



NSW MINERALS COUNCIL
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**AGENDA
NSW Minerals Council**

UHMD Joint Working Group Meeting - Water

Singleton Visitor Information Centre, Townhead Road, Singleton NSW

Thursday 7 May 2015: 10.00am-1.00pm

1. Welcome and apologies
2. Confirmation of the minutes and update on actions of the 6 November 2014 meeting
3. Update on current projects
4. 2014 MCA Water Accounting Framework - data and communication
5. Beneficial re-use of voids - water quality assessment
6. Hunter Bioregional Assessment - context statement
7. 2014 Annual UHMD workshop - issues raised - water
8. Other business

**Actions arising from meeting on 6 November 2014
UHMD Joint Working Group - Water**

Action	Responsibility	Progress
1. Welcome and Apologies		
2. Confirmation of Minutes of 31 July 2014		
3. Update on current projects		
4. 2013 MCA Water Accounting Framework - draft results		
<ul style="list-style-type: none"> • NSWMC to review groundwater reinjection figures. 	NSWMC	Completed
<ul style="list-style-type: none"> • NSWMC to present water quality results as high, medium and low quality. 	NSWMC	Completed
5. MCA Water Accounting Framework Communications Plan		
<ul style="list-style-type: none"> • NSWMC to include details of background salinity of groundwater within the contextual statement for the MCA WAF Communications Plan. 	NSWMC	Completed
<ul style="list-style-type: none"> • NSWMC to reorder the figures to step from a region-wide analysis to a mining industry perspective. 	NSWMC	Completed
<ul style="list-style-type: none"> • NSWMC to update the allocations graphs to include a comparison with environmental flows in the Hunter River, potentially at Morpeth. 	NSWMC	Completed
<ul style="list-style-type: none"> • NSWMC to separate discussions on water quality and quantity in presenting the data. 	NSWMC	Completed
<ul style="list-style-type: none"> • Invite the NSW Office of Water to join the Water Working Group. 	NSWMC	Completed
<ul style="list-style-type: none"> • NSWMC to consider preparing a YouTube video as part of the MCA WAF Communications Strategy. 	NSWMC	Ongoing

6. DRE's commitments to developing the water resources map		
7. NSW Government groundwater monitoring initiative		
<ul style="list-style-type: none"> • NSWMC to distribute AGL water monitoring data for the Upper Hunter when available. 	NSMWC	Completed
8. Annual UHMD Workshop - 3 December 2014		
9. Other business		

MINUTES

Upper Hunter Mining Dialogue UHMD Joint Working Group Meeting - Water Singleton Visitor Information Centre, Singleton – 10am Thursday 6 November 2014

Present

Chris New (Acting Chair)	Rio Tinto – Coal & Allied Industries
James Benson	Anglo American Metallurgical Coal
Greg Lamb	Bloomfield Collieries
Julie Thomas	Muswellbrook Coal
James Barben	Yancoal – Ashton Coal Operations
Wendy Bowman	NSW Mine Watch
Rebekah Gomez-Fort	NSW Department of Primary Industries
Ron Fenwick	UHMD - Individual contact
Bruce Whitten	Hunter Valley Water Users' Association
Alison Crocker	AGL
Adam Gilligan	NSW Environment Protection Authority
Andrew Rode	NSWMC
Claire Doherty	NSWMC
David Frith	NSWMC
Greg Sullivan	NSWMC

Apologies

Troy Favell	Peabody Energy – Wambo Coal
David O'Brien	Glencore
Bill Collins	The University of Newcastle
Michael Gale	BHP Billiton – Mt Arthur Coal
Ken Bray	Hunter Valley Water Users' Association

1. Welcome and Apologies

Chris New welcomed attendees of the Joint Working Group - Water and apologies were noted.

2. Confirmation of the minutes and update on actions from the 31 July 2014 meeting

The minutes of the 31 July 2014 meeting were confirmed.

3. Update on current projects

IESC Project / Hunter Bioregional Assessment

Andrew Rode advised that industry members had been providing any non-commercially-sensitive data that the BAP team had been requesting, in order to facilitate completion of the project.

