmed their scepticism about the possibility of returning stored topsoil to its former cropping capacity by stating their understanding that Felton's soil types could not be rehabilitated through the storage and relaying of topsoil.¹¹ The Friends of Felton stated that:

The fact of the matter is that they are completely removing a hill. The topsoil on that is very complex and can vary every 15 centimetres. They have talked about taking the soil off, stockpiling it and returning it in layers, as it was when they removed it. Evidence suggests that as soon as you remove that soil it will lose its structure. It will lose its inherent nature, so

7 Australian Society of Soil Scientists Incorporated, *Submission 24*, p. 4.

8 Australian Society of Soil Scientists Incorporated, *Submission 24*, p. 4.

9 Sustainable Minerals Council, *Submission 32*, p. 4.

10 Sustainable Minerals Council, *Submission 32*, p. 4.

11 Mrs Vicki Green, Member, Friends of Felton Inc, *Proof Committee Hansard*, 29 September 2009, p. 30.

when it is put back it will not return immediately. It will take significant years, if it happens at all.¹²

3.7 The Queensland Murray-Darling Committee supported this assessment and confirmed they were also sceptical about the potential for quality soils to be rehabilitated to a croppable status.¹³ The Queensland Murray-Darling Committee concluded that:

In order for a company to put 60 to 80 centimetres minimum back as topsoil to grow crops would be no mean feat to achieve. It is certainly not something we have observed anywhere around here or in Australia that we have heard of... If you stockpiled a pile of topsoil for 10 years, most of it would be anaerobic. It would lose its biology and structure. To put that back is quite a difficult job. At the moment all that is required to be put back is quite a shallow rehab job, and those are being done; there is no doubt about that. But certainly restoring land to croppable status is not being done.¹⁴

3.8 While the committee heard substantive evidence expressing doubt that an open cut mine site could be returned to cropping land, it also heard that longwall mining could severely affect the floodplain. The Jimbour Action Group stated:

The Central Queensland experience will tell you that that is not successful either. Because of the slumping effect that occurs as they go through, the roof collapses, the ground slumps down, and you have got a hole again. You will have taken something that is a billiard table and turned it into hills and valleys, which we currently do not have, and created significant erosion problems. Because of the nature of our soils, if water flows at more than 0.3 metres a second—to be technical—it dissolves and washes away, straight into the river and all the way to Adelaide, if you believe the rhetoric.¹⁵

3.9 In recognition of the value of floodplain soils to agriculture, the Shenhua submission stated that any mining on the Shenhua Watermark project would be located on the ridge country and not on the black soils.¹⁶ The Queensland Resource Council stated that commencing mining in the absence of accurate information was the worst possible outcome for landholders, government and resource companies alike:

12 Mrs Vicki Green, Member, Friends of Felton Inc, *Proof Committee Hansard*, 29 September 2009, p. 30.

13 Mr Geoff Penton, Chief Executive Officer, Queensland Murray-Darling Committee Inc, *Proof Committee Hansard*, 29 September 2009, p. 41.

14 Mr Geoff Penton, Chief Executive Officer, Queensland Murray-Darling Committee Inc, *Proof Committee Hansard*, 29 September 2009, p. 41.

15 Mr St John Kent, Member, Jimbour Action Group, *Proof Committee Hansard*, 29 September 2009, p. 35.

16 Shenhua Watermark Pty Ltd, *Submission 72*, p. 1.

If you have already started your operations and suddenly think, ‘Hang on, this topsoil just keeps going and going and going,’ that is an atrocious outcome because, from the company and the landholder’s point of view, you have set up a legislative responsibility to fix something that maybe you cannot. You are effectively signing a sort of blank cheque. The reason that the QRC [Queensland Resources Council] agrees with what we have heard from a lot of the individual submissions that you have had today for a rigorous planning process is that at the front end you need to get that science, that information, on the table so that you can see where the productive land is, you can do it in an objective way and companies can then factor that in to the EIS [environmental impact statement] process.¹⁷

3.10 The interconnection between groundwater aquifers and floodplain agriculture concerned many submitters.¹⁸ They suggested that avoiding mining of the floodplains would not provide adequate protection.

There is a concern, which others will speak to, about the caveats on how much the restriction is to be applied on the black soil plains. It is current technology. We have a bit of a question about what that means. With the area that is still identified, it is unknown as to whether or not that is a significant recharge area. Government maps such as the one I have here suggest that it is. Again, you cannot expect significant recharge areas to continue to be that when open-cut practices or longwall mining practices, which alter the landscape, go into these areas. An aquifer, an underground basin of water, is nothing if you cut off the recharge.¹⁹

3.11 The committee heard evidence that the rehabilitation of groundwater resources was a major concern for many submitters and witnesses. The National Farmers Federation (NFF) submission stated:

Experience has shown that mining operations can have significant impacts on ground and surface water, which go on to impact catchments and impair resource quality. The experience of the agricultural industries in dealing with ground water salinity and the significant risk that this issue still poses in many agricultural regions shows that once any damage is done to ground water systems, the opportunity to turn the situation around is difficult, costly and comes at an ongoing price as a consequence of productivity decline.²⁰

17 Mr Andrew Barger, Director, Industry Policy, Queensland Resources Council, *Proof Committee Hansard*, 29 September 2009, p. 58.

