

## OEH – Report on Site Verification Certificate

### DP&E Application No. 14\_6667

**Project Name:** Wilpinjong Coal Mine

**Proponents Name:** Wilpinjong Coal Pty Ltd

**Proponents Address:** 1434 Ulan – Wollar Road, Wilpinjong, NSW, 2850.

OEH Reference:

Date application received by OEH: see below

Date report dispatched to DP&E: 22 Sept 2014

#### Summary of Project:

The Wilpinjong Coal Mine is an existing open cut coal mining operation, located in the western coalfields of NSW, approximately 40 kilometres north-east of Mudgee and within the Mid-Western Regional Local Government Area, in central New South Wales. The Wilpinjong Coal Mine is owned and operated by Wilpinjong Coal Pty Limited, a wholly owned subsidiary of Peabody Energy Australia Pty Ltd.

The Wilpinjong Coal Mine has been operating since 2006 following approval by the NSW Minister for Planning under Part 3A of the NSW *Environmental Planning and Assessment Act, 1979*. The coal mine produces up to 15 million tonnes per annum of high-quality thermal coal for domestic electricity generation and export to Asia-Pacific markets.

Wilpinjong Coal Pty Ltd (WCPL) is seeking a Site Verification Certificate (SVC) for parts of Exploration Licences (EL) 7091 and 6169 where future mining development may be proposed.

OEH received the documents supporting the SVC application from DP&E on the 3<sup>rd</sup> September, 2014 and accompanying site observation data (BSAL data cards) on the 4<sup>th</sup> September, 2014 which enabled OEH to commence the SVC assessment. On the 11<sup>th</sup> September, 2014, following an initial assessment of the SVC application and associated documents, OEH requested the proponents (via DP&E) to provide missing field data (on BSAL data cards) to enable OEH to finalise its assessment. These were provided on the 18<sup>th</sup> September, 2014 which enabled OEH to complete the SVC assessment report for DP&E.

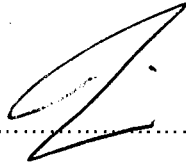
This document undertakes a review of data supplied as part of the 14\_6667 SVC application against the *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land (BSAL)*. OEH provides the following advice in respect of the 14\_6667 SVC application.

#### OEH Advice to DP&E:

|                                                                                                                                                  |        |
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| Applicant's soil and land data appears consistent with the protocol for site verification and mapping of biophysical strategic agricultural land | Mostly |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------|

|                                                                                                                                                                             |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Applicant's soil and land data appears consistent with OEH soil survey knowledge and existing soil and landscape data of the general area                                   | Yes |
| Applicant's project area, or part thereof, is likely to contain BSAL according to the protocol for site verification and mapping of biophysical strategic agricultural land | No  |

**Approved by:**



**Brian Jenkins**, Senior Team Leader, Assessment

# OEH ASSESSMENT OF BSAL SITE VERIFICATION CERTIFICATE APPLICATION

14\_6667

| SUMMARY OF ASSESSED ITEMS                                                                                                                                                                                                                            | Appropriate as per the Protocol |    | Justification                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                      | Yes                             | No |                                                                                                                                                                                                                                                                                         |
| <b>PERSONNEL</b>                                                                                                                                                                                                                                     |                                 |    |                                                                                                                                                                                                                                                                                         |
| Evidence provided by the applicant that a qualified soil scientist oversaw the verification assessment and signed off on the quality and extent of the work                                                                                          | X                               |    | The SVC report and soil survey was undertaken by Dr David McKenzie, a Certified Practising Scientist (CPSS) with a Stage 3 accreditation. This meets the requirement of the <i>Interim Protocol</i> .                                                                                   |
| <b>MAPS</b>                                                                                                                                                                                                                                          |                                 |    |                                                                                                                                                                                                                                                                                         |
| Geographically accurate base map (at 1:25,000) of assessment area supplied as per <i>Interim Protocol</i> . Spatial dataset (boundary of assessment area) supplied in GIS format as per <i>Interim Protocol</i> .                                    | X                               |    | Locational base map supplied at 1:25,000 and generally meets information requirements of the <i>Interim Protocol</i> . Although contour information was not provided, slope data was provided using LIDAR in Map 1. Spatial data was also supplied as per the <i>Interim Protocol</i> . |
| Soil map (at 1:25,000) of project area supplied including all observation (Detailed, Check and Exclusion) sites as per <i>Interim Protocol</i> . Spatial datasets (soil map, observation sites and data reliability/data source diagram) supplied in | X                               |    | Soil type map supplied at 1:25,000 scale as per the <i>Interim Protocols</i> . Soil type map units and observation sites provided. The "Steep Zone" soil landscape unit appears to not correlate with LIDAR > 10% slope in some areas. All                                              |

