



CENTENNIAL COAL AWABA COLLIERY ANNUAL REVIEW

March 2016



Name of Operation	Awaba Colliery
Name of Operator	Centennial Newstan Pty Ltd
Development Consent/ Project Approval #	10_0038
Mining Lease #	CCL746, MPL327, MPL 328
Name of Holder of Mining Lease	Centennial Newstan Pty Ltd
Water License #	20BL173577 20BL173582 20BL173586
Name of Holder of Water License	Centennial Newstan Pty Ltd
MOP/RMP Start Date	August 2015
MOP/RMP End Date	August 2018
Annual Review Start Date	January 2015
Annual Review End Date	December 2015

I, Mick Cairney, certify that this audit report is a true and accurate record of the compliance status of Awaba Colliery for the period January 2015 – December 2015 and that I am authorized to make this statement on behalf of Centennial Newstan Pty Ltd.

Note:

- a) The Annual Review is an 'environmental audit' for the purposes of \$122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion) in an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.
- b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (intention to defraud by false or misleading statement maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents –maximum penalty 2 years imprisonment or \$22,000,or both).

Name of Authorised Reporting Officer	Mick Cairney
Title of Authorised Reporting Officer	Executive General Manager Operations
Signature of Authorised Reporting Officer	
Date	

Contents

1.	STATEMENT OF COMPLIANCE	. 5
2.	INTRODUCTION	. 6
3.	APPROVALS	. 7
4.	OPERATIONS SUMMARY	. 8
4.1.	NEXT REPORTING PERIOD	. 8
4.2.	EXPLORATION	. 9
4.3.	LAND PREPARATION	. 9
4.4.	CONSTRUCTION	. 9
4.5.	MINING	. 9
5.	ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW	. 9
6.	ENVIRONMENTAL PERFORMANCE	10
6.1.	NOISE	10
6.2.	AIR QUALITY	11
6.3.	SUBSIDENCE	12
6.4.	BIODIVERSITY	19
6.5.	HERITAGE	19
6.6.	WASTE	20
6.7.	RAINFALL MONITORING RESULTS	21
7.	WATER MANAGEMENT	21
7.1.	SURFACE WATER	21
7.2.	GROUND WATER	22
7.3.	WATER BALANCE	24
8.	REHABILITATION	25
8.1.	BUILDINGS	25
8.2.	SUBSIDENCE	25
8.3.	REHABILITATION OF DISTURBED LAND	25
8.4.	REHABILITATION TRIALS AND RESEARCH	27
9.	COMMUNITY	28
9.1.	COMPLAINTS	28
9.2.	COMMUNITY CONSULTATION	28
9.3.	COMMUNITY SPONSORSHIP	28
10.	INDEPENDENT AUDIT	28
11.	INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD	29
12.	ACTIVITES TO BE COMPLETED IN THE NEXT REPORTING PERIOD	30
13.	PLANS	31
14	APPENDICES	32

List of Tables

Table 1: Statement of Compliance	5
Table 2: Non-Compliances	5
Table 3: Awaba Colliery Environmental Contact Details	7
Table 4: Environmental Approvals held by Awaba Colliery	7
Table 5: Actions from previous Annual Review	9
Table 6: Summary of Monitoring Requirements	10
Table 7: Annual Average PM10 and TSP	11
Table 8: Subsidence Monitoring Results	12
Table 9: Rainfall at Newstan Colliery for the Period January 2015 to December 2015	21
Table 10: Water Balance	24
Table 11: Newstan Awaba Rehabilitation Summary	25
Table 12: Awaba Non Compliance	29
List of Figures	
Figure 1: Aerial photograph of Awaba Colliery surface facilities	7

List of Appendices

Appendix 1 – EPL443 2015 Annual Return

Appendix 2 – End of Year Subsidence Report

1. STATEMENT OF COMPLIANCE

Table 1: Statement of Compliance

Were all conditions of the relevant approval(s) complied with?

Development consent number	YES
CCL746	YES
MPL327	YES
MPL 328	YES

Table 2: Non-Compliances

Relevant Approval	Condition #	Condition summary	Compliance Status	Comment	Section addressed in Annual Review
EPL443	L3.1	Volume	Low	Due to a severe weather system hitting the area a power outage was experiences and the volume was unable to be calculated.	Section 11

Note: Compliance Status Key for Table 3

Risk Level	Colour Code	Description
High		Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium		Non-compliance with:
		 Potential for serious environmental consequences, but is unlikely to occur; or Potential for moderate environmental consequences, but is likely to occur
Low		Non-compliance with:
		Potential for moderate environmental consequences, but is unlikely to occur; or Potential for low environmental consequences, but is likely to occur
Administrative		Only to be applied where the non-compliance does not result in any risk of environmental harm (eg submitting a report to government later than required under approval conditions)

2. INTRODUCTION

Awaba Colliery was an underground coal mine operated by Centennial Newstan Pty Ltd (Centennial Newstan), within the Newstan Colliery Holding producing coal by the bord and pillar method, using continuous miners. The mine has been operational since 1947. During this time over 35 million tonnes of coal has been produced from the Great Northern Seam using a combination of first workings development, pillar extraction, pillar quartering, and pillar stripping.

An application for a Part 3A Project Approval was lodged in March 2010 by Centennial Newstan for the Awaba Colliery Mining Project (the "Project"), which sought approval from the Minister for Planning to allow ongoing and extended underground mining and associated surface operations. The project was declared by NSW Department of Planning as a Major Project under Part 3A of the EP&A Act, with Director General's Requirements (DGRs) issued on 22nd April 2010 (DA10_0038) for assessment under Section 75F of the Environmental Planning and Assessment Act (1979). The Environmental Assessment was submitted to the Department in September 2010. The Planning and Assessment Commission of New South Wales granted conditional approval to Centennial Newstan for their Part 3A Application on the 13th of May 2011.

The mine entry and primary surface facilities are located approximately 1 km south of Awaba Township and 5.5 km south west of Toronto on Wilton Road. The mine extends from the western extremity of Lake Macquarie to the eastern foothills of the Watagan Mountains.

In March 2012 the Awaba Colliery ceased mining operations as the available coal reserves were exhausted. All mine entries were decommissioned in 2012, removing access to the underground workings.

This AEMR has been developed in accordance with condition 3 of Schedule 5 of the Project Approval 10_0038.



Figure 1: Aerial photograph of Awaba Colliery surface facilities

Table 3: Awaba Colliery Environmental Contact Details

Name	Position	Email	Phone
Grant Watson	Mine Manager	Grant.Watson@centennialcoal.com.au	02 49560205
Nerida Manley	Environment & Community Coordinator	Nerida.Manley@centennialcoal.com.au	02 49560206

3. APPROVALS

Table 4: Environmental Approvals held by Awaba Colliery

Name	Description	Issued By	Expiry Date	Renewal Procedure
CCL746	Area above underground workings, within Crown Land.	Dept. Primary Industry (Mineral Resources)	31/12/2028	Manager Title and Property- North

Name	Description	Issued By	Expiry Date	Renewal Procedure
MPL327	Awaba Nitrogen Plant	Dept. Primary Industry (Mineral Resources)	05/08/2015	Manager Title and Property- North
MPL328	Part Awaba Stockpile	Dept. Primary Industry (Mineral Resources)	05/08/2015	Manager Title and Property- North
Mine Operations Plan (MOP)	Summary of Mining and Processing Activities – Newstan and Awaba	NSW Trade & Investment - Division of Resources & Energy	2018	MOP approved for the period August 2015 – August 2016
Environmental Protection Licence 443	Permits scheduled activity "coal mining" and discharge of water from licensed discharge points.	Environment Protection Authority	Perpetual	Requires payment and Annual Return February each year

4. OPERATIONS SUMMARY

4.1. NEXT REPORTING PERIOD

There was no mining undertaken during the reporting period. Previously mined areas can be found on Plan AW2245. The mine ceased underground operations in 2012, and the mine entries were sealed.

On 28 June 2011, the Awaba Coal Mine Rehabilitation and Environmental Management Plan dated April 2011 to 31 December 2015 was approved by the Department of Trade and Investment – Division of Resources and Energy (DRE) in accordance with the Mining Operations Plan Condition of Awaba Collieries mining leases. This REMP was also developed to satisfy the requirements of Project Approval (10-0038) Schedule 3 Conditions 28, 29 and 30.

In November 2014, Centennial Newstan submitted the Centennial Newstan Complex MOP for Operations and Care & Maintenance 2014 - 2017 therefore replacing the Newstan Colliery Mining Operations Plan 2014 - 2020, and the Awaba Colliery Rehabilitation and Environmental Management Plan (REMP). Centennial Newstan within this MOP includes the operations of both Newstan Colliery and Awaba Colliery. This MOP is currently with the DRE for approval.

4.2. EXPLORATION

No drilling occurred on CCL 746 within the reporting period. Drilling is undertaken in accordance with the *Awaba East Exploration Project Review of Environmental Factors* dated August 2008, approved on the 1/9/08, and *Stage 2 Awaba East Exploration Project Review of Environmental Factors* (REF) May 2009, approved on the 13/7/09. Modifications were made to the 2008 REF and approved on the 15/12/08, & 9/4/09, and a third modification to both REF's was approved on the 4/11/09.

4.3. LAND PREPARATION

No land preparation on the Awaba lease was undertaken for Awaba operations. Works completed for subsidence rehabilitation are included in Section 6.3 below.

4.4. CONSTRUCTION

No additional mine infrastructure for Awaba operations were constructed during the report period. Works onsite were limited to necessary maintenance of existing plant, or demolition and rehabilitation of existing infrastructure.

4.5. MINING

No mining activities were undertaken in the reporting period.