18 See for example Mrs Kirrily Blomfield, *Committee Hansard*, 28 September 2008, pp 24–25 and Mrs Vicki Green, Member, Friends of Felton, *Committee Hansard*, 29 September 2009, p. 27.

19 Mr John Clements, Executive Officer, Namoi Water, *Committee Hansard*, 28 September 2009, p. 21.

20 National Farmers Federation, *Submission 55*, p. 2.

3.12 Evidence presented to the committee provided anecdotal examples of the linkages between aquifers and the tributary rivers of the MDB.²¹ However, numerous submitters identified a lack of scientific data and evidence regarding the interconnectivity of water resources.²²

3.13 The committee understands that rehabilitation of complex soil profiles, such as exist on the Liverpool Plains, presents significant technical challenges. The committee believes that assessing the viability of groundwater rehabilitation may be limited by a lack of understanding of the interconnectivity of water resources in the region.

Regulation

3.14 The regulation of mining and the extent of water resource protection were key features of evidence presented to the committee. There are three ways in which mining can impact on water in the Murray Darling Basin:

- consumption of water (eg. In processing of ore)
- dewatering of mines and subsequent disposal of wastewater (which can be highly saline); and
- aquifer interference (that is, where mining activities damage or destroy groundwater systems).²³

3.15 While mining is primarily regulated by the state governments, the management of water in the Murray Darling Basin is achieved through a range of state and Commonwealth instruments, and intergovernmental agreements. Water is regulated through the Commonwealth's *Water Act 2007* (the Water Act), the 2004 Intergovernmental Agreement on a National Water Initiative (NWI), and existing state water resource plans. State governments have a range of mining and planning legislation that governs the approval of exploration and mining, and the consideration of specific development proposals.

The role of the Commonwealth

3.16 Mining, like all activities in the Murray Darling Basin, will operate under the Basin Plan (currently being prepared) and existing transitional water plans.²⁴

21 Mrs Kirrily Blomfield, *Committee Hansard*, 28 September 2008, pp 24–25.

22 Mr John Clements, Executive Officer, Namoi Water, *Committee Hansard*, 28 September 2009, pp 18–19 & 21; Mr Jeff Bidstrup, Chair, Haystack Road Coal Committee, *Committee Hansard*, 29 September 2009, p. 7.

23 DEWHA, *Submission 35*, p. 1.

24 Dr Tony McLeod, General Manager, Murray-Darling Basin Authority, *Proof Committee Hansard*, 14 October 2009, p. 5.

The Basin Plan

3.17 The Commonwealth *Water Act 2007* has created new governance arrangements for the waters of the Murray–Darling Basin by legislating objectives of both the 2004 NWI and the 2008 Intergovernmental Agreement on Murray–Darling Basin Reform.²⁵ Under the Act, the Commonwealth Minister, on the advice of the Murray–Darling Basin Authority (MDBA), is responsible for setting the framework for Basin-wide planning and management of water resources across the Basin, through the Basin Plan.²⁶ The Act requires the MDBA to develop and oversee the plan, in consultation with the Basin states. The first Basin Plan is scheduled to commence in 2011.²⁷ The plan is legally enforceable and intended to be 'a strategic plan for the integrated and sustainable management of water resources in the Murray–Darling Basin'.²⁸ During the initial years of operation, there will also be transitional water plans that operate as exceptions to the Basin Plan.²⁹

3.18 The *Water Act 2007* specifies some of the main functions of the Basin Plan, including:

- Setting and enforcing environmentally sustainable limits on the quantities of surface water and groundwater that may be taken from Basin water resources;
- Setting Basin-wide environmental objectives, and water quality and salinity objectives;
- Identifying risks to Basin water resources and strategies to manage those risks;
- Developing efficient water trading regimes across the Basin;
- Setting requirements that must be met by state water resource plans, and
- Improving water security for all uses of Basin water resources.³⁰

3.19 Whilst the Commonwealth will have oversight of and responsibility for the Basin Plan, the Basin states and territories will be responsible for the preparation of

25 Department of Environment, Water, Heritage and the Arts, *Submission 35*, p. 2.

26 Murray–Darling Basin Authority, *How the Basin Plan will affect us all*, available: http://www.mdba.gov.au/basin_plan (accessed 24 November 2009).

27 Murray–Darling Basin Authority, *The Basin Plan*, available: http://www.mdba.gov.au/basin_plan (accessed 24 November 2009).

