

Attention: Mr Gary Brassington
Manager Approvals
BHP Billiton Illawarra Coal
External Affairs Department

PO Box 514 Unanderra
New South Wales 2526

21 November 2011

Via email: Gary.Brassington@bhpbilliton.com

Dear Gary

**RE: ABORIGINAL AND EUROPEAN HERITAGE ASSESSMENT FOR WEST CLIFF COLLIERY - LONGWALL
34 END OF PANEL REPORT**

As requested Niche Environment and Heritage has undertaken a site assessment and review of the predicted and observed impacts resulting from the extraction of Longwall 34 at West Cliff Colliery on Aboriginal and European Heritage values. This assessment is attached for inclusion in BHP Billiton Illawarra Coal's End of Panel Report for Longwall 34.

There were no observed impacts as a result of the extraction of Longwall 34 to the Aboriginal shelter sites Georges River No.2, Georges River No.3 and Georges River No.5. This conclusion is supported by the report provided from Donna Whillock of Tharawal Local Aboriginal Land Council (Appendix).

No additional cracking to the European Heritage site WH1 above that reported in relation to Longwall 33 (Biosis 2010) was observed by Niche Environment and Heritage. Other European Heritage sites were not assessed due to access restrictions though for reasons outlined in the attached letter they are of little concern in relation to Longwall 34.

Please do not hesitate to contact me should you require any further information.

Regards



Renée Regal
Archaeologist

Background and Introduction

Niche Environment and Heritage was commissioned by BHP Billiton Illawarra Coal (BHPBIC) to conduct an End of Panel (EoP) assessment of the European and Aboriginal cultural heritage and archaeological sites within the limit of subsidence of Longwall 34 at West Cliff Colliery.

Subsidence Monitoring Results Summary (MSEC)

The End of Panel Subsidence Report for Longwall 34 prepared by MSEC (MSEC510_Revision 02) is a comprehensive report which addresses all aspects of the recorded subsidence parameters resulting from the extraction of Longwall 34.

Specifically in relation to matters that may affect Aboriginal or European heritage values MSEC notes the following:

- In relation to the Georges River, measured subsidence parameters (incremental and total subsidence movements; incremental and total upsidence and closure) are similar to or less than the predicted maximum.
- Minor fracturing in the bed of the Georges River occurred following extraction of Longwall 34.

Overview of previous monitoring undertaken




Monitoring of both the European and Aboriginal archaeological sites has been carried out as recommended in Biosis Research (2007).

Site Inspection and Results

Three Aboriginal shelters with art and deposit and one of the European heritage sites were inspected as part of this assessment. These sites were inspected due to their proximity to Longwall 34.

The site inspection was carried out on 2 November 2011 by Renée Regal (Niche Environment and Heritage), Donna Whillock (Tharawal Local Aboriginal Land Council) and Kirsty-Lee Chalker (Cubbitch Barta Native Title Claimants) and a summary of the findings of the site visit are outlined in Table 1 and Table 2 below.


Table 1: Summary of the site visit to the Aboriginal Heritage Sites in Proximity to Longwall 34.

| AHIMS site number | Site Name | Results of inspection | Photograph of current condition of site |
|-------------------|-------------------------|--|--|
| 52-2-2234 | Georges River 1 | Shelter in same condition as previously described in Biosis Research 2007. There has been further natural weathering to the art panel, which has caused further granular loss, and white leeching process has occurred over the infill kangaroo. |  <p data-bbox="826 824 1070 853">Northern view of the shelter</p> |
| 52-2-2243 | Georges River 3 | Shelter and Art is in the same condition as described in Biosis Research 2007. A number of artefacts were relocated in the shelters drip line. |  <p data-bbox="826 1240 1031 1270">Northern end of shelter</p> |
| 52-2-2241 | Georges River 5 | Shelter and Art are in the same condition as described by Biosis Research 2007; there were a number of broken modern glass fragments located on the top of the large block (pictured) located at the front of the site that had not previously been noted. The single quartz artefact was relocated in the shelters drip line. |  <p data-bbox="826 1839 1067 1868">Southern end of the shelter</p> |
| 52-2-2237 | Ousedale Creek Number 3 | This shelter was not reinspected due to it being over 1km away from Longwall 34. | |

| AHIMS site number | Site Name | Results of inspection | Photograph of current condition of site |
|-------------------|-----------------|---|---|
| 52-2-2244 | Georges River 2 | This site was not reinspected due to the distance of the site from Longwall 34 (over 300m from the edge of the longwall). | |