Hunter River Water Quality Assessment

Andrew advised that the timing for release of the Review of the Hunter River Salinity Trading Scheme had again been delayed to November 2014.

4. 2013 MCA Water Accounting Framework - draft results

Andrew presented the 2013 draft results for the MCA Water Accounting Framework.

Rebekah Gomez-Fort queried where groundwater reinjection was occurring, as it was her understanding that this was not occurring for any mines in the Hunter.

It was advised by the working group that water quality figures be reported as “low, medium and high” quality water, rather than category 3, 2, and 1 water.

ACTIONS:

- NSWMC to review groundwater reinjection figures.
- NSWMC to present water quality results as high, medium and low quality.

5. MCA Water Accounting Framework Communications Plan

The working group suggested that the contextual statement includes details of the background salinity of the groundwater.

The working group also suggested that Figure 12 (Hunter Valley Water Balance) be presented prior to the other contextual figures. The working group also suggested that the allocations graphs include a contextual comparison with the volume of environmental flows in the Hunter River. There was also a suggestion that river flow comparisons be made based on flows at Morpeth, rather than Greta.

Water quality information presented through the MCA WAF was seen as less valuable than the quantities. It was therefore further suggested that the water quality and water quantity aspects be separated.

It was also suggested that the NSW Office of Water be invited to join the working group, as they could provide valuable input into the MCA WAF contextual information, as well as other water projects.

In presenting the data, a YouTube video could be prepared as an educational tool to run through the outputs of the MCA WAF.

ACTIONS:

- NSWMC to include details of background salinity of groundwater within the contextual statement for the MCA WAF Communications Plan.
- NSWMC to reorder the figures to step from a region-wide analysis to a mining industry perspective.
- NSWMC to update the allocations graphs to include a comparison with environmental flows in the Hunter River, potentially at Morpeth.
- NSWMC to separate discussions on water quality and quantity in presenting the data.
- Invite the NSW Office of Water to join the Water Working Group.
- NSWMC to consider preparing a YouTube video as part of the MCA WAF Communications Strategy.

6. DRE's commitments to developing the water resources map

Andrew provided an overview of DRE's commitments to the water resources map, which was being held up by the government's delayed release of Common Ground.

7. NSW Government groundwater monitoring initiative

Andrew provided an overview of the NSW Government's new *Groundwater Baseline Project* that will map and monitor groundwater in real time, and analyse the location and quantity of water being extracted by different industries (including mining).

It was suggested that AGL's water monitoring data for the Upper Hunter be distributed to the working group when available.

ACTION:

- NSWMC to distribute AGL water monitoring data for the Upper Hunter when available.

8. Annual UHMD Workshop - 3 December 2014

Claire Doherty provided an overview of the intent of the annual UHMD workshop, which included re-prioritising issues and getting ideas for action.

Alison Crocker suggested that a timeline with ticks be used to demonstrate what has been achieved to date and the work that is currently progressing, as well as any next steps.

9. Other business

No other business.

The meeting closed at 11:45 am.

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Agenda Item 3

UPDATE ON CURRENT PROJECTS

MCA Water Accounting Framework (MCA WAF)

Refer to item 4.

IESC Project / Hunter Bioregional Assessment

Refer to item 6.

Water Resources Map Project

DRE has not yet launched Common Ground. It is understood that it will be launched in June 2015.

Hunter River Water Quality Assessment Project

NSWMC is still awaiting EPA's review of the Hunter River Salinity Trading Scheme (HRSTS). It is understood that this will be released at the end of May 2015 and will include a four week consultation period.

Andrew Rode has provided an expression of interest to become a member of the HRSTS Operations Committee. If Andrew is nominated, the working group would have a more direct insight into the progress of the review and its recommendations.

FOR INFORMATION / DISCUSSION

**NSW Minerals Council
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Agenda Item 4

MCA WATER ACCOUNTING FRAMEWORK - DATA AND COMMUNICATION

Issue

The MCA WAF data for 2014 is currently being collated and will be published in the next few months.

Background

Companies are currently collating MCA Water Accounting Framework (WAF) Stage 1 and 2 data for 2014. NSWMC was hoping to be in a position to present the results at the meeting, however the recent flood events in the Hunter has meant that some of the key company water staff have had to work on other urgent recovery efforts. The data will therefore be collated and published in June at the earliest.