28 Murray–Darling Basin Authority, *The Basin Plan*, available: http://www.mdba.gov.au/basin_plan (accessed 24 November 2009).

29 Dr Tony McLeod, General Manager, Murray–Darling Basin Authority, *Committee Hansard*, 14 October 2009, p. 4.

30 Murray–Darling Basin Authority, *About the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/about-the-basin-plan (accessed 24 November 2009).

new water resource plans as current state water resource plans expire.³¹ Existing state water resource plans are due to expire in New South Wales, Queensland, South Australia and the ACT in 2014, and in Victoria in 2019.³² Each new water resource plan will need to comply with requirements detailed in the Basin Plan and be approved by the responsible Commonwealth minister.³³

Key elements of the Basin Plan

3.20 Two of the key elements central to the Basin Plan will be the definition of sustainable diversion limits (SDLs) and the development of a water quality and salinity management plan.³⁴

3.21 There is currently a limit ("the cap") placed on the amount of surface water which can be taken for consumptive use in the Basin. The cap is currently set at a level based on historic use and not on sustainable use. Further, the existing cap does not limit the use of groundwater, the consumption of which has grown significantly in the context of the introduction of the surface water cap. Under the Basin Plan, the cap will be replaced by SDLs.³⁵

3.22 SDLs are limits placed on the quantities of both surface- and groundwater that can be taken from Basin water resources. They will be set by the Murray-Darling Basin Authority at a level deemed to be environmentally sustainable, defined as 'the level at which water in the Basin can be taken from a water resource without compromising key environmental assets, key ecosystem functions, key environmental outcomes or the productive base of the water resource'.³⁶

3.23 The Basin Plan will include a water quality and salinity management plan which will seek to improve water quality and reduce salinity impacts across the

31 Murray-Darling Basin Authority, *How the Basin Plan will affect us all*, available: http://www.mdba.gov.au/basin_plan (accessed 24 November 2009).

32 Department of Environment, Water, Heritage and the Arts, *Submission 35*, p. 2.

33 Murray-Darling Basin Authority, *The Basin Plan*, available: http://www.mdba.gov.au/basin_plan and *How the Basin Plan will affect us all*, available: http://www.mdba.gov.au/basin_plan (accessed 24 November 2009).

34 Murray-Darling Basin Authority, *Key elements of the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/key-elements (accessed 24 November 2009).

35 Murray-Darling Basin Authority, *Key elements of the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/key-elements (accessed 24 November 2009).

36 Murray-Darling Basin Authority, *Key elements of the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/key-elements (accessed 24 November 2009).

Basin.³⁷ The management plan will identify the main causes of poor water quality in the Basin and set water quality and salinity objectives and targets.³⁸

3.24 Water quality targets may include pH, temperature, dissolved oxygen, turbidity, sediment load, soluble organic carbon, heavy metals, various nutrients and blue-green algae levels.³⁹ A salinity target may specify the level of salinity to be achieved at a particular point on a river for a specified percentage of time.⁴⁰

The Commonwealth's role and the impacts of mining

3.25 Evidence presented by the MDBA intimated that the Basin Plan is likely to focus primarily on establishing a sustainable level of water extraction from the MDB system.⁴¹ The National Water Commission (NWC) submission conceded that due to the relatively low level of water use by mining in the MDB (around 1 % relative to the 68% used by agriculture), extraction and water use by mining operations was not considered in recent CSIRO reports.⁴²

3.26 The NWC submission stated that policy relating to mining is largely beyond the scope of the National Water Initiative (NWI). The NWC submission stated:

Clause 34 of the NWI states that the Parties agree that there may be special circumstances facing the minerals and petroleum sectors that will need to be addressed by policies and measures beyond the scope of the NWI Agreement. In this context, the Parties note that specific project proposals will be assessed according to environmental, economic and social considerations, and that factors specific to resource development projects, such as isolation, relatively short duration and water quality issues, and obligations to remediate and offset impacts, may require specific management arrangements outside the scope of the Agreement.⁴³

37 Murray-Darling Basin Authority, *Key elements of the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/key-elements (accessed 24 November 2009).

38 Murray-Darling Basin Authority, *Key elements of the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/key-elements (accessed 24 November 2009).

39 Murray-Darling Basin Authority, *Key elements of the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/key-elements (accessed 24 November 2009).

40 Murray-Darling Basin Authority, *Key elements of the Basin Plan*, available: http://www.mdba.gov.au/basin_plan/concept-statement/key-elements (accessed 24 November 2009).