5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

Table 5: Actions from previous Annual Review

Action Required	Requested By	Action Taken	Where addressed in Annual Review
Ongoing sinkhole rehabilitation	DRE	Ongoing sinkhole rehabilitation.	Section 6.3
Management of waste equipment / materials	DRE	Two auctions were undertaken at Newstan in 2015 for redundant equipment onsite along with an extensive scrap metal recycling program.	Section 6.6
Undertake soil stabilization and revegetation works	DRE	Per site risk assessments this area is required to be a APZ for bushfire and can not be rehabilitated for safety reasons.	Refer to action taken.
Identify the approval	DRE	Ongoing	Section 6.5

Action Required	Requested By	Action Taken	Where addressed in Annual Review
requirements for the long term management options of the heritage items (ie maintain / renovate for future use, demolition and removal of asbestos etc)			
Decommission the underground tanks in accordance with the POEO Regulation 2008	DRE	Removal of underground tank has been budgeted for 2016.	Refer to action taken.

6. ENVIRONMENTAL PERFORMANCE

Table 6: Summary of Monitoring Requirements

Monitoring Type	Status	Report Section
Noise Monitoring	Quarterly	Section Error! Reference source not found.
Air Quality Monitoring	Ongoing	Section 6.2
Surface Water Monitoring Groundwater Monitoring	Ongoing Ongoing	Section 7.1 Section 7.2
Meteorological Monitoring	Ongoing	Section Error! Reference source not found.

6.1. NOISE

A Noise Management Plan for Awaba Colliery was developed in October 2011 as per Condition 2 of Schedule 3 and was approved by the Department of Planning and Infrastructure in November 2011.

Attended noise monitoring commenced in November 2011 at two locations identified within the Noise Management Plan and the Project Approval. The operator attended survey consists of a daytime period (7am – 6pm), an evening (6pm – 10pm) and two night surveys (10pm – 7am) for each of the monitoring locations.

Quarterly noise monitoring was undertaken in February, May, July and December in accordance with:

- Department of Planning and Infrastructure (DoPI) Project approval schedule 3 condition 1;
- Environmental Protection Authority (EPA) Condition M8.2 of EPL 443 dated December 2011
- Office of Environment & Heritage (OEH), Industrial Noise Policy (INP).

The quarterly monitoring showed that the noise emissions from Awaba Colliery showed full compliance with the noise criteria set out within Condition 1 of Schedule 3 along with the predictions made within the Environmental Assessment.

6.2. AIR QUALITY

6.2.1. Dust Deposition Gauges

An Air Quality & Greenhouse Gas Management Plan was established at Awaba in October 2011 in accordance with Condition 7 of Schedule 3 of the Project Approval and approved by the Department of Planning & Infrastructure in November 2011. In order to determine the effectiveness of the colliery's dust control measures, a network of dust depositional monitoring gauges have been established. Depositional gauges are located within the Colliery perimeter as well as adjoining areas. A total of 4 depositional gauges are utilised, all located within the Colliery boundary.

Samples are taken from the depositional gauges every 28 (± 2) days as per Approved Methods for the Sampling and Analysis of Air Pollutants in NSW as administered by the Office of Environment & Heritage. As predicted with in the Environmental Assessment for the Awaba Colliery Mining Project dust deposition levels were below the Project air quality criteria at all surrounding dwellings. The following graph Figure 2 displays Awaba's monthly dust results.

The Awaba Colliery Mining Project EA for DG's 1-4 found the monthly averages and annual averages were below 2.6 g/m2/month, which is within the development consent limit of 4 g/m2/month annual average. The EA states that the results indicated that total annual average dust deposition levels at all receptors surround the Project are predicted to be below the Project criterion of 4 g/m2/month when using a conservative background level of 2 g/m2/month.

6.2.2. High Volume Dust Sampling

A requirement of the Project Approval and the EPL was to install a high volume air sampler to evaluate the performance of the project. This was installed in 2014/2015 at the location known as the Nitrogen Plant. M

High volume dust sampling was undertaken to monitor dust deposition rates and concentrations of Total Suspended Particulates (TSP) and Suspended Particles PM10.

Table 7: Annual Average PM10 and TSP

Annual Average PM10 (ug/m3) and TSP (ug/m3)		
Year	PM10	TSP

2015	9.3	18.4

The rolling annual average results for both locations were below the criteria for TSP of 90 μ g/m3 (annual average), and PM10 of 30 μ g/m3 (annual average), and the results were also below the PM10 24 hour limit of 50 μ g/m3 during the 2014 reporting period.

6.2.3. Greenhouse Gas Monitoring

Awaba ceased operations and sealed the shafts and portals in 2012. The minimal usage & greenhouse gas information (electricity) is included within Newstan Colliery reporting.

6.3. SUBSIDENCE

Monitoring in the reporting period was conducted in accordance with the Subsidence Management Plan (SMP), SMP approval conditions and the Extraction Plan (as required by Condition 11 of Schedule 3 of the Project Approval) and the associated subsidence monitoring program. Table 8 briefly outlines the subsidence monitoring and results conducted in accordance with the relevant SMP conditions.

Table 8: Subsidence Monitoring Results

SMP Approval Condition No.	Requirement Summary	Comment / Description
22 (a) – Stage 1	Summary of Subsidence and	
23 (a) – Stage 2	Environmental	The Following subsidence surveys and
24 (a) – Stage 3	Monitoring Results	inspections have been completed:
		Surface Surveys -
		All scheduled subsidence surveys completed to December 31st, 2015.
		All scheduled environmental monitoring completed to December 31 st , 2015.
		Maximum subsidence in 2015 period
		was in Main South Stage 2 , XLE17 (-1.401m in December).
		The only reported incident in 2015 was in Stage 2 . A localised sinkhole, 3.5 metres in diameter, and 2.8 metres deep, was found on 03/02/2015 near 8SW29-30. The sinkhole has been filled. The area is being rehabilitated in

SMP Approval Condition No.	Requirement Summary	Comment / Description
		accordance with the sinkhole rehabilitation plan.
		Stage 1 Area - Maximum subsidence was at XL40 (-1.340m in December).
		Stage 3 Subsidence monitoring results in 2015 were well within predicted levels and continue to be relatively stable.
		A visual inspection found evidence of a previously reported sinkhole beginning to partially reactivate.
		The sinkhole was first found and reported following heavy rain over the June 2011 long weekend.
		The sinkhole has been filled. The area has been rehabilitated in accordance with the sinkhole rehabilitation plan.
		Environmental inspections were carried out in January 2014. Traversing between transects involved walking along over a kilometre of Stony Creek, including part of a tributary. The 2014 survey found no impact on Stony Creek, and was the last Ecological Survey.
		Underground Surveys –
		All Awaba Mine entries (Drifts and Shafts) were sealed in August 2012
		Underground workings are no longer

SMP Approval Condition No.	Requirement Summary	Comment / Description
		accessible.
22 (b) - Stage 1 23 (b) - Stage 2 24 (b) - Stage 3	Analysis of Subsidence and Environmental Monitoring Results	After reporting greater than predicted subsidence in both Stage 1 and Stage 2 during 2014 –
		Monitoring Results for 2015 were consistently relatively stable throughout the year.
		January and March Surveys of 2014 found greater than predicted subsidence in Main South Stage 1 Area.
		A report was prepared by a geotechnical consultant with regard to this event. The subsidence has had no adverse impact on surface infrastructure.
		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.
		The significant increase in subsidence occurred approximately 175 to 300 metres from the Main Northern Railway Line. 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.
		There have been no observed visual environmental impacts in Stage 1 Area. No visual disturbance has been identified on tracks & trails during routine inspections.

SMP Approval Condition No.	Requirement Summary	Comment / Description
		July 2014 Surveys found greater than predicted subsidence in
		Main South Stage 2 Area.
		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.
		The significant increase in subsidence occurred approximately 250 to 350 metres from the Main Northern Railway Line. 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.
		Cracking was observed and reported in the Stage 2 area associated with the greater then predicted subsidence.
		No visual disturbance has been identified on tracks & trails during routine inspections.
		Stage 3 Subsidence monitoring results in 2015 were within predicted levels and continue to be relatively stable.
		Environmental impacts in Stage 3 have been confined to the minor reactivation of one sinkhole.
22 (c) – Stage 1 23 (c) – Stage 2	Trends in Monitoring Results	In general - the trend in monitoring results shows that the majority of subsidence occurs during and shortly
24 (c) – Stage 3		after mining extraction.
		In the following months the rate of subsidence decreases toward a stable environment.

SMP Approval Condition No.	Requirement Summary	Comment / Description
		However after approximately 6 years of relative stability – there was greater than predicted subsidence in Main South Stage 1 and Stage 2 in 2014 .
		During 2014 – after the initial sudden increase in subsidence - results began to trend toward decreasing movement.
		In 2015 surveys have consistently shown relatively stable results.
22 (d) - Stage 1 23 (d) - Stage 2 24 (d) - Stage 3	Management Actions of Potential Impacts	In general - current Public Safety and Subsidence Management Plans are considered adequate.
		The current monitoring schedule is based on 6 monthly resurveys.
		However, following the greater than predicted subsidence in Stage 1 and Stage 2 - Agreed temporary amendments increased monitoring to fortnightly monitoring of 8NE, 9SW, 8SW and 6SW – and monthly monitoring of MSXL and MSXLE during 2014 and 2015.
		After consistent relatively stable monitoring results - On October 7 th , 2015, approval was granted to vary this monitoring to monthly.
		Following greater than predicted subsidence in Stage 1 Main South Cross line / 8NE Centreline area in 2014;
		All relevant government agencies and stakeholders were notified as per condition 20 after results of January survey.
		Centennial Newstan conducted a follow up survey – including strain measurements in early March. The results were distributed to relevant government agencies and stakeholders.
		A visual inspection was carried out on 21/03/2014 - by a Geotechnical

SMP Approval Condition No.	Requirement Summary	Comment / Description
		consultant accompanied by the Mine Manager and Mine Surveyor. No visual signs of subsidence were observed. The results were included in a geotechnical report.
		A meeting between Centennial Newstan and PSE was held on 25/03/2014 to discuss the mechanics and management of this occurrence.
		A report prepared by a geotechnical consultant with regard to this event was distributed to Transport NSW and the PSE on 27/03/2014. Further reports were distributed on 2/6/2014 and 23/6/2014.
		A meeting to discuss the increased subsidence in Stage 1 was held in Chatswood on 02/04/2014. It was attended by the Principal Subsidence Engineer (PSE), Centennial Newstan, an independent geotechnical consultant, and Transport NSW. During the Chatswood meeting – it was agreed to temporarily increase the frequency of surveys until a trend of stable results was achieved. Note that as agreed during the meeting in Chatswood – subsidence of 50mm or greater observed within the Railway Protection Zone (RPZ) - will trigger further communication and review of the situation.
		Monitoring frequency was increased on 04/04/2014 to provide further data until the area became stable; and to monitor any possible increased subsidence moving toward the rail corridor.
		Following greater than predicted subsidence in Stage 2 Main South Crossline Extension / 8SW Centreline area - All relevant government agencies and stakeholders were notified as per condition 21, after results of the July survey.