NSWMC has prepared a contextual schematic outlining how the data could be presented (attached). The schematic does not go into as much detail as was outlined in the MCA WAF Communications Strategy because:

- NSWMC believes that the data should not be overly complex, and should be understood by a Year 10 'general public' readership. The core 2014 MCA WAF results are presented and highlighted as the focus, with some of the contextual information excluded (such as water allocations).
- The schematic aims to tell a story about how/where water is sourced and eventually utilised by mining operations in the Upper Hunter.
- Some of the potential contextual information cannot be identified or reliably compared to the same boundary and timescale as the 2014 MCA WAF results.
- The water quality of outflows is not included, as it is believed that this information adds little value - most of the water is used/lost either through entrainment in tailings/coal or evaporated.

The data will still be promoted in accordance with the MCA Water Accounting Framework Communications Strategy (i.e. media release, newspaper article etc.). The updated strategy is attached.

A consultant will be engaged to professionally present the information in the schematic.

Recommendation

NSWMC request that the working group provide guidance on the presentation and communication of the 2014 water accounting framework results.

FOR DISCUSSION

**NSW Minerals Council
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Agenda Item 5

BENEFICIAL REUSE OF VOIDS PROJECT

Issue

Golders has provided the draft literature review and end use review reports (attached) for the Beneficial Reuse of Voids project - that the Land Management working group is overseeing. The next stage of the project will involve consideration of water quality in the local voids, requiring the Water working group's input.

Background

The draft reports provide an in-depth summary of voids in Australia and in the Hunter, and considers options for beneficial reuse. These reports may be updated to include a case study of Glencore's Westside mine, and any potential additional information relating to closure of some of the Hunter mines analysed.

The next stage of the project involves assessing the historical water quality of the following voids:

- Westside (Glencore).
- Mt Arthur Coal (BHPB).
- Ravensworth West (Glencore) - to be confirmed.

Golder Associates has provided a scope of work for this next stage, which has been approved. It involves:

- Collating key water quality data for three pit void lakes from operations in the region.
- Undertaking a gap analysis of parameters, sites and dates where any key water quality data is missing and is required.
- Conducting multivariate and time-series statistical analysis and presenting a summary of water quality data as:
 - Trends for key water quality parameters over time.
 - Differences and commonalities of water quality between the different void lakes.
- Comparing and contrasting water quality data against pit void lake predictions.

FOR INFORMATION / DISCUSSION

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Agenda Item 6

HUNTER BIOREGIONAL ASSESSMENT - CONTEXT STATEMENT

Issue

The first product of the Hunter sub-region Bioregional Assessment (attached) has been released.

Background

The context statement brings together what is currently known about the geography, ecology, hydrology, geology and hydrogeology of the Hunter subregion. It provides baseline information that is relevant to understanding the regional context of water resources and water-dependent assets, which might be impacted by coal and coal seam gas development. Information is collated that is relevant to interpret later stages of the bioregional assessment i.e. the model-data analysis, impact analysis, risk analysis and outcome synthesis.

The context statement includes materially relevant characteristics of the subregion that are needed to adequately interpret output from ecological, surface water and groundwater datasets and models, and from this develop improved knowledge of whole-of-system function.

No new analysis or modelling is presented in the context statement; rather, it draws on existing information.

Some of the most interesting points in the report are quoted below:

- “Fractured rock aquifers are of less importance due to marginal water quality.”
- “Mining is 1.1% of the area.”
- “Water use in the Hunter subregion is primarily for urban centres (both domestic and industry use), agricultural production (i.e. grazing, viticulture and other crop irrigation), and cooling of the Bayswater, Liddell, and Redbank coal-fired power stations (Figure 21) that provide a substantial component of electrical energy requirements in NSW.”
- Climate change precipitation and runoff effects on the Hunter River basin are provided for 2030 (+1 deg C) and 2070 (+2 deg C):
 - Precipitation:

Table 8 Summary of projected impacts of climate change on rainfall for the broad vicinity of the Hunter subregion