41 Dr Les Roberts, Executive Director, Murray-Darling Basin Authority, *Proof Committee Hansard*, 14 October 2009, p. 3.

42 National Water Commission, *Submission 33*, p. 4.

43 National Water Commission, *Submission 33*, p. 2.

3.27 As the Commonwealth's submission noted, an impact on water consumption within the Basin is only one of the impacts on water that mining may have. It may also present wastewater disposal issues, or may interfere with groundwater aquifers.⁴⁴ The Commonwealth currently has powers, defined in the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) to regulate mining activity that is likely to have a significant impact on a matter of national environmental significance.⁴⁵ Matters of national environmental significance, as outlined in the EPBC Act, include: listed threatened species and ecological communities; listed migratory species; wetlands of international importance; Commonwealth marine areas; World Heritage properties; National Heritage places; and nuclear actions.⁴⁶

3.28 The NWC agreed that if mining activities in the Basin were unregulated they had the potential to impact surface and groundwater systems in the MDB.⁴⁷ However, the NWC's submission did note that there were state regulatory mechanisms in place to ensure environmental protection.⁴⁸ The committee recognises that, historically, primary responsibility for regulating the impact of mining on the environment, including water resources, lies with the relevant state governments.

The role of the states

3.29 The NSW government submission emphasised that state government ownership of minerals confers exclusive rights to allocate resources and collect royalties resulting from their exploitation, making the people of NSW direct stakeholders in the continued success of mining in NSW.⁴⁹ The NSW government submission further stated that under the NSW *Mining Act 1992*, the government is obligated to ensure an appropriate return to the State from mineral resources.⁵⁰ The NSW government submission reiterated the enormous benefits (around \$174 million in royalties from mining in the MDB alone in 2008/09) delivered by mining that helped build infrastructure across NSW.⁵¹

3.30 The NSW government submission contended there is a strong regulatory framework that ensures that the impact of mining activities on the environment, agriculture and water resources is minimal.⁵² These regulations are outlined in a number of NSW government acts including the *Environmental Planning and*

44 Department of Environment, Water, Heritage and the Arts, *Submission 35*, p. 1.

45 Department of Environment, Water, Heritage and the Arts, *Submission 35*, p. 2.

46 Department of Environment, Water, Heritage and the Arts, *Submission 35*, p. 2.

47 National Water Commission, *Submission 33*, p. 6.

48 National Water Commission, *Submission 33*, p. 6.

49 NSW Department of Industry and Investment, *Submission 34*, p. 1.

50 NSW Department of Industry and Investment, *Submission 34*, p. 1.

51 NSW Department of Industry and Investment, *Submission 34*, p. 3.

52 NSW Department of Industry and Investment, *Submission 34*, p. 5.

*Assessment Act 1979; Mining Act 1992; Petroleum (Onshore) Act 1991; Protection of the Environment Operations Act 1997; Water Management Act 2000; and Water Act 1912.*⁵³ The NSW government submission intimated that the current mining operations in the Liverpool Plains comply with the regulatory arrangements established by these acts.

3.31 This position was strongly advocated in evidence to the committee from mining industry representatives who argued that the existing regulatory framework was rigorous and extensive. The NSW Minerals Council stated that they firmly believed that the existing regulatory framework more than adequately addresses the concerns raised by the inquiry.⁵⁴ The NSW Minerals Council argued that:

This [regulatory] framework allows for the evaluation and assessment of the potential impacts of any mining project, including impacts on the environment. Water-sharing plans and sustainable yield projects also specifically address the sustainable management of water resources that are so critical to our major primary industries of mining and agriculture. The New South Wales minerals industry, a leader in water management, is committed to working with landowners and other key stakeholders to ensure the best outcomes from developing the rich natural resources, both agriculture and mining related, in mining areas, including in the Namoi catchment.⁵⁵

3.32 The Queensland government submission, which echoed the views of the NSW government, stated that they had developed a thorough and transparent process that gave a voice to all interests including the local community, industry groups, the mining industry and environmental groups.⁵⁶ The Queensland government submission further stated that water management is a condition attached to every mining lease and that this includes the reduction of runoff and contamination.⁵⁷ However, understanding of the impact of coal seam methane extraction on water connectivity was not well understood due to the emerging nature of the industry.⁵⁸ The Queensland government submission pointed to the Commonwealth-funded coal seam gas water feasibility study as an example of an initiative designed to fill this gap in existing knowledge.⁵⁹

53 NSW Department of Industry and Investment, *Submission 34*, p. 7.

54 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 2.

55 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 2.

56 Queensland government, *Submission 73*, p. 2.

57 Queensland government, *Submission 73*, p. 3.

58 Queensland government, *Submission 73*, p. 4.

59 Queensland government, *Submission 73*, p. 4.

3.33 In Queensland, mining operations of the type examined by this inquiry are governed by a number of state acts including the *Mineral Resources Act 1989*; *Water Act 2000*; *Environmental Protection Act 1994*; *Petroleum and Gas (Production and Safety) Act 2004*; and *Nature Conservation Act 1992*.