SMP Approval Condition No.	Requirement Summary	Comment / Description
		A visual inspection carried out by the Mine Surveyor found evidence of minor surface impacts within these areas. Results were forwarded to PSE, relevant government departments and stakeholders on 14/07/2014.
		Agreement was reached with the PSE and Transport NSW - to increase monitoring frequency to provide further data until the area becomes stable; and to monitor any possible increased subsidence moving toward the rail corridor. Subsidence of 50mm or greater observed within the Railway Protection Zone (along 8SW) or the Railway Mining Barrier (along 6SW) - will trigger further communication and review of the situation. Monitoring frequency was increased on 16/07/2014.
		A meeting to discuss the trend of consistent relatively stable monitoring results in both Stage 1 and Stage 2 - was held in Burwood on 12/08/2015. It was attended by the Principal Subsidence Engineer (PSE), Centennial Newstan, an independent geotechnical consultant, and Transport NSW. During the Burwood meeting – it was agreed to amend the frequency of surveys from fortnightly to monthly for a period of six months (commencing from August). If results continued to be stable during this period – agreement would be made to further reduce monitoring frequency.
		On October 7 th , 2015, official approval was granted by PSE to vary this monitoring to monthly.
		Following the reporting of the Stage 2 localised sinkhole in February 2015, - The relevant government authorities and stake holders were informed within

SMP Approval Condition No.	Requirement Summary	Comment / Description
		24 hours of the discovery of the hole. The location of the sinkhole was plotted and is shown on the Stage 2 Face Position plan AW2075. The sinkhole has been filled. The area is being rehabilitated in accordance with the Sinkhole Rehabilitation Plan.
		Following the formation of the Stage 3 Sinkhole in June 2011 -The relevant government authorities and stake holders were informed 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. Due to the partial reactivation of this hole -further minor rehabilitation works were carried out during 2015, in accordance with the Sinkhole Rehabilitation Plan.

6.4. **BIODIVERSITY**

Awaba Colliery has previously undertaken riparian surveys along Stony Creek as a requirement of Condition 23 of Schedule 3 of the Project Approval. As mining ceased in 2012 it has been deemed that this monitoring is no longer required.

No additional flora or fauna monitoring was requested by the Director General, Department of Planning & Infrastructure during the reporting period.

6.5. HERITAGE

Cultural heritage management at Awaba Colliery is documented in the Archaeology and Cultural Heritage Management Plan completed in October 2011.

In 2012 Centennial Coal developed the Centennial's Northern Holdings Aboriginal Cultural Heritage Management Plan. This document aims to provide a consistent approach to consultation between Centennial and the Aboriginal community as well as identify standard Aboriginal cultural heritage monitoring and management requirements.

Scarred Tree AHIMS#45-7-0318 (RPS ST 01) was identified in the northern portion of the Main South Mining area. This area was due to be undermined and thus the site was assessed for risk of harm by using observations of similar trees which had already been undermined in the southern portion of the Main South Mining area. The risk of harm

identified was that the effects of subsidence may destabilise the tree resulting in tilting and potentially its collapse. Although this risk was assessed to be low; a monitoring program was commenced to ensure that the site was not harmed. This monitoring program began in 2010 when the site was first identified. It has been running for three years and has covered the pre-mining, mining and post mining phases. It was considered that tilting of greater than 10 degrees would pose a risk that the tree may fall over and consequently posed a risk of harming the site. During the course of monitoring, less than one degree of tilt was observed and thus there was no risk of harm to the site. The physical tree condition also had not changed as a result of subsidence. All subsidence effects in the vicinity of AHIMS#45-7-0318 have now occurred. There is no further risk to the site as a result of subsidence. Monitoring ceased in 2013.

During the reporting period quarterly subsidence inspections were undertaken for the areas of moderate and high Aboriginal archaeological sensitivity (as identified in the Aboriginal Heritage Impact Assessment completed for the Awaba Colliery Mining Project) within the East B Area, along Stony Creek and adjacent to a tributary of Stony Creek. Subsidence inspections completed in 2014 found no visual disturbances, or abnormal changes due to mining operations in these areas.

European heritage items at the Awaba Colliery have been identified within the Proposed Schedule of Heritage Sites and Items (Table 11). Each of these items has been proposed for heritage listing within the Lake Macquarie Local Government Area (LGA) Local Environmental Plan (LEP). It is important to emphasise that the items in Table 8 will not appear within the Lake Macquarie LGA LEP because they are only listed within the proposed/draft schedule.

The buildings including the Administration Office and the Workshop at the Awaba Colliery Pit Top area associated with the Awaba State Mine (AW-07) have been identified with local significance in the Lake Macquarie Inventory, in addition to the Awaba-Wangi Railway Line under the same item number (AW-07). The Water Pumping Station (AW-06) has also been identified in two previous reports as having a very high potential local heritage significance in term of representing extractive industries in the area (Suters Architects Snell 1993a; Suters Architects Snell 1996b).

Awaba Colliery also prepared and submitted a Post Mining Heritage Management Plan in accordance with Condition 31 of Schedule 3 of the Project Approval. This management plan will include a study of the significance of the existing European heritage on the site, and was submitted to various stakeholders for consultation before being submitted to the Department of Planning & Infrastructure for Approval in 2012.

Identification of the approval requirements for the long term management options of Awaba Colliery is still being decided. No changes will be made to the site until consideration has been made to whether or not the site will be maintained, renovated for future use or demolition of the site.

6.6. WASTE

Waste production from the Colliery is negligible since mine closure. The waste management system is maintained, however now only includes minimal general waste.

General rubbish from the operation is sorted and placed into bins for recycling, reuse and disposal to land fill. Recycling at Awaba includes cardboard and paper from the offices.

In 2015 Newstan Colliery undertook a large site clean up and an auction to sell off redundant and scrap material from site which contributed to the increase in scrap metal and waste volume for the reporting period. This included redundant equipment from Awaba Colliery.

The Waste Management System is monitored via an as required inspection where the status of waste cardboard/paper containers are reviewed for appropriate disposal, and recorded for compliance with the waste tracking guidelines within the POEO Act.

6.7. RAINFALL MONITORING RESULTS

The total monthly rainfall data is shown below in Table 9.

Table 9: Rainfall at Awaba Colliery for the Period January 2015 to December 2015.

2015 Month	Awaba Colliery Total Rainfall (mm)
January	235
February	57.2
March	134
April	489
May	172
June	56
July	15.4
August	21.8
September	73
October	48.4
November	142
December	148
Total	1591.8

A total of 1591.8 mm of rainfall was recorded at Awaba Colliery during the reporting period. The total annual rainfall for 2015 was greater than the total rainfall (988.5mm) recorded in 2014. The wettest period was in April 2015 recording 489mm.

7. WATER MANAGEMENT

7.1. SURFACE WATER

Water monitoring is undertaken in accordance with the approved Water Management Plan, Project Approval and Environment Protection Licence 443 requirements. One discharge was recorded from licenced Discharge Point 9 in 2014. No other discharges occurred from Awaba Colliery in 2014 or 2013 and therefore no comparisons in the results can be made. Further information is provided in the Annual Return in Appendix 1. Surface monitoring locations are provided in on Plan AW1040.

The Water Management Plan for Awaba Colliery was developed in October 2011 as per Condition 17 - 22 of Schedule 3 of the Project Approval and was approved by the Department of Planning and Infrastructure in November 2011.

The surface water risk assessment (failure modes and effects analysis) was reviewed for the Awaba Colliery in 2012.

Upgrades to the pumping system at the Awaba Pollution Control Dam (PCD) was undertaken in 2014 to reduce the likelihood of discharge. Plans for the expansion of the PCD have been put on hold.

Upstream and downstream sampling has continued along Stony Creek to establish natural background concentrations, along with the introduction of an additional reference site in the Jigadee Creek catchment area as recommended in the surface water assessment completed for the Environmental Assessment.

There was one discharge from LDP009 during the reporting period which has been recorded in the Annual Return which can be found in Appendix 1.

No other discharges occurred through licenced discharge points during the reporting period.

7.2. GROUND WATER

Water underground is generated from groundwater which is released from the strata into underground mine workings. The collected water gravitates through an extensive goaf/underground dam system that allows filtration and settlement. The water can then be pumped from the mine via licensed discharge point 004, and via the 10 South Borehole into the Eraring Ash Dam. Mine water Discharges from 10 South were ceased in August 2013. A pump station at LDP004 was re-established and commissioned in September 2013. Pumping from LDP004 has not commenced in the report period, apart from waters discharged during the commissioning process.

In August 2013 an inspection of an unnamed watercourse which flows to Muddy Lake identified an area of sodden ground which resulted in a water flow. This visual inspection indicated clear water with iron staining in the sediment.

The area affected is approximately 160m to the South of the nearest Awaba workings. The seepage area has shown results of low pH, high conductivity and other analytes.

Awaba Colliery workings have slowly been filling with water over several years. This rise in water level in the underground workings has occurred as a result of rainfall events infiltrating subsidence cracks and sinkholes, and groundwater infiltration. Awaba had also been receiving water under the EPL from Newstan Colliery of up to 4 ML/Day from 15 October 2011 to 27 June 2013. Ongoing monitoring is currently being undertaken at this location. The level within the workings was at 15m RL at the end of the reporting period.

