

# Centennial Newstan (Awaba) Colliery End of Year Subsidence Management Report

**Report Number: 6**

**Date: 28-03-2014**

## **Distribution List:**

DTIRIS – Department of Trade & Investment, Regional Infrastructure & Services

- DTIRIS – Director Environmental Sustainability
- DTIRIS - Subsidence Executive Officer
- DTIRIS - District Inspector
- DTIRIS - Principal Subsidence Engineer
- DTIRIS - Subsidence Engineer
- NOW – NSW Office of Water
- OEH - Office of Environment & Heritage
- DOPI – Department of Planning & Infrastructure
- Ausgrid
- RailCorp (Transport NSW),
- Mine Subsidence Board,
- Eraring Energy,
- Telstra
- Newstan (Awaba) Mine Manager,
- Newstan (Awaba) Environmental Coordinator.

## General Comments:

- Approval to mine Stage 1 of Mine Subsidence Management Plan (MSMP) at Awaba Colliery was granted on 03/09/2007
- Stage 1 Mining completed on 26/06/2009.
- Stage 1 Monitoring variation from 3 to 6 monthly approved 28/06/2011.
- Stage 1 January and March 2014 resurveys recorded significant subsidence above Main South Crossline and part of 8NE centreline.
- Stage 1 Monitoring increased in active subsidence area until stable results are achieved.
  
- Approval to mine Stage 2 of MSMP at Awaba Colliery was granted on 29/08/2008
- Stage 2 Mining completed on 08/03/2012.
- Stage 2 Monitoring variation from 3 to 6 monthly approved 31/05/2013.
  
- Approval to mine MSMP 3 NORTH Area - Awaba Colliery was granted on 13/05/2009
- 3 North Mining completed on 25/01/2010.
- Subsidence monitoring in the 3 North Area is now completed.
- Monitoring points remain in place for future reference.
  
- Approval to mine Stage 3 of MSMP at Awaba Colliery was granted on 15/12/2010
- Stage 3 Mining Completed on 22/12/2011.
- Stage 3 Monitoring variation from 3 to 6 monthly approved 31/05/2013.
- Additional amendments to Stage 3 monitoring program in consultation with Principal Subsidence Engineer (PSE) and relevant stakeholders.
  
- Approval to mine MSMP East B Area at Awaba Colliery was granted on 27/07/2011
- East B Mining Completed on 21/12/2011.
- Subsidence monitoring in the East B Area is now completed.
- Monitoring points remain in place for future reference.
  
- **Awaba Colliery Great Northern Seam Mining Ceased 08/03/2012.**
- All Awaba Mine entries (Drifts and Shafts) were sealed in August 2012
- Underground workings are no longer accessible.

SMP Approval Condition No.	Requirement Summary	Comment / Description
22 (a)	<p><b>Summary of Subsidence and Environmental Monitoring Results</b></p>	<p>The Following subsidence surveys and inspections have been completed:</p> <p><b>Surface Surveys –</b></p> <p>All scheduled subsidence surveys completed at end of January 2014.</p> <p>Maximum subsidence in <b>2013 period</b> was in Main South Stage 1 - XL52 and XL53 ( -154 mm in July ), which was within the defined predicted subsidence levels.</p> <p>A resurvey in January 2014 found greater than predicted subsidence in Main South Stage 1 Area - along Main South Crossline between XL24 to XL66 – and 8NE Centreline between CL01 to CL16. Maximum subsidence was at XL52 (-388mm).</p> <p>In response to the January results – a further resurvey was done in March 2014.</p> <p>As of 31/03/2014, the maximum subsidence is at XL40 (-1112mm) on Main South Crossline in Stage 1.</p> <p>The significant increase in subsidence has occurred approximately 175 to 300 metres from the Main Northern Railway Line.</p> <p>There is no subsidence impact on monitoring points nearer to the Main Northern Railway, Ulan Rail Loop, Haul Road, Haul Road Bridge, Telstra Tower or Railcorp and Ausgrid Power Poles.</p>

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		<p>Visual Inspections found one case of surface impacts. This impact was a sinkhole in the Stage 3 area - found following heavy rain over the June 2011 long weekend. The hole was approximately 33x38 metres in surface area with cover ranging between 26-30 metres. The relevant government authorities and stake holders were informed of this within 24 hours of the discovery of the hole. Rehabilitation of the site has since been completed. The location of the sinkhole was plotted and is shown on the Stage 3 Face Position plan AW2176.</p> <p>A subsequent inspection in 2013 found evidence of the sinkhole reactivating. Further rehabilitation works are planned in 2014.</p> <p><b><i>Underground Surveys –</i></b></p> <p>All Awaba Mine entries (Drifts and Shafts) were sealed in August 2012 Underground workings are no longer accessible.</p>
22 (b)	<b>Analysis of Subsidence and Environmental Monitoring Results</b>	<p>Subsidence was within predicted levels in 2013.</p> <p>However the January and March Surveys of 2014 found greater than predicted subsidence in Main South Stage 1 Area.</p> <p>Centennial Survey prepared a plan showing zones of subsidence along monitoring points in relation to surface features and underground workings to help bring perspective to results. A PDF of this plan was sent to relevant government departments and stakeholders.</p> <p>A report has been prepared by a geotechnical consultant with regard to this event. The subsidence has had no adverse impact on surface infrastructure.</p>

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		<p>Environmental impacts have been confined to the one sinkhole as described above. It is most likely linked to a significant rainfall event in November 2013 – and is scheduled for further rehabilitation during 2014.</p>
22 (c)	<p><b>Trends in Monitoring Results</b></p>	<p>In general - the trend in monitoring results shows that the majority of subsidence occurs during and shortly after mining extraction.</p> <p>In the following months the rate of subsidence decreases toward a stable environment.</p> <p>However after approximately 6 years of relative stability – there has been greater than predicted subsidence in Main South Stage 1 Area in January to March 2014.</p>
22 (d)	<p><b>Management Actions of Potential Impacts</b></p>	<p>In general - current Public Safety and Subsidence Management Plans are considered adequate. The current monitoring schedule is based on 6 monthly resurveys.</p> <p>Following greater than predicted subsidence in Stage 1 Main South Cross line / 8NE Centreline area;</p> <ul style="list-style-type: none"> <li>• All relevant government agencies and stakeholders were notified as per condition 20 after results of January survey.</li> <li>• Centennial Newstan conducted a follow up survey – including strain measurements in early March. The results were also distributed to relevant government agencies and stakeholders.</li> </ul>

SMP Approval Condition No.	Requirement Summary	Comment / Description
		<ul style="list-style-type: none"> <li>• A meeting between Centennial Newstan and PSE was held on 25/03/2014 to discuss the mechanics and management of this occurrence.</li> <li>• Monitoring frequency is being increased to provide further data until the area becomes stable; and to monitor any possible increased subsidence moving toward the rail corridor.</li> <li>• A report prepared by a geotechnical consultant with regard to this event was distributed to Railcorp and the PSE on 27/03/2014.</li> <li>• A meeting between Centennial Newstan, Railcorp and PSE is scheduled to be held on 02/04/2014 to review monitoring results, and discuss relevant management measures.</li> </ul>

**Grant Watson**

**Centennial Newstan (Awaba) Colliery - Mine Manager**

For any comments or questions please contact

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