3.34 The Queensland Resources Council submission argued that resource developments in the state were required to meet strict environmental licence conditions.⁶⁰ The Queensland Resources Council further stated that:

Both the EIS [environmental impact statement] and the development of a company's environmental operating requirements, called an environmental authority, have multiple regulatory requirements and processes in relation to public consultation, objection and appeal rights. In the case of mining, this provides substantial opportunity for community input into what a mine's rehabilitation should deliver. In short, the resources sector in Queensland operates under a strict multistage approvals process, including leading environmental safeguards to identify and recover the resources which belong to the population of the state. This government's accountabilities through its legislation, industry development policies and regulatory framework can achieve this potential.⁶¹

3.35 The NWC's submission stated that the regulatory regimes in all MDB states have been designed to require that proposals for major changes in land use, such as mining, will pass through detailed planning processes, including environmental impact assessments, at both the local and regional level.⁶²

3.36 As outlined by the NSW Minerals Council, concerns raised by community members about the viability of rehabilitation were primarily a matter for state government legislation:

We [the coal industry] do[es] not own the resources; the people of New South Wales own the coal and other mineral resources. We are merely acting on behalf of them in developing those resources and we return our payments back to the government by way of royalties—that is, over \$1.4 billion alone for this year. That is a lot of money that the people of New South Wales get back in consolidated state revenue.⁶³

3.37 The NSW Minerals Council further stated that:

The [state] government has chosen to put those areas up for exploration tender and obviously two of our members are interested in looking at it. It is

60 Mr Gregory Lane, Deputy Chief Executive, Industry Policy, Queensland Resources Council, *Proof Committee Hansard*, 29 September 2009, p. 48.

61 Mr Gregory Lane, Deputy Chief Executive, Industry Policy, Queensland Resources Council, *Proof Committee Hansard*, 29 September 2009, p. 48.

62 National Water Commission, *Submission 33*, p. 6.

63 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 7.

then up to the government to make the final decision about whether or not any mining operation should go ahead, taking into consideration everything, including the potential environmental impacts, the economic and social contribution of mining and a whole list of other factors as set up in the legislation here in New South Wales.⁶⁴

3.38 Mining industry representatives also pointed to the regulatory requirement for exploration and mining operations to lodge rehabilitation bonds to be held by the NSW Government.⁶⁵

3.39 The NSW Minerals Council and mining company submissions, including submissions by Shenhua and BHP, further emphasised that a licence to explore is not a licence to mine. They argued that there is a misconception within the community that mining operations will automatically follow exploration.⁶⁶ Mining industry representatives further stated that in order to proceed from an exploration licence to a mining operation a rigorous environmental assessment process must be completed.

3.40 While the committee acknowledges that this position does reflect the current regulations it also recognises that, in an overwhelming number of instances, mining operations do proceed when exploration has discovered commercially profitable resources.

3.41 The NSW government informed the committee that the combined \$400 million paid by Shenhua and BHP Billiton for exploration licenses in the Liverpool Plains was the highest amount ever to be paid for exploration permits in that state.⁶⁷ Mr Brad Mullard did, however, seek to reassure the committee that a mining permit was not a foregone conclusion despite the record price paid for the exploration licenses:

Senator WILLIAMS—So it is the highest. Wouldn't it be just natural that when a company puts in \$300 million, such as Shenhua does, to tender for the exploration rights they would expect to be mining at the end of it?

Mr Mullard—The conditions of the tender made it very clear that there would be no guarantee of approval of mining, that they would need to meet all of the normal government approvals processes. So we were not providing any assurance that at the end of the day they would be granted a mining lease. That was an absolute requirement and it was made very clear

64 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 6.

65 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 9.

66 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 9.

67 Mr Brad Mullard, Executive Director, Mineral Resources Branch, Industry and Investment NSW, *Proof Committee Hansard*, 19 November 2009, pp 18–19.

that in granting the exploration licence the government was in no way implying that mining approval would be given at the end.⁶⁸

A need for reform?

3.42 The committee recognises that management of water resources in the Murray Darling Basin is undergoing significant reform designed to ensure the sustainability of land uses in the region. There are aspects of the Basin Plan that will be positive in this regard, such as the inclusion of groundwater in Sustainable Diversion Limits. However, it was not clear to the committee that the existing framework for managing impacts of new developments in the Basin is adequate.

3.43 The adequacy of environmental protections guaranteed by existing regulations was questioned by a number of submitters and witnesses to the inquiry. The NFF submission expressed significant concerns over the adequacy of the regulatory processes that support the evaluation and operation and mining development. The NFF have sought greater clarity in regulations concerning access to land.⁶⁹ A number of other submitters and witnesses were concerned about the independence of environmental assessments, arguing that they were often self assessments by mining companies.