In identification of the seepage area the following actions were undertaken:

- Initial water quality monitoring & establishment of monitoring points to determine water quality at the seepage area & downstream. After water quality returned unfavourable results, the following actions were undertaken;
- An assessment of water quality within the unnamed creek including a comparison against the Awaba Colliery underground water quality to determine if there are similarities.
- A preliminary Terrestrial Ecology Assessment.
- A preliminary Aquatic Ecology Assessment.
- Ongoing Monthly water quality monitoring & review of data.
- Monthly borehole water dipping and water quality analysis.
- Annual Terrestrial Ecology Assessment & establishment of permanent quadrats in spring 2014.
- Commencement of Biannual Aquatic Ecology Assessments in spring 2014. This
 has been developed to align with assessments carried out for Cooranbong
 Services Site.

The results of monitoring and change to the wetting regime and water quality within the seepage area has had or may have the following impacts on terrestrial and aquatic ecology:

- In the long term, an increase in the degree of waterlogging and inundation in the groundcover and changes to the flow within the creek may lead to a change in the vegetation community at the seepage area
- Changes in water quality as a result of the seepage are likely to result in the site being unable to support Swamp Sclerophyll Forest
- Changes in vegetation community that result in a loss of understory shrubs, leaf litter, hollow logs and mature trees (including Swamp Mahogany) would decrease the available foraging habitat for reptiles, ground-dwelling and arboreal mammals, bats and forest birds.
- Changes in water quality as a result of the seepage are likely to render the area unable to support threatened and migratory fauna through both loss of forage habitat and changes in water quality and chemistry resulting in an undrinkable water source.
- There is a high risk of impact to a Groundwater Dependent Ecosystem (Swamp Sclerophyll Forest).
- There was a notable decrease in the levels of macroinvertebrate taxa richness, EPT richness and SIGNAL 2 at SP5 (SW013) since the July 2012 monitoring events. The macroinvertebrate community at SP5 (SW013) is no longer considered a non impacted site.

• If the acidic seepage continues on a long term basis the site will be unable to support a diverse aquatic system and will affect aquatic fauna recruitment rates into the system.

In January 2015 a consultation session was held with the relevant government departments and the Rehabilitation Works Plan is being developed in consultation the DRE, OEH, NOW, EPA & LMCC in accordance with the Section 240 Notice from the DRE. This Rehabilitation Works Plan will include the following:

- Details of the ongoing Water Quality Monitoring,
- Details of the ongoing Macro-invertebrate Monitoring,
- Details of the ongoing Terrestrial Ecology Monitoring,
- Completing an options assessment, which will include the feasibility of rehabilitation options, and any other options which may result from consultation,
- On selection of a preferred option, a review Rehabilitation Works Plan is to be completed, with additional information with regards to the final rehabilitation completion criteria.

Centennial is continuing to consult with the relevant government departments to address the issue.

In October 2011, a Groundwater Monitoring Program was developed in accordance with Condition 21 of Schedule 3 of the Project Approval (10_0038) and approved by the Department of Planning and Infrastructure in November 2011.

As recommended by the Groundwater Monitoring Program two groundwater bores were installed in February 2012, with water level loggers. One bore was installed above the Stage 3 mining area, and the other further downstream to the north of the Awaba pit top within the Stony Creek alluvium associated with the third order reach of Stony Creek. The boreholes are to a maximum depth of 10m below ground level (bgl).

7.3. WATER BALANCE

The water balance completed for the Awaba Colliery Water Management Plan and for the Awaba Colliery Mining Project predicted that the annual average discharge (ML/year) from the Awaba underground workings would be 278.1 ML per annum. Table 10 includes the actual quantities discharged from the Awaba Colliery during 2015.

Table 10: Water Balance

Year	Water pumped from 10 South (ML)	LDP004 (ML)	LDP009 (ML)
2015	0	0	*

One discharge occurred at LDP009 but due to power failure the volume was unable to be calculated. Further information can be found in Section 11 of this report.

8. REHABILITATION

8.1. BUILDINGS

No additional buildings were undertaken during the report period at Awaba. No buildings were removed during the reporting period.

8.2. SUBSIDENCE

Sinkhole Rehabilitation was undertaken during the reporting period in accordance with the Sinkhole Rehabilitation Management Plan. A total of 3 sinkholes and 1 historical crack for Newstan were rehabilitated in 2015.

The following occurred during the rehabilitation process:

- Each hole when finished was raised up in height and crowned off / re-shaped to shed water into diversion drains cut in around each hole:
- Access tracks to each hole were seeded with grass seed only to allow future access / ongoing monitoring;
- All holes were hand seeded with native mix as specified;
- All diversion drains were hydroseeded with grass seed and a range of sediment controls were put in place including silt fences, straw bales, rock check drains and boulders;
- All trees and vegetation cleared were spread over rehabilitated areas;
- All water was redirected around the first hole, across the access track and under power lines and around holes disturbed area. Either side of these holes using trapaziodal drains;
- Levels were taken using surveyors to determine fall from the second hole to the lowest point in Hawkmount Rd where water would naturally flow before subsidence issues:

Sinkhole rehabilitation is planned to continue in 2016. Rehabilitation monitoring and any additional maintenance and weed management will occur on previously rehabilitated sinkholes as required.

8.3. REHABILITATION OF DISTURBED LAND

The Newstan and Awaba MOP Complex was approved in August 2015 for the period August 2015 – August 2018.

Table 11 displays a rehabilitation summary for the Newstan and Awaba Collieries.

Table 11: Newstan Awaba Rehabilitation Summary

	Area Affected / Rehabilitated (ha)		
Domain	Total Area at MOP start (Plan 3A)	Total Area at end of MOP (Plan 3A)	
Mine Lease Area			
Mine Lease(s) Area	3989.9	3989.9	
Domain 1: Infrastructure Area			

	Area Affected / Rehabilitated (ha)		
Domain	Total Area at MOP start (Plan 3A)	Total Area at end of MOP (Plan 3A)	
Active Mining Area	102	102	
Decommissioning	-	-	
Landform Establishment	-	-	
Growth Medium Development	-	-	
Ecosystem and Land Use Establishment	-	-	
Ecosystem and Land Use Sustainability	-	-	
Relinquished Lands	-	-	
Total	102	102	
Domain 2: Tailings Storage Facility			
Active Mining Area	56.2	56.2	
Decommissioning	-	-	
Landform Establishment	7.0	7.0	
Growth Medium Development	-	-	
Ecosystem and Land Use Establishment	11.7	11.7	
Ecosystem and Land Use Sustainability	20.8	20.8	
Relinquished Lands	-	-	
Total	95.7	95.7	
Domain 3: V	Vater Management Area		
Active Mining Area	11.8	11.8	
Decommissioning	-	-	
Landform Establishment	-	-	
Growth Medium Development	-	-	
Ecosystem and Land Use Establishment	-	-	
Ecosystem and Land Use Sustainability	-		
Relinquished Lands	-	-	

	Area Affected / Rehabilitated (ha)	
Domain	Total Area at MOP start (Plan 3A)	Total Area at end of MOP (Plan 3A)
Total	11.8	11.8
Domain 5	: Stockpiled Material	
Active Mining Area	12.0	12.0
Decommissioning	-	-
Landform Establishment	-	-
Growth Medium Development	-	-
Ecosystem and Land Use Establishment	-	-
Ecosystem and Land Use Sustainability	-	-
Relinquished Lands	-	-
Total	12.0	12.0-
Domain 8: Underground Mining Area		
Active Mining Area	0	0
	(Area above workings is 5088 ha)	U
Decommissioning	-	-
Landform Establishment	-	-
Growth Medium Development	-	-
Ecosystem and Land Use Establishment	-	-
Ecosystem and Land Use Sustainability	-	-
Relinquished Lands	-	-
Total	-	-

8.4. REHABILITATION TRIALS AND RESEARCH

No rehabilitation trials occurred during the reporting period.

9. COMMUNITY

9.1. COMPLAINTS

There were no complaints made during the 2015 reporting period regarding Awaba Colliery operations.

9.2. COMMUNITY CONSULTATION

Awaba Colliery is supportive of its local community and seeks opportunities to provide assistance to community groups whenever possible.

A Community Consultative Committee (CCC) has been in place at Newstan since 1999. In 2011 Awaba Colliery was joined into the Newstan Colliery CCC. The Committee generally meets quarterly to review the environmental performance of the mine and other relevant matters. Minutes of the meeting are kept and distributed by the independent Chairman. The minutes are also available on the Centennial Newstan website. Meetings of the Newstan and Awaba Colliery CCC were held in February, May, July and October during the reporting period.

9.3. COMMUNITY SPONSORSHIP

Newstan and Awaba Collieries continues to support the local community through various sponsorship avenues such as:

- Chuck Duck Breakfast
- Hunter Valley Research Foundation
- HVTC Host Safety Awards
- NAIDOC Week Event
- Carey Bay Preschool
- Blackalls Park Primary School

10.INDEPENDENT AUDIT

There is no requirement for Awaba Colliery to undertake an External Independent Environmental Audit.