Basin	Historical precipitation (mm/year)	Number (out of 15) of global climate models projecting a decrease in future precipitation	1 °C of global warming			2 °C of global warming		
			Dry extreme	Median	Wet Extreme	Dry extreme	Median	Wet Extreme
Hunter River	770	8	-9%	-2%	4%	-17%	-4%	7%

- Runoff:

Table 9 Summary of projected impacts of climate change on runoff for the broad vicinity of the Hunter subregion

Basin	Historical precipitation (mm/year)	Number (out of 15) of global climate models projecting a decrease in future precipitation	1 °C of global warming			2 °C of global warming		
			Dry extreme	Median	Wet Extreme	Dry extreme	Median	Wet Extreme
Hunter River	92	11	-22%	-6%	7%	-40%	-10%	15%

- “The Permian units are associated with a series of coal measures and intervening marine sequences. The saline water associated with this geological unit is thought to have a controlling influence on the overall water quality of the Hunter River (Kellett et al., 1989). Groundwater

quality is generally brackish to saline (Mackie Environmental Research, 2006). Salinity within the hard rock aquifers associated with the Hunter coal seams is typically in the range 4000 to 12,000 $\mu\text{S}/\text{cm}$, but electrical conductivity (EC) has been recorded at over 26,000 $\mu\text{S}/\text{cm}$.”

- “The Hunter subregion is spatially dominated by fractured rock aquifers [...] however groundwater yields from these aquifers are generally low.”
- “The Hunter river basin includes a large proportion of salt bearing sedimentary rocks and soils, and surface and underground drainage from this contributes natural salinity to the river. But activities such as coal mining, power generation, industry and land clearing have increased the level of salinity in the river.”
- “Since the introduction of the Hunter River Salinity Trading Scheme in 1995, the river salinity quality has improved considerably.”
- “Both mining operations and river regulation affect the behaviour of water levels in the alluvial aquifer, and can alter the direction and magnitude of water exchange between the river, alluvial aquifers and fractured rock aquifers.”

Some of this information would be useful for the contextual statement for the 2014 MCA WAF, and also to inform a Hunter River Water Quality Analysis project.

FOR INFORMATION / DISCUSSION

**NSW Minerals Council
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Agenda Item 7

ANNUAL UHMD WORKSHOP - ISSUES RAISED - WATER

Issue

The working group needs to consider the issues raised at the 3 December 2014 annual UHMD workshop.

Background

More than seventy people attended the Annual UHMD workshop in Muswellbrook on 3 December 2014. The workshop aimed to evaluate the direction of the Dialogue and what the key issues are. There were a number of ideas developed for dealing with existing issues such as air quality, rehabilitation and the future use of mined land and social impacts, as well as new issues relating to economic diversification and industry-government partnership.

There was a strong focus on improving both government and community relations and communication. One of those key issues was a drive to invest, develop and 'diversify' the Upper Hunter economy so it can remain strong through the commodity cycles of the resource sector. Another key issue was the desire for an advocacy role to drive stronger industry-government partnership.

Part of the Annual UHMD Workshop involved prioritising issues and identifying ideas for action. These have been outlined in a workshop report (attached).

Issues and actions - water

No specific tasks were identified at the workshop that related to the Water Working Group. However there were some general discussions on issues that related to water:

- Alluvial lands should not be touched.
 - Look at what has been mined.
 - Identify areas in the Hunter Valley
- Incorporate water accounting into regulatory framework.
- Water tanks - analysis of depositions (for Emissions and Health WG).
- Potential / synergies between industry. e.g. potential for sharing water between mining and other industries.

Response

The issues raised appear to be already being addressed through existing initiatives such as:

- Strategic Regional Land Use Plan for the Upper Hunter and Agricultural Impact Statements (alluvial lands issue).
- Continued adoption of the MCA WAF in Annual Environmental Management Reporting (AEMR), not only in the Upper Hunter, but in NSW and across Australia.
- Identification of further reuse and recycling opportunities by companies as an evolution of Stage 2 of the MCA WAF.

Recommendation

NSWMC recommends that the working group considers a response to the issues raised at the annual workshop.

FOR INFORMATION/ DISCUSSION