3.44 The Friends of Felton stated:

I think the mines tend to do their own monitoring. A common complaint is that the results tend to be averaged over a monthly period, so you can have a couple of really windy days with terrible dust levels and then a few calm days after that and, as long as the average is under the maximum limit, the EPA does nothing. There have to be changes there, I would say.⁷⁰

3.45 A number of witnesses also expressed reservations about the independence of governments that receive large amounts of mining royalties from the mining industry. The Haystack Road Coal Committee also expressed concern that independence was lacking in the Tarong Energy project:

The government owns Tarong and the government has been suggesting to Tarong that they need to sell Haystack Road for a mine. So we do not have a great deal of confidence that the government is this time going to pick up \$400 million for Haystack Road and then tell whoever buys it, 'You cannot mine it because it is prime country.'⁷¹

68 Mr Brad Mullard, Executive Director, Mineral Resources Branch, Industry and Investment NSW, *Proof Committee Hansard*, 19 November 2009, p. 19.

69 National Farmers Federation, *Submission 55*, p. 2.

70 Mr Robert McCreath, President, Friends of Felton Inc, *Proof Committee Hansard*, 29 September 2009, p. 28.

71 Mr Jeffrey Bidstrup, Chair, Haystack Road Coal Committee, *Proof Committee Hansard*, 29 September 2009, p. 11.

3.46 Such examples illustrate the range of regulatory shortfalls perceived by submitters and witnesses. However, the most pertinent complaint made by submitters and witnesses to this inquiry is the level of protection afforded to water resources, including recharge areas, in the MDB. Many submitters and witnesses argued that in the absence of detailed knowledge concerning the interconnectivity of groundwater systems with the MDB and the potential impacts mining could have on these water resources, the government should reconsider its decision to grant Mineral Exploration Licences in these areas. Namoi Water argued:

...the area should not have been released. I think the state department is negligent in releasing exploration licences in rectangles and then expecting the miners to go out and have a guess at what level of risk they are willing to undertake. That is what the government is asking the miners to do. That leaves landholders and communities in great uncertainty.⁷²

3.47 There are some signs that actions are being taken to address these concerns. There is some activity underway at a Commonwealth level to examine the impact of mining on the MDB. This includes:

- a) A \$2 million multi-jurisdictional NWC commissioned project titled: Potential Local and Cumulative effects of mining on Groundwater Resources – and the development of tools to aid prediction and minimisation of cumulative impacts;
- b) A \$1.5 million contribution by the Commonwealth to the joint study into surface and groundwater resources of the Namoi Catchment in NSW; and
- c) Up to \$5 million, subject to due diligence, for a feasibility study to analyse opportunities, risks and practicability of the use of coal seam gas water in parts of the Queensland MDB.⁷³

3.48 Section 255A of the Water Act also seeks to recognise the relationship between surface floodplain water and underground aquifers, specifically in the context of mining activity. Section 255A states:

255A Mitigation of unintended diversions

Prior to licences being granted for subsidence mining operations on floodplains that have underlying groundwater systems forming part of the Murray-Darling system inflows, an independent expert study must be undertaken to determine the impacts of the proposed mining operations on the connectivity of groundwater systems, surface water and groundwater flows and water quality.

3.49 What section 255A also highlights, however, is the lack of scientific knowledge that is hampering effective planning of developments in the basin.

72 Mr John Clements, Executive Officer, Namoi Water, *Proof Committee Hansard*, 28 September 2009, p. 19.

73 Department of Environment, Water, Heritage and the Arts, *Submission 35*, p. 3.

A lack of knowledge

3.50 Submitters and witnesses raised serious reservations about the viability of mining in an area where water resources sustain agricultural livelihoods. However, the committee found it difficult to substantiate the anecdotal evidence without concrete scientific analysis of the damage mining could potentially have on individual sites, the region and the broader MDB. Based on the limited evidence presented to the inquiry, it is possible that existing mining operations in the Liverpool Plains and the Darling Downs are largely compliant with the current regulatory framework. However, a lack of scientific knowledge can make it hard to know whether this compliance is complete, or whether it is actually protecting water resources and water quality within the Basin.

3.51 Evidence presented by the Department of Environment, Water, Heritage and the Arts (DEWHA) supported the view that there is currently a lack of adequate scientific knowledge around the groundwater management issues.⁷⁴ DEWHA stated:

The sites and data that we hold about water resources nationally and in the basin are much more comprehensive for surface water than for groundwater. Therefore, in the absence of a comprehensive information set about groundwater resources, when issues do come up they tend to have to be the subject of special purpose studies of this nature....‘Do we know enough about groundwater?’ I think the short answer is that there is a lot more to learn to bring our knowledge up to the level we have with surface water resources.⁷⁵

3.52 The Namoi Catchment Water Study is a study, partially funded by the Commonwealth:

into surface and groundwater resources of the Namoi Catchment in NSW. The study is intended to provide high quality information to help identify the risks associated with mining on water resources in the region, and to inform the NSW Government's decision-making processes.⁷⁶

3.53 The Namoi water study has been endorsed by mining companies, industry peak bodies and local community groups with funding provided by jointly by the Commonwealth and industry.⁷⁷ The study will look at the entire Namoi catchment area of which the Carroona Coal Project is one part.⁷⁸ Industry representatives and

74 Mr Tony Slatyer, First Assistant Secretary, Water Reform Division, Department of Environment, Water, Heritage and the Arts, *Proof Committee Hansard*, 14 October 2009, p. 24.