Access restrictions prevented an assessment of the three heritage sites identified as Grave site (WH 2), House Site (WH 3) and remains of a historic pub/ cellar (WH 4). MSEC indicated that it was unlikely that impacts would occur at these sites (Biosis Research 2005).

Table 2: Summary of the site visit to the European Heritage Site WH1; within Proximity to Longwall 34.

| Site Name | Results of inspection | Photograph of current condition of site |
|--|---|---|
| WH 1- Historic Bridge and Road remains | Cracking has been previously reported in relation to Longwall 33 (Biosis 2010). There has been no further damage to this site as a result of Longwall 34. |  |

Conclusion

There were no observed impacts as a result of the extraction of Longwall 34 to the Aboriginal shelter sites Georges River No.2, Georges River No.3 and Georges River No.5. and these observations are supported by the report provided from Donna Whillock of Tharawal Local Aboriginal Land Council (Appendix 1).

No additional cracking to the European Heritage site WH1 above that which was reported in relation to Longwall 33 (Biosis 2010) was observed by Niche Environment and Heritage. Other European Heritage sites were not assessed due to access restrictions, and for reasons outlined above they are of little concern in relation to Longwall 34.

Access to heritage sites WH2, WH3 and WH4 was restricted during the site assessment. On the basis that these sites are much further from Longwall 34 than they were from Longwall 33, and that the post mining assessment of Longwall 33 recorded no adverse impacts to these sites, it is the conclusion of this assessment that there is no concern for these sites as there is not likely to have been any changes to them from the extraction of Longwall 34.

Recommendations

On the basis of this assessment all impacts to Aboriginal and Historical heritage values are within the predicted limits, ongoing monitoring as outlined in Biosis Research 2007 should continue as required. No additional assessments in relation to Longwall 34 are recommended.

References

Biosis Research 2007 *Archaeological Cultural Heritage Assessment: Review of West Cliff Area 5- Longwalls 34-36, Appin NSW*. An unpublished report for BHP Billiton Illawarra Coal

Biosis Research 2010 *West Cliff Area 5 Longwall 33 End of Panel Report: Cultural Heritage*. An unpublished report for BHP Billiton Illawarra Coal

Cardno Forbes Rigby 2008 *West Cliff Colliery Area 5 Longwalls 34 to 36 Subsidence Management Plan Application Proposed Subsidence Management Plan*. An unpublished report for BHP Billiton Illawarra Coal

MSEC 2006 *The Predictions of Subsidence Parameters and the Assessment of Mine Subsidence Impacts on Sub-surface Features Due to Mining Longwalls 31 to 33 at West Cliff Colliery in Support of an SMP Application*. An unpublished report prepared for BHP Billiton - Illawarra Coal. Report Number MSEC208, Revision B, Mine Subsidence Engineering Consultants.

MSEC 2011 *BHP Billiton Illawarra Coal: West Cliff Colliery- Longwall 34 End of Panel Subsidence Monitoring Report for West Cliff Longwall 24*. An unpublished report prepared for BHP Billiton Illawarra Coal. Report Number MSEC510 Revision 2, Mine Subsidence Engineering Consultants.