11.INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

Table 12: Awaba Non Compliance

Nature of the incident/non-compliance	At approximately 4:10am Tuesday the 21st April water commenced overflowing from the Pollution Control Dam through LDP009 at the Awaba Colliery. A water sample was taken immediately.
	Due to a severe east coast low weather system hitting the area a power outage was experienced and the volume was unable to be calculated.
Date of incident/ non-compliance (if known; if not known state not known)	21 April 2015
The location of the incident/ non-compliance (include a figure if appropriate), if known	LDP009
Detail the cause of the incident/non-compliance	An east coast low system resulted in heavy rainfall and strong winds. The event was later declared as a natural disaster for the region by the NSW Government.
	The storm commenced Monday night 20 April 2015 and continued until 24 April 2015. The power to the local area dropped out late Monday night /Early Tuesday morning. 322.5mm of rain was recorded on site over the duration of the storm period.
Detail action that has been, or will be, taken to mitigate any adverse effects of the incident/ non-compliance	The following actions were taken to minimize the discharge from the Pollution Control Dam through LDP009.
	Water within the PCD is pumped to a low level to increase the capacity of the dam There are two pumps installed in the dam to increase the pumping capacity away from the dam Sampling was undertaken upstream and downstream of the discharge point.
Detail action that has been, or will be, taken to prevent recurrence of the incident/non-compliance	The following actions have been undertaken to minimize the potential for future discharges from the Pollution Control Dam through LDP009:
	 The pumps within the PCD were upgraded to increase the pumping capacity An alarming system has been

	installed on the PCD to notify the site when the dam is approaching the discharge level Additional storage area has been developed on the old stockpile area to slow the flow into the PCD.	

12.ACTIVITES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

Activities proposed for the 2015 reporting period include;

- Maintenance of the Awaba Colliery pit top and remaining buildings
- Rehabilitation of sink holes in accordance with the Sinkhole Rehabilitation Plan.
- Ongoing consultation the DRE, OEH, NOW, EPA & LMCC to resolve the seepage.

13.PLANS

AW2245 - Great Northern Seam Workings.

AW2260 - Location of Licenced Discharge Points and Surface Water Monitoring Points

AW2261 – Location of Air, Noise, Weather, Water – Monitoring points, and Water Management Devices

14.APPENDICES

Centennial Coal

Centennial Coal Company Limited P O Box 1000

Toronto NSW 2283

www.centennialcoal.com.au



Annual Return

CENTENNIAL NEWSTAN PTY LIMITED



ANNUAL RETURN

LICENCE NO	443		
LICENCE HOLDER	CENTENNIAL NEWSTAN PTY LIMITED		
	*		
REPORTING PERIOD	01-Jan-2015 to 31-Dec-2015		
If your licence has been transferred, suspended, surrendered or revoked by the EPA during this reporting period, cross out the dates above and specify the new dates to which this Annual Return relates below:			
REVISED REPORTING PERIOD / / to / /			
(Note: the revised reporting p	(Note: the revised reporting period also needs to be entered in Section E)		
THIS ANNUAL RETURN MUST BE RECEIVED BY THE EPA BEFORE 01-Mar-2016			
submitted to the EPA for your licence. Failure to submit the ends may result in:	must be completed, including certification in Section I, and no later than 60 Days after the end of the reporting period is Annual Return within 60 days after the reporting period by Notice for \$1500 (individuals) or \$3000 (corporations);		

Please send your completed Annual Return by Registered Post to:

Regulatory and Compliance Support Unit Environment Protection Authority PO Box A290 SYDNEY SOUTH NSW 1232

It is an offence to supply any information in this form to the EPA that is false or misleading in a material respect, or to certify a statement that is false or misleading in a material respect.

THERE IS A MAXIMUM PENALTY OF \$250,000 FOR A CORPORATION OR \$120,000 FOR AN INDIVIDUAL.

Details provided in this Annual Return will be available on the EPA's Public Register in accordance with section 308 of the Protection of the Environment Operations Act 1997.

Annual Return

CENTENNIAL NEWSTAN PTY LIMITED



Use the checklist below to ensure that you have completed your Annual Return correctly. (\checkmark the boxes)

	CHECKLIST		
✓	Section A:	All licence details are correct	
✓	Section B1:	You have entered the correct number in the complaints table	
1	Section B2 - B3: If there are tables, you have provided the required details		
✓	Section C: You have answered question 1, and 2 if applicable		
NA	Section D:	If applicable, you have completed all load calculation worksheets	
✓	Section E:	You have answered question 1, 2, 3, 4, 5 and 6 if applicable	
✓	Section F: You have answered question 1, 2 and 3 if applicable		
✓	Section G:	ction G: The Annual Return has been signed by appropriate person(s) and, if applicable, the revised reporting period entered	
✓	Make a copy of the completed Annual Return and keep it with your licence records		
Ø	Attach a cheque (unless you have paid separately) for the payment of the administrative fee for the next licence fee period fand by EFT		

Please send your completed Annual Return by Registered Post to:

Regulatory and Compliance Support Unit Environment Protection Authority PO Box A290 SYDNEY SOUTH NSW 1232 **CENTENNIAL NEWSTAN PTY LIMITED**



A Statement of Compliance - Licence Details

ALL licence holders must check that the licence details in Section A are correct

If there are changes to any of these details you must advise the EPA and apply as soon as possible for a variation to your licence or for a licence transfer.

Licence variation and transfer application forms are available on the EPA website at: http://www.epa.nsw.gov.au/licensing, or from regional offices of the EPA, or by contacting us on telephone 02 9995 5700.

If you are applying to vary or transfer your licence you must still complete this Annual Return.

A1 Licence Holder

Licence Number

Licence Holder CENTENNIAL NEWSTAN PTY LIMITED

443

Trading Name (if applicable)

ABN 68 101 508 865

A2 Premises to which Licence Applies (if applicable)

Common Name (if any)

AWABA COLLIERY

Premises

WILTON RD AWABA NSW 2283

A3 Activities to which Licence Applies

Mining for Coal Coal Works

A4 Other Activities (if applicable)

Sewage Treatment Systems

A5 Fee-Based Activity Classifications

Note that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Mining for coal	> 0.00 - 500,000.00	T produced
Coal works	> 0.00 - 2,000,000.00	T handled

A6 Assessable Pollutants (Not Applicable)

CENTENNIAL NEWSTAN PTY LIMITED



B Monitoring and Complaints Summary

B1 Number of Pollution Complaints

Number of complaints recorded	ng period.		
If no complaints were receive complete the table below.	0		
Pollution Complaint Category	Number of Complaints		
Air			
Water			
Noise			
Waste			
Other			

B2 Concentration Monitoring Summary

For each monitoring point identified in your licence complete all the details for each pollutant listed in the tables provided below.

If concentration monitoring is not required by your licence, no tables will appear below.

Note that this does not exclude the need to conduct appropriate concentration monitoring of assessable pollutants as required by load-based licensing (if applicable).

CENTENNIAL NEWSTAN PTY LIMITED



Discharge & Monitoring Point 1

Discharge to waters

Discharge quality monitoring Volume montoring, Borehole located on eastern side of railway labelled as LDP1 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Conductivity	microsiemen s per centimetre	0	0	-	-	:=:
Oil and Grease	milligrams per litre	0	0	-	-	
рН	рН					
		0	0	=	-	-
Total suspended solids	milligrams per litre	0	0	-	(=	*

Discharge & Monitoring Point 2

Discharge to waters

Discharge quality monitoring

Volume monitoring, Borehole located along Hawk Mount Rd labelled as LDP2 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Conductivity	microsiemen s per centimetre	0	0	· ·	87.	
Oil and Grease	milligrams per litre	0	0	æ	26	æ
рН	На	0	0	5	-	•
Total suspended solids	milligrams per litre	0	0			2

Discharge & Monitoring Point 3

Discharge to waters
Discharge quality monitoring

CENTENNIAL NEWSTAN PTY LIMITED



Volume monitoring, Borehole located on western side of Railway labelled as LDP3 on plan titled "Location" of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Conductivity	microsiemen s per centimetre	0	0	8	8	ë
Oil and Grease	milligrams per litre	0	0	80	(ä
рН	рН	0	0	(m)	i#2	2
Total suspended solids	milligrams per litre	0	0	*1		-

Discharge & Monitoring Point 4

Discharge to waters

Discharge quality monitoing

Volume monitoring, Borehole located along Hawk Mount Rd labelled as LDP4 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Conductivity	microsiemen s per centimetre	0	0		8	98
Oil and Grease	milligrams per litre	0	0	連	æ	
рН	рН	0	0	\$ # 3	1=1	-
Total suspended solids	milligrams per litre	0	0	2 4 1	t # i	

CENTENNIAL NEWSTAN PTY LIMITED



Discharge & Monitoring Point 5

Discharge to waters

Discharge quality monitoing

Volume monitoring, Borehole located on eastern side of Private Haul Rd (Barnes Dam) labelled as LDP5 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	samples required by	No. of samples you collected and analysed	Lowest sample value		Highest sample value
Conductivity	microsiemen s per centimetre	0	0			-
Oil and Grease	milligrams per litre	0	0	TE .	n="	~
рН	рН	0	0	nu-	725	e.
Total suspended solids	milligrams per litre	0	0	-	٠	

Discharge & Monitoring Point 6

Discharge to waters

Discharge quality monitoring

Volume monitoring, Borehole located in private gravel quarry labelled as LDP6 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Conductivity	microsiemen s per centimetre	0	0	₩: ====	: *	
Oil and Grease	milligrams per litre	0	0	3 6	ie:	2
рН	рН	0	0	en.		ш
Total suspended solids	milligrams per litre	0	0	2		

CENTENNIAL NEWSTAN PTY LIMITED



Discharge & Monitoring Point 7

Discharge to waters

Discharge quality monitoring

Volume monitoring, Borehole on south side of Gravel Rd from Freemans Dr labelled as LDP7 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Conductivity	microsiemen s per centimetre	0	0	S S	9	-
Oil and Grease	milligrams per litre	0	0		Ę	續
pН	рН	0	0			
		0	0	-	-	
Total suspended solids	milligrams per litre	0	0	-	*	28

Discharge & Monitoring Point 8

Discharge to waters

Discharge quality monitoring, Irrigation area labelled as LDP8 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	samples required by	No. of samples you collected and analysed	Lowest sample value		Highest sample value
Oil and Grease	milligrams per litre	0	0	39.	384	4
рH	pН					
		0	0	=		7.5
Total suspended solids	milligrams per litre	0	0	in the second	75	ī.