75 Mr Tony Slatyer, First Assistant Secretary, Water Reform Division, Department of Environment, Water, Heritage and the Arts, *Proof Committee Hansard*, 14 October 2009, p. 24.

76 DEWHA, *Submission 35*, p. 3.

77 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 5.

78 Ms Sue-Ern Tan, General Manager, Policy and Strategy, New South Wales Minerals Council, *Proof Committee Hansard*, 28 September 2009, p. 9.

Shenhua Watermark have further stated that information gathered during the exploration phase will be fed into the study.⁷⁹ The Shenhua submission stated:

Shenhua Watermark is committed to the success of the Namoi Water Study. All data produced as part of the Watermark Project will be presented for inclusion in the Study. Shenhua has committed funds to the study, an amount which has not yet been determined. Project Director for the Watermark Project, Joe Clayton, will also sit on the SAG [stakeholder advisory group] committee.⁸⁰

3.54 The NSW government has indicated that it would not be matching the funds contributed by the Commonwealth government to the joint water study in the Namoi Catchment. In an answer to a question without notice in the New South Wales Legislative Council, former minister the Hon. Ian Macdonald stated:

I am not writing out any cheque in relation to this matter. The Government has decided, following discussions with Mr Peters and the department on this matter, that it would not be matching the funds provided by the Commonwealth. Just because the Commonwealth has put up \$1.5 million for this or any other project does not mean that we should have to follow suit. However, my understanding from discussions in the committee is that adequate funds will be available for that water study.⁸¹

3.55 The committee is concerned that the NSW government appeared unwilling to fund important water studies, and does not appear to have given an undertaking to wait for the results of the Namoi water study before issuing further licences. The committee urges relevant state governments to play their part in expediting research so that the results can inform assessment and planning approval processes.

3.56 The committee believes that there is an important and increasing role for regional planning and for the Commonwealth in light of increasing evidence of impacts on water resources that cross jurisdictions within the Murray Darling Basin.

Stronger regional planning

3.57 During the current inquiry, there was support from a range of stakeholders for planning processes that operate at a regional level and take account of the cumulative effects of developments. A regional approach to planning was proposed by the Minerals Council of Australia during a previous inquiry by this committee, into the operation of the *Environment Protection and Biodiversity Conservation Act 1999*. At a public hearing on 9 December 2008 for that inquiry, the Minerals Council of Australia made the following comment:

We therefore consider that a more appropriate role for the Commonwealth would be in strategic bioregional planning, pre-emptive of development

79 Shenhua Watermark Pty Ltd, *Submission 72*, p. 5.

80 Shenhua Watermark Pty Ltd, *Submission 72*, p. 1.

81 New South Wales Legislative Council, *Hansard*, 27 October 2009, p. 18674.

pressure and across larger time frames. Individual projects would then be approved by states and territories, which would have responsibility to ensure that the project fits within the remit of the bioregional plan. The Commonwealth's role would then be to assess, list, monitor and report on ecological entities of national significance, to develop regional plans that cross-cut natural resource portfolios—for example, biodiversity, water, minerals and socioeconomic values—and audit states and developers on the subsequent implementation and compliance with these plans and approval conditions.⁸²

3.58 The chair of the Haystack Road Coal Committee drew attention to this proposal and supported it, suggesting it was a practical step that could better inform the debate on mining in the Murray Darling Basin.⁸³ Friends of Felton wanted a regional planning process that would involve land zoning to restrict the areas where mining could be undertaken.⁸⁴

3.59 The committee received evidence that the cumulative impact of mining is not currently being adequately monitored, making adequate regional planning impossible. Agforce stated that:

...the death by a thousand cuts or the cumulative impact that we are constantly referring to is at no point in time actually monitored, measured or verified by anyone other than the resource companies themselves. As mentioned by my colleague earlier, at this point in time the state government has the capacity to require that monitoring to be done under two specific sections of the petroleum and gas act. But until very recent times, regardless of the fact that some of these sites have been operational for several years now, that information has not been made available to the government, nor has the government actually chased it. So the overall knowledge about what that cumulative impact is, regardless of an action plan if there is an impact, is null and void at this point in time because it does not exist.⁸⁵

3.60 This view was echoed by the Minerals Council of Australia in December 2008:

Currently, we have a number of disparate processes that are occurring across the landscape. When mining companies are going for project approval they are looking at a small area of land and potentially going through six layers of processes to get access to that portion of land. A

82 Ms Melanie Stutsel, Director, Environment and Social Policy, Minerals Council of Australia, Inquiry into the operation of the *Environment Protection and Biodiversity Conservation Act 1999*, *Committee Hansard*, 9 December 2008, p. 3.