TARP Table

| Level | Characteristics of level | Actions & Notifications | LW 34 Impacts | Actions as a result of LW 34 |
|---|--|--|---|---------------------------------------|
| Georges River - Aboriginal Archaeology | | | | |
| Within Predictions (Minor Impacts) | <ul style="list-style-type: none"> Change in shelter conditions not attributable to natural weathering or preservation – mineral growth or micro-organism growth (as observed by comparing pre-mining photographs with post-subsidence/mining photographs). | <ul style="list-style-type: none"> Continue with monitoring program. Condition assessment and photographic record completed. Summarise all actions in Subsidence Management Status and Impact reports, as well as monitoring results in End of Panel Reports and AEMRs. Inform stakeholders of baseline assessment Notify agencies of impacts in monthly subsidence report | There have been no observed impacts to Aboriginal archaeological sites as a result of the extraction of LW 34. The observations are within predictions. | There are no further actions required |
| Exceeding Predictions | <ul style="list-style-type: none"> Change in shelter conditions not attributable to natural weathering or preservation – cracking or exfoliation of art panel, movement of existing planes | <ul style="list-style-type: none"> Condition assessment to record impacts completed within 2 weeks. Site visits with stakeholders in accordance with approvals and management plans. Capture photographic record. Review monitoring program and modify if necessary within 1 month. Implement increased monitoring within 2 weeks. Develop site CMA in consultation with key stakeholders within 1 month, (pending stakeholder availability) and seek approvals. Completion of works following approvals. Issue CMA report within 1 month of works completion. | There have been no observations which exceed predictions. | N/A |

| Level | Characteristics of level | Actions & Notifications | LW 34 Impacts | Actions as a result of LW 34 |
|---|---|--|--|--|
| | and joints at panel, block fall within shelter or overhang, shelter or overhang collapse. Observed by comparing pre-mining photographs with post-subsidence/mining photographs. | <ul style="list-style-type: none"> • Conduct additional monitoring and reporting within 2 weeks. • Conduct initial follow up monitoring & reporting within 2 months of CMA completion. • Report in the End of Panel Report. • Summarise all actions and monitoring in AEMR. • Notification to DPIM and resource manager/s within 24 hours of confirmation • Notify relevant Specialists within 24 hours of confirmation. | | |
| Georges River - European Heritage | | | | |
| Within Predictions (Minor Impacts) | <ul style="list-style-type: none"> • Change in site conditions not attributable to natural weathering or preservation – (as observed by comparing pre-mining photographs with post-subsidence/mining photographs). | <ul style="list-style-type: none"> • Continue with monitoring program. • Condition assessment and photographic record completed. • Summarise all actions in Subsidence Management Status and Impact reports, as well as monitoring results in End of Panel Reports and AEMRs. • Inform stakeholders of baseline assessment • Notify agencies of impacts in monthly subsidence report | There has been some cracking at heritage site WH1, which was noted by Biosis research (2010) in the End of Panel Report for Longwall 33. There have been no further impacts to WH1 due to the extraction of longwall 34. | BHPBIC should continue to monitor the site in accordance with the approved monitoring program. |
| Exceeding Predictions | <ul style="list-style-type: none"> • Change in site conditions not attributable to natural weathering or preservation – significant | <ul style="list-style-type: none"> • Condition assessment to record impacts completed within 2 weeks. • Site visits with stakeholders in accordance with approvals and management plans. • Capture photographic record immediately. • Review monitoring program and modify if necessary within 1 month. | | BHPBIC should continue to monitor the site in accordance with the |

| Level | Characteristics of level | Actions & Notifications | LW 34 Impacts | Actions as a result of LW 34 |
|-------|--|---|---------------|-------------------------------------|
| | <p>cracking or exfoliation of site, movement of existing planes and joints at panel, block fall of structure. Observed by comparing pre-mining photographs with post-subsidence/mini ng photographs.</p> | <ul style="list-style-type: none"> • Implement increased monitoring within 2 weeks. • Develop site CMA in consultation with key stakeholders within 1 month, (pending stakeholder availability) and seek approvals. • Completion of works following approvals. • Issue CMA report within 1 month of works completion. • Conduct additional monitoring and reporting within 2 weeks. • Conduct initial follow up monitoring & reporting within 2 months of CMA completion. • Report in the End of Panel Report. • Summarise all actions and monitoring in AEMR. • Notification to DPIM and resource manager/s within 24 hours of confirmation • Notify relevant Specialists within 24 hours of confirmation. | | <p>approved monitoring program.</p> |

Appendix 1