CENTENNIAL NEWSTAN PTY LIMITED



Discharge & Monitoring Point 9

Discharge to waters

Discharge quality monitoring

Volume monitoring, Outlet from pit top pollution control dam labelled as LDP9 on plan titled "Location of Licenced Discharge Points, and Water Bodies for Awaba EPL 443" plan number AW2258 dated 9/12/2015 DOC15/452897-02 EF13/2762

Poliutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Oil and Grease	milligrams per litre	1	1	0	0	0
pН	рН	1	1	7.34	7.34	7.34
Total suspended solids	milligrams per litre	1	1	49	49	49

Monitoring Point 10

Dust deposition gauge, Labelled D1 on plan titled "Location of Air, Noise, Weather Monitoring points and Water Management Devices" Plan Number AW2259 dated 9/12/15 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	samples required by	No. of samples you collected and analysed	Lowest sample value		Highest sample value
Particulates - Deposited Matter	grams per square metre per month	12	12	0.1	0.4	0.8

Monitoring Point 11

Dust deposition gauge, Labelled D2 on plan titled "Location of Air, Noise, Weather Monitoring points and Water Management Devices" Plan Number AW2259 dated 9/12/15 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	samples required by	No. of samples you collected and analysed	Lowest sample value		Highest sample value
Particulates - Deposited Matter	grams per square metre per month	12	12	0.1	2.4	19.8

Monitoring Point 12

Dust deposition gauge, Labelled D3 on plan titled "Location of Air, Noise, Weather Monitoring points and Water Management Devices" Plan Number AW2259 dated 9/12/15 DOC15/452897-02 EF13/2762

Licence 443 Page 9 of 20

CENTENNIAL NEWSTAN PTY LIMITED



Pollutant	Unit of measure	samples required by	1.02.01	Lowest sample value		Highest sample value
Particulates - Deposited Matter	grams per square metre per month	12	12	1.0	2.3	4.4

Monitoring Point 13

Dust deposition gauge, Labelled D4 on plan titled "Location of Air, Noise, Weather Monitoring points and Water Management Devices" Plan Number AW2259 dated 9/12/15 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	samples required by	No. of samples you collected and analysed	Lowest sample value		Highest sample value
Particulates - Deposited Matter	grams per square metre per month	12	12	0.5	1.0	2.2

Monitoring Point 14

Particulate matter (PM10), Labelled HVSA1 on plan titled "Location of Air, Noise, Weather Monitoring points and Water Management Devices" Plan Number AW2259 dated 9/12/15 DOC15/452897-02 EF13/2762

Pollutant	Unit of measure	samples required by	1	Lowest sample value		Highest sample value
Particulate matter	micrograms per cubic metre	51*	51	I	9.95	29

^{*}Equipment installed in March 2015.

Page 10 of 20

CENTENNIAL NEWSTAN PTY LIMITED



B3 Volume or Mass Monitoring Summary

For each monitoring point identified in your licence complete the details of the volume or mass monitoring indicated in the tables provided below.

If volume or mass monitoring is not required by your licence, no tables will appear below.

Note that this does not exclude the need to conduct appropriate concentration monitoring of assessable pollutants as required by load-based licensing (if applicable).

Discharge & Monitoring Point 1

Discharge to waters
Discharge quality monitoring Volume montoring

Unit of measure	Frequency	No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Daily during any discharge	0	77	15k	٠

Discharge & Monitoring Point 2

Discharge to waters Discharge quality monitoring Volume monitoring

Unit of measure		No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Daily during any discharge	0			⊕ .

Discharge & Monitoring Point 3

Discharge to waters
Discharge quality monitoring
Volume monitoring

Unit of measure		No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Daily during any discharge	0	··	•	ĕ i.

CENTENNIAL NEWSTAN PTY LIMITED



Discharge & Monitoring Point 4

Discharge to waters
Discharge quality monitoing
Volume monitoring

Unit of measure	Frequency	No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Daily during any discharge	0	•	a	(100)

Discharge & Monitoring Point 5

Discharge to waters Discharge quality monitoing Volume monitoring

Unit of measure	Frequency	No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Daily during any discharge	0		*	ï

CENTENNIAL NEWSTAN PTY LIMITED



Discharge & Monitoring Point 6

Discharge to waters Discharge quality monitoring Volume monitoring

Unit of measure	Frequency	No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Daily during any discharge	0	*	•	*

Discharge & Monitoring Point 7

Discharge to waters Discharge quality monitoring Volume monitoring

Unit of measure	Frequency	No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Daily during any discharge	0	*	×	×

Discharge & Monitoring Point 9

Discharge to waters
Discharge quality monitoring
Volume monitoring

Unit of measure		No. of measurements made	Lowest result	Mean result	High result
kilolitres per day	Continuous				
		0	Ti.	9 2 6	20

CENTENNIAL NEWSTAN PTY LIMITED



C Statement of Compliance - Licence Conditions

1		•	mpliance with Licence Conditions the boxes)							
	re all conditions of the licence complied with (including monitoring reporting requirements)?									
•	2	If you answered 'No' to question 1, please supply the following details for each non -compliance in the format, or similar format, provided on the following page.								
		Ple	ase use a separate page for each licence condition that has not been complied with.							
		a)	What was the specific licence condition that was not complied with?							
		b)	What were the particulars of the non -compliance?							
		c) What were the date(s) when the non -compliance occurred, if applicable?								
		d)	If relevant, what was the precise location where the non -compliance occurred?							
			Attach a map or diagram to the Statement to show the precise location.							
		e)	What were the registrati on numbers of any vehicles or the chassis number of any mobile plant involved in the non-compliance?							
		f)	What was the cause of the non -compliance?							
		g)	What action has been, or will be, taken to mitigate any adverse effects of the non -compliance?							
		h)	What action has been, or will be, taken to prevent a recurrence of the non -compliance?							
	3.	How many pages have you attached?								

Each attached page must be initialled by the person(s) who signs Section

G of this Annual Return

CENTENNIAL NEWSTAN PTY LIMITED



C2 Details of Non-Compliance with Licence

Licence condition number not complied with

L3.1 Volume and mass limits

Summary of particulars of the non-compliance (NO MORE THAN 50 WORDS)

At approximately 4:10am Tuesday the 21st April water commenced overflowing from the Pollution Control Dam through LDP009 at the Awaba Colliery. A water sample was taken immediately.

Due to a severe east coast low weather system hitting the area a power outage was experienced and the volume was unable to be calculated.

If required, further details on particulars of non-compliance

Date(s) when the non-compliance occurred, if applicable

21 April 2015

If relevant, precise location where the non-compliance occurred (attach a map or diagram)

The discharge occurred from EPL Point 9 – LDP009, which is located at the Pollution Control Dam at Awaba Colliery and discharges into Stony Creek.

If applicable, registration numbers of any vehicles or the chassis number of any mobile plant involved in the non-compliance

Cause of non-compliance

An east coast low system resulted in heavy rainfall and strong winds. The event was later declared as a natural disaster for the region by the NSW Government.

The storm commenced Monday night 20 April 2015 and continued until 24 April 2015. The power to the local area dropped out late Monday night /Early Tuesday morning. 322.5mm of rain was recorded on site over the duration of the storm period.

Action taken or that will be taken to mitigate any adverse effects of the non-compliance

The following actions were taken to minimize the discharge from the Pollution Control Dam through LDP009.

- · Water within the PCD is pumped to a low level to increase the capacity of the dam
- There are two pumps installed in the dam to increase the pumping capacity away from the dam
- Sampling was undertaken upstream and downstream of the discharge point.

Action taken or that will be taken to prevent a recurrence of the non-compliance

The following actions have been undertaken to minimize the potential for future discharges from the Pollution Control Dam through LDP009:

- The pumps within the PCD were upgraded to increase the pumping capacity
- An alarming system has been installed on the PCD to notify the site when the dam is approaching the discharge level
- Additional storage area has been developed on the old stockpile area to slow the flow into the PCD.

- CW

CENTENNIAL NEWSTAN PTY LIMITED



D Statement of Compliance - Load-Based Fee Calculation Worksheets

If you are not required to monitor assessable pollutants by your licence, no worksheets will appear below. Please go to Section E.

If assessable pollutants have been identified on your licence (see licence condition L2), complete the following worksheets for each assessable pollutant to determine your load-based fee for the licence fee period to which this Annual Return relates.

Loads of assessable pollutants must be calculated using any of the methods provided in the EPA's Load Calculation Protocol for the relevant activity. A Load Calculation Protocol would have been sent to you with your licence. If you require additional copies you can download the Protocol from the EPA's website or you can contact us on telephone 02 9995 5700.

You are required to keep all records used to calculate licence fees for four years after the licence fee was paid or became payable, whichever is the later date.

PENALTIES APPLY FOR SUPPLYING FALSE OR MISLEADING INFORMATION

D1 - D8 (Not Applicable)

CENTENNIAL NEWSTAN PTY LIMITED



E Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan (PIRMP) Under Section 153A of the POEO Act 1997

	(✓ a box)			✓	Ye	s	□No	
lf y	you answered 'Yes' to que	estion 1, p	olease tick the appropriate box to	indicate the fo	llow	ing:		
2	Is the PIRMP available	at the pre	emises?					
	(✓ a box)				✓	Yes	□No	
3	Is the PIRMP available i	in a prom	inent position on a publicly acces	sible web site	?			
	(✓ a box)			•	/ Y	'es	□No	
N	eb site Address	http://d	lata.centennialcoal.com.au/	_				
VV	eb site Address							
4	Has the PIRMP been to	ested?						
	(✓ a box)				✓ '		□No	
lf y	you answered 'Yes' to que	stion 4 pl	lease indicate clearly below the d	ate that the P	IRM	o was la	st tested:	
Th	ne PIRMP was last tested o	on	23 /12 /2015					
5	Has the PIRMP been u	pdated?						
	(✓ a box)				✓ '	Yes	□No	
lf y	you answered 'Yes' to que	stion 5 pl	lease indicate clearly below the da	ate that the P	IRM	o was la	st updated:	
	ne PIRMP was last updated	d on	23 /12 /2015					
Th	How many times has the	e PIRMP	P been activated in this reporting p	period?)
6	the PIRMP has been activa	ated, plea	ase indicate clearly below the date	e/s when the l	PIRN	/IP was a	activated:	

http://www.epa.nsw.gov.au/legislation/20120227egpreppirmp.htm



CENTENNIAL NEWSTAN PTY LIMITED



F Statement of Compliance - Requirement to Publish Pollution Monitoring Data Under Section 66(6) of the POEO Act 1997

(√ a box)		✓	Yes	□No		
If you answered 'Yes	s' to question 1, please tick the approp	oriate box to indicate the follo	wing:			
2 Do you operate	a web site?					
(✓ a box)		✓	Yes	□No		
•	Is the pollution monitoring data published on your web site in accordance with the EPA's written requirements for publishing pollution monitoring data?					
(✓ a box)		✓	Yes	□No		
If you publish pollution	on monitoring data on a web site pleas nonitoring data can be accessed:	se indicate clearly below the a				
	http://data.centennialcoal.	com au				

The EPA's written requirements for publishing pollution monitoring data are available at http://www.epa.nsw.gov.au/legislation/20120263reqpubpmdata.htm

Note - if you do not maintain a web site, you must provide a copy of any monitoring data that relates to pollution, to any person requests a copy of the data at no charge to the person requesting the data.