83 Mr Jeffrey Bidstrup, Chair, Haystack Road Coal Committee, *Proof Committee Hansard*, 29 September 2009, p. 6.

84 Mr Ian Whan, Friends of Felton, *Committee Hansard*, 29 September 2009, p. 32.

85 Mr Drew Wagner, Senior Policy Officer, Agforce, *Proof Committee Hansard*, 29 September 2009, p. 20.

neighbouring operation may be occurring that is perhaps a non-mining project. Currently, there is no process for actually looking at what the cumulative impact on the landscape is of those two disparate processes. There are two layers of silos—the silos of the individual projects themselves, often occurring in parallel with each other but not being considered as a combined entity and there are also a number of silos at the different layers of biodiversity, management and protection.⁸⁶

3.61 The Queensland Murray Darling Committee was likewise concerned that the cumulative effect of mining be assessed, to assess 'what the overall footprint of the industry may be'.⁸⁷ In Gunnedah, the committee heard similar concerns from Namoi Water, which was concerned about the lack of a planning process that considered water at a landscape scale.⁸⁸

3.62 Section 255A of the Commonwealth's Water Act, mentioned earlier, represents significant recognition of the need to plan development based on a holistic understanding of the links between groundwater systems and water flows in the Murray Darling Basin. The committee was however unable to determine if Section 255A covers interconnected underground water resources located in ridge country above floodplains, and not just the floodplains themselves. The committee also notes that this section of the Act does not seek to place a prohibition on the licensing of mining should the expert studies result in negative findings. Section 255A as it stands has the potential to ensure the discovery of potential negative impacts of a mining development on the Basin, yet the section triggers no mechanism that will prevent that impact.

3.63 Beyond such specific provisions, the committee believes that regional planning mechanisms would provide a more robust knowledge base from which to assess the viability of mining in a particular area and ensure that there is adequate knowledge of the potential risks to national water resources.

3.64 There also needs to be greater inter-government coordination and increased understanding of the cumulative impact of mining in the MDB. While case-by-case assessments are important, the committee believes that aggregating knowledge about a region and its water resource will enable a more thorough understanding of the cumulative impacts of mining in the MDB.

86 Ms Melanie Stutsel, Director, Environment and Social Policy, Minerals Council of Australia, Inquiry into the operation of the *Environment Protection and Biodiversity Conservation Act 1999*, *Committee Hansard*, 9 December 2008, p. 4.

87 Mr Geoff Penton, Chief Executive Officer, Queensland Murray Darling Committee, *Committee Hansard*, 29 September 2009, p. 38.

88 Mr John Clements, Executive Officer, Namoi Water, *Committee Hansard*, 28 September 2009, p. 16.

3.65 The committee suggests that the Namoi Catchment Water Study is an example of a regional planning process that is consistent with the proposal made by the Minerals Council of Australia and supported by other stakeholders. As such it deserves the support of all governments.

Recommendation 1

3.66 The committee recommends that all governments support the Namoi Catchment Water Study and not take further decisions in relation to the licensing of mining and extractive industries in the Namoi catchment until that study is completed and publicly released.

Recommendation 2

3.67 The committee recommends that, as a matter of priority and preferably prior to the release of future Mineral Exploration Licences, state governments establish regional water plans in areas potentially subject to mining or extractive industry operations.

Recommendation 3

3.68 The committee recommends that the Commonwealth Government:

- **investigate the scope of Section 255A of the *Water Act 2007* to determine whether it applies to groundwater resources located in ridge country. If this is not the case, the committee recommends that the Commonwealth Government amend Section 255A to include groundwater resources on all land types.**
- **Work with the states to ensure the prohibition of the licensing of mining or extractive industries in the event that a study conducted under section 255A indicates that development would have adverse impacts on groundwater resources and the environment.**

Recommendation 4

3.69 The committee, noting extensive planning and research already being undertaken including the National Water Initiative, the Basin Plan, regional water plans and other studies currently underway,

- **Urges all governments to maximise use of information and data gleaned from planning and research activities to ensure that coordinated analysis of regional water plans takes place, so as to better understand the cumulative impacts of mining in the Murray-Darling Basin; and**

- **Recommends that the Commonwealth Government works to ensure the prevention of new mines or extractive industries in the Murray Darling Basin if their impacts on water resources are inconsistent with the Basin Plan.**

Senator Simon Birmingham
Chair