CENTENNIAL NEWSTAN PTY LIMITED



G Statement of Compliance - Environmental Management Systems and Practices

1	Do you have an environmental management system (EMS) certified to ISO 140 demonstrated equivalent system¹? (see note below on demonstrated equivalent		or	any oth	er	
	(✓ a box)			Yes		✓ No
	our answer to question 1 is 'No', please proceed to question 5. If your answer to ceed to question 2.	qu	es	tion 1 is	'Yes',	please
2	When was the last check of the EMS ² completed (see note below on check of	EM	(S)?		//
3	Were there any non-conformances related to environmental issues identified in	n the	e la	ast chec	k of th	ne EMS?
	(✓ a box)		Y	es		J No
4	If there were non-conformances identified, were these non-conformances rect	ified	1?			
	(✓ a box)		Y	es		■No
sys qu	ease proceed to section H. Questions 5-11 relate to any documented environme stems in place. Refer to http://www.epa.nsw.gov.au/licensing/EMCP.htm for guidestions 5 to 11. If unsure of the answer, tick No. Have you conducted an assessment of your activities and operations to identify potential to cause environmental impacts and implemented operational controls.	dano the	ce e a	on how	to cor	nplete ave a
	(✓ a box)	✓		Yes		□No
6	Have you established and implemented an operational maintenance program, i maintenance?	nclu				
	(✓ a box)	✓	١	Yes .		□No
7	Do you keep records of regular inspections and maintenance of plant and equip	me	nt'	?		
	(✓ a box)	✓	١	Yes		□No
8	Do you conduct regular site audits to assess compliance with environmental le assess conformance to the requirements of any documented environmental prasystems in place?					
	(✓ a box)	√ \	Ye:	S		No
8a	If yes, how often? 3 years					
9	Are the audits of documented environmental practices, procedures and system party?	s ur	nde	ertaken l	oy a tl	hird
	(✓ a box)	✓	Υ	'es	ı	■No
10	Have you established and implemented an environmental improvement or mana	ager	me	nt plan?		
	(✓ a box)	✓ \	Ye	s		No
	Do you train staff in environmental issues that may arise from your activities and of this	d op	er	ations ar	nd ke	ep records
	(✓ a box)	✓ \	Ye	s		No
acco	monstrated equivalent refers to an environmental management system that the EPA cor runtability, procedures, documentation and record keeping requirements of an ISO 1400 mation go to:			•		the

http://www.epa.nsw.gov.au/resources/licensing/150402-environmental-management-systems-guidelines.pdf

² Undertaking a 'check of an EMS' refers to the ISO 14001 requirements that an organisation demonstrates conformity to the requirements of its EMS and to the standard, these checks require third-party certification that requirements have been met.

CENTENNIAL NEWSTAN PTY LIMITED



H Statement of Compliance - Environmental Improvement Works

 Environmental improvement works <u>must</u> meet the following criteria: They are not required to comply with licence conditions or legislative requirements. They have been undertaken voluntarily, and are in addition to any works required to comply with any licence conditions or legislative requirements under the Protection of the Environment Operations Act 1997 or its regulations. They relate to the licensed activity at the licensed premises.
 They have been undertaken voluntarily, and are in addition to any works required to comply with any licence conditions or legislative requirements under the Protection of the Environment Operations Act 1997 or its regulations.
 They aim to reduce air, water, noise pollution or incident potential at the premises. They were completed in the reporting period covered by this annual return. They are not ongoing. If the works reported in this annual return do not meet the criteria set out above they will not be included in the calculation of the environmental management category for this licence.
1 Have you voluntarily completed any environmental improvement works in this licence reporting period that have resulted in demonstrated environmental improvements at the premises?
(✓ a box)
If you answered 'Yes', please provide the following supporting information:
Brief description of works.
Demonstration of environmental improvement resulting from the works at the premises. Include details of: Controls in place before works undertaken New controls put in place Description of environmental improvements (e.g. reducing air, water, noise pollution or incident potential) due to the works. Where possible, quantitative data (e.g. monitoring) to demonstrate the improved environmental outcome.

Date when works were completed (Note: ongoing works are not applicable)

__/__/___

Estimated cost of works:

CENTENNIAL NEWSTAN PTY LIMITED



I Signature and Certification

This Annual Return may only be signed by a person(s) with legal authority to sign it as set out in the categories below. **Please tick (**✓) the box next to the category that describes how this Annual Return is being signed.

If you are uncertain about who is entitled to sign or which category to tick, please contact us on telephone 02 9995 5700.

If the licence holder is:		the Annual Return must be signed and certified:
an individual		by the individual licence holder, or
		by a person approved in writing by the EPA to sign on the licence holder's behalf
a company		by affixing the common seal in accordance with Corporations Act 2001, or
		by 2 directors, or
	M	by a director and a company secretary, or
	0	if a proprietary company that has a sole director who is also the sole company
		secretary - by that director, or
		by a person de legated to sign on the company's behalf in accordance with the Corporations Act 2001 and approved in writing by the EPA to sign on the company's behalf.
a public authority		by the Chief Executive Officer of the public authority, or
(other than a council)	0	by a person delegated to sign on the public authority's behalf in accordance with its legislation and approved in writing by the EPA to sign on the public authority's behalf.
a local council		by the General Manager in accordance with s.377 of the Local Government Act 1993, or
		by affixing the seal of the council in a manner authorise d under that Act.

It is an offence to supply any information in this form that is false or misleading in a material respect, or to certify a statement that is false or misleading in a material respect. There is a maximum penalty of \$250,000 for a corporation or \$120,000 for an individual.

L/M/a

- declare that the information in the Monitoring and Complaints Summary in section B of this Annual Return is correct and not false or misleading in a material respect, and
- certify that the information in the Statement of Compliance in sections A, C, D, E, F, G and H and any
 pages attached to Section C is correct and not false or misleading in a material respect.

f your licence has been transferred, suspended, surrendered or revoked by the EPA during th reporting period, cross out the dates below and specify the new dates to which this Annu Return relates below:	
For the reporting period 01-Jan-2015 to 31-Dec-201	5 or/ to/
SIGNATURE: Tony Marke	SIGNATURE:
NAME: Tony Macko	NAME: Andrew Phillips
POSITION: Company Secretary	POSITION: Director
DATE: 22, Feb , 2016	DATE: 25, Feb , 2016

SEAL(if signing under seal)

PLEASE ENSURE THAT ALL APPROPRIATE BOXES HAVE BEEN COMPLETED AND THAT THE CHECKLIST ON PAGE 2 OF THE ANNUAL RETURN HAS BEEN COMPLETED



ALBIN CIVIL PO Box 45 Cooranbong NSW 2265

Phone: 0400 220 483

Email: albincivil@outlook.com

SEPTIC TREATMENT PLANT INSPECTION

Date: 30.3.15

Site: AWABA

Comments:				
No	SHAFE	CNSITE		
Very	MINIMAZ	USE.		

Checks and Recommendations:

Belts	
Bearings	
Pump Operation	
Float Switch	
Tank Condition	No LAKS GOOD CONDITION.
Wet Areas	NO WET AREAS.

Serviceman:

ROS. Ars. J



ALBIN CIVIL PO Box 45

Cooranbong NSW 2265 Phone: 0400 220 483

Email: albincivil@outlook.com

SEPTIC TREATMENT PLANT INSPECTION

Date: 6.8.15

Site: AWABA.

Comments:

No STAFF ONSITE.

Checks and Recommendations:

Belts	,
Bearings	
Pump Operation	
Float Switch	
Tank Condition	GOOD. NO LEAKS.
Wet Areas	NO WET AREAS.

Serviceman:

Ros. Asin



ALBIN CIVIL PO Box 45 Cooranbong NSW 2265 Phone: 0400 220 483

Email: albincivil@outlook.com

SEPTIC TREATMENT PLANT INSPECTION

Date: 7 - 11 - 13

Site: AWABA.

Comments:

VERY Minima C USE.

No STAGE ONSITE.

Checks and Recommendations:

Belts	
Bearings	
Pump Operation	
Float Switch	/
Tank Condition	GOOD GNDITION. NO LEAKS.
Wet Areas	No WET ALERS.

Serviceman:

Ros. Asin



ALBIN CIVIL

PO Box 45

Cooranbong NSW 2265 Phone: 0400 220 483

Email: albincivil@outlook.com

SEPTIC TREATMENT PLANT INSPECTION

Date: 17/12/15

Site: AWABA.

Comments:	Very Minimar USE. No STAFF ONESITE.	
÷		

Checks and Recommendations:

Belts	/
Bearings	
Pump Operation	
Float Switch	
Tank Condition	No coms. GOOD CONDITION.
Wet Areas	NO WET AREAS.

Serviceman:

Ros. As. i

Centennial Newstan (Awaba) Colliery 2015 End of Year Subsidence Management Report

Report Number: 8

Reporting Period: 2015

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
- DOP&E Department of Planning & Environment
- Ausgrid
- RailCorp (Transport NSW),
- Mine Subsidence Board,
- Origin Energy,
- Telstra
- Newstan (Awaba) Mine Manager,
- Newstan (Awaba) Environmental Coordinator.

General Comments:

Stage 1:

- Approval to mine Stage 1 of Mine Subsidence Management Plan (MSMP) at Awaba Colliery was granted on 03/09/2007
- Mining completed on 26/06/2009.
- Monitoring variation from 3 to 6 monthly approved 28/06/2011.
- January and March 2014 resurveys recorded greater than predicted maximum subsidence along Main South Crossline between XL24 to XL66 and 8NE Centreline between CL01 to CL16. Monitoring frequency was temporarily increased.
- Relatively stable results were achieved during the second half of 2014.
- Relatively stable results continued through 2015.
- Currently monitoring is monthly.

Stage 2:

- Approval to mine Stage 2 of MSMP at Awaba Colliery was granted on 29/08/2008
- Mining completed on 08/03/2012.
- Monitoring variation from 3 to 6 monthly approved 31/05/2013.
- July 2014 resurvey recorded greater than predicted subsidence along Main South Crossline Extension between XLE01to XLE22 and 8SW Centreline between 8SW22 to 8SW43. Monitoring frequency was temporarily increased.
- A Sinkhole, 3.5 metres in diameter and 2.8 metres deep was found on 03/02/2015 near 8SW29-30. The sinkhole has been filled. The area is being rehabilitated in accordance with the sinkhole rehabilitation plan.
- Relatively stable monitoring results were achieved in 2015.
- Currently monitoring is monthly.

Stage 3:

- Approval to mine Stage 3 of MSMP at Awaba Colliery was granted on 15/12/2010
- Mining Completed on 22/12/2011.
- 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.
- Monitoring results show subsidence within predictions.
- 4NW monitoring was temporarily increased to Monthly to match the frequency of Stage 1 and 2.
- There continues to be relatively stable monitoring results recorded from surveys.

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) – Stage 1 23 (a) – Stage 2 24 (a) – Stage 3 Summary of Subsidence and Environmental Monitoring Results	The Following subsidence surveys and inspections have been completed: **Surface Surveys -** All scheduled subsidence surveys completed to December 31 st , 2015. All scheduled environmental monitoring completed to December 31 st , 2015.	
	Maximum subsidence in 2015 period – was in Main South Stage 2, XLE17 (-1.401m in December). The only reported incident in 2015 was in Stage 2. A localised sinkhole, 3.5 metres in diameter, and 2.8 metres deep, was found on 03/02/2015 near 8SW29-30. The sinkhole has been filled. The area is being rehabilitated in accordance with the sinkhole rehabilitation plan.	
		Stage 1 Area - Maximum subsidence was at XL40 (-1.340m in December).

SMP Approval Condition No.	Requirement Summary	Comment / Description
		Stage 3 Subsidence monitoring results in 2015 were well within predicted levels and continue to be relatively stable.
		A visual inspection found evidence of a previously reported sinkhole beginning to partially reactivate.
		The sinkhole was first found and reported following heavy rain over the June 2011 long weekend.
		The sinkhole has been filled. The area has been rehabilitated in accordance with the sinkhole rehabilitation plan.
		Environmental inspections were carried out in January 2014. Traversing between transects involved walking along over a kilometre of Stony Creek, including part of a tributary. The 2014 survey found no impact on Stony Creek, and was the last Ecological Survey.
		Underground Surveys –
		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
	-	After reporting greater than predicted subsidence in both Stage 1 and Stage 2 during 2014 – Monitoring Results for 2015 were consistently relatively stable throughout the year. January and March Surveys of 2014 found greater than predicted subsidence in Main South Stage 1 Area. A report was prepared by a geotechnical consultant with regard to this event. The subsidence has had no adverse impact on surface infrastructure. 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. The significant increase in subsidence occurred approximately 175 to 300
		metres from the Main Northern Railway Line. 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.

SMP Approval Condition No.	Requirement Summary	Comment / Description
		There have been no observed visual environmental impacts in Stage 1 Area. No visual disturbance has been identified on tracks & trails during routine inspections.
		July 2014 Surveys found greater than predicted subsidence in Main South Stage 2 Area.
		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.
		The significant increase in subsidence occurred approximately 250 to 350 metres from the Main Northern Railway Line. 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.
		Cracking was observed and reported in the Stage 2 area associated with the greater then predicted subsidence.
		No visual disturbance has been identified on tracks & trails during routine inspections.

SMP Approval Condition No.	Requirement Summary	Comment / Description
		Stage 3 Subsidence monitoring results in 2015 were within predicted levels and continue to be relatively stable.
		Environmental impacts in Stage 3 have been confined to the minor reactivation of one sinkhole.
22 (c) – Stage 1 23 (c) – Stage 2 24 (c) – Stage 3	Trends in Monitoring Results	In general - the trend in monitoring results shows that the majority of subsidence occurs during and shortly after mining extraction.
I (a) stage o		In the following months the rate of subsidence decreases toward a stable environment.
		However after approximately 6 years of relative stability – there was greater than predicted subsidence in Main South Stage 1 and Stage 2 in 2014 .
		During 2014 – after the initial sudden increase in subsidence - results began to trend toward decreasing movement.
		In 2015 surveys have consistently shown relatively stable results.
22 (d) - Stage 1 23 (d) - Stage 2	Management Actions of Potential	In general - current Public Safety and Subsidence Management Plans are considered adequate.
24 (d) – Stage 3	Impacts	The current monitoring schedule is based on 6 monthly resurveys. However, following the greater than predicted subsidence in Stage 1 and
		However, rollowing the greater than predicted subsiderice in Stage 1 and

SMP Approval Condition No.	Requirement Summary	Comment / Description
		Stage 2 - Agreed temporary amendments increased monitoring to fortnightly monitoring of 8NE, 9SW, 8SW and 6SW – and monthly monitoring of MSXL and MSXLE during 2014 and 2015.
		After consistent relatively stable monitoring results - On October 7 th , 2015, approval was granted to vary this monitoring to monthly.
		Following greater than predicted subsidence in Stage 1 Main South Cross line / 8NE Centreline area in 2014;
		All relevant government agencies and stakeholders were notified as per condition 20 after results of January survey.
		Centennial Newstan conducted a follow up survey – including strain measurements in early March. The results were distributed to relevant government agencies and stakeholders.
		A visual inspection was carried out on 21/03/2014 - by a Geotechnical consultant accompanied by the Mine Manager and Mine Surveyor. No visual signs of subsidence were observed. The results were included in a geotechnical report.
		A meeting between Centennial Newstan and PSE was held on 25/03/2014 to discuss the mechanics and management of this occurrence.
		A report prepared by a geotechnical consultant with regard to this event was distributed to Transport NSW and the PSE on 27/03/2014. Further reports were distributed on 2/6/2014 and 23/6/2014.

SMP Approval Condition No.	Requirement Summary	Comment / Description
		A meeting to discuss the increased subsidence in Stage 1 was held in Chatswood on 02/04/2014. It was attended by the Principal Subsidence Engineer (PSE), Centennial Newstan, an independent geotechnical consultant, and Transport NSW. During the Chatswood meeting – it was agreed to temporarily increase the frequency of surveys until a trend of stable results was achieved. Note that as agreed during the meeting in Chatswood - subsidence of 50mm or greater observed within the Railway Protection Zone (RPZ) - will trigger further communication and review of the situation.
		Monitoring frequency was increased on 04/04/2014 to provide further data until the area became stable; and to monitor any possible increased subsidence moving toward the rail corridor.
		Following greater than predicted subsidence in Stage 2 Main South Crossline Extension / 8SW Centreline area - All relevant government agencies and stakeholders were notified as per condition 21, after results of the July survey.
		A visual inspection carried out by the Mine Surveyor found evidence of minor surface impacts within these areas. Results were forwarded to PSE, relevant government departments and stakeholders on 14/07/2014.
		Agreement was reached with the PSE and Transport NSW - to increase monitoring frequency to provide further data until the area becomes stable; and to monitor any possible increased subsidence moving toward the rail

SMP Approval Condition No.	Requirement Summary	Comment / Description
		corridor. Subsidence of 50mm or greater observed within the Railway Protection Zone (along 8SW) or the Railway Mining Barrier (along 6SW) - will trigger further communication and review of the situation. Monitoring frequency was increased on 16/07/2014.
		A meeting to discuss the trend of consistent relatively stable monitoring results in both Stage 1 and Stage 2 - was held in Burwood on 12/08/2015. It was attended by the Principal Subsidence Engineer (PSE), Centennial Newstan, an independent geotechnical consultant, and Transport NSW. During the Burwood meeting – it was agreed to amend the frequency of surveys from fortnightly to monthly for a period of six months (commencing from August). If results continued to be stable during this period – agreement would be made to further reduce monitoring frequency.
		On October 7 th , 2015, official approval was granted by PSE to vary this monitoring to monthly.
		Following the reporting of the Stage 2 localised sinkhole in February 2015, - The relevant government authorities and stake holders were informed within 24 hours of the discovery of the hole. The location of the sinkhole was plotted and is shown on the Stage 2 Face Position plan AW2075. The sinkhole has been filled. The area is being rehabilitated in accordance with the Sinkhole Rehabilitation Plan.

SMP Approval Condition No.	Requirement Summary	Comment / Description
		Following the formation of the Stage 3 Sinkhole in June 2011 -The relevant government authorities and stake holders were informed 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. Due to the partial reactivation of this hole - further minor rehabilitation works were carried out during 2015, in accordance with the Sinkhole Rehabilitation Plan.

Grant Watson

Centennial Newstan (Awaba) Colliery - Mine Manager

For any comments or questions please contact Grant WATSON- Mine Manager Ph.(W) 02 49560227 or Mob. 0438 560 227

grant.watson@centennialcoal.com.au