| SUMMARY OF ASSESSED ITEMS                                                                                                                                                                                             | Appropriate as per the Protocol |    | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                                                                                                                                                                                                                       | Yes                             | No |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| GIS format as per <i>Interim Protocol</i> .                                                                                                                                                                           |                                 |    | spatial data also supplied as per the <i>Interim Protocol</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Map of assessment area showing BSAL (at 1:25,000) and exclusion zones marked according to their BSAL limitation. Spatial dataset (boundary of BSAL areas) supplied in GIS format as per the <i>Interim Protocol</i> . | X                               |    | <p>A BSAL map was provided at 1:25,000 scale identifying exclusion zones and the boundary of BSAL.</p> <p>Although the assessment of BSAL areas was not presented in the application, exactly as per the <i>Interim Protocol</i>, it was possible to extrapolate BSAL assessed <i>Observation Site</i> information with associated soil map units to allow the interpretation of BSAL and the accuracy of the BSAL boundary across the application to be assessed.</p> <p>BSAL boundary data was also supplied as per the <i>Interim Protocol</i>.</p> |
| Maps presented in correct datum with appropriate symbology, north points, unambiguous legends, meaningful colour ramps, scale bars, and sampling grid included as per the <i>Interim Protocol</i> .                   | X                               |    | All figures and maps were clearly presented in accordance with the <i>Interim Protocol</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Metadata for spatial datasets have been provided as per the <i>Interim Protocol</i> .                                                                                                                                 | X                               |    | Metadata has been provided for all spatial files in accordance with the <i>Interim Protocol</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| SUMMARY OF ASSESSED ITEMS                                                                                                                                                                                             | Appropriate as per the Protocol |    | Justification                                                                                                                                                                        |
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|                                                                                                                                                                                                                       | Yes                             | No |                                                                                                                                                                                      |
| LODGEMENT OF SITE AND LABORATORY DATA                                                                                                                                                                                 |                                 |    |                                                                                                                                                                                      |
| All Site observations lodged on BSAL Soil Data Cards and all required field attributes completed correctly for each observation type as per the <i>Interim Protocol</i> (i.e. <b>check. exclusion and detailed</b> ). | X                               |    |                                                                                                                                                                                      |
| All Laboratory data supplied in the SALIS Lab Data Template, appropriate test procedures (e.g. National Test Code) identified and all relevant test results completed as per the <i>Interim Protocol</i> .            | X                               |    | All laboratory data was correctly supplied in the SALIS Lab Data Template and all test procedure identified and relevant test results completed as per the <i>Interim Protocol</i> . |
| MODEL OF SOILS DISTRIBUTION                                                                                                                                                                                           |                                 |    |                                                                                                                                                                                      |
| Where the proponent does not have access to the land, a model of soils distribution is provided detailing the methodology used to enable an assessment of the land in question to be made.                            | NA                              | NA | The proponent had access to the SVC application area.                                                                                                                                |
| SITE ASSESSMENT                                                                                                                                                                                                       |                                 |    |                                                                                                                                                                                      |
| The project area or part thereof contains a contiguous area of at least 20 hectares which meets all BSAL conditions – possible/verified BSAL adjoining the assessment area may need to be considered                  |                                 | X  | All soil map units were dominated by soil observation sites assessed as not meeting key BSAL criteria, and/or individual soil map unit polygons which were less than 20ha in size.   |

| SUMMARY OF ASSESSED ITEMS                                                                                        | Appropriate as per the Protocol |    | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                                                                                  | Yes                             | No |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Sampling density is as specified in the <i>Interim Protocol</i>                                                  | X                               |    | Sampling density is 1 site per 17.8 hectares (ha) based on total of 60 sites were provided over a project area of 1068 hectares (ha), as calculated by OEH using proponent's data. This falls within 1 site per 5 – 25 hectares (ha) as specified for high-risk activities in the <i>Interim Protocol</i> .                                                                                                                                                                                                                                                                                      |
| Site observations are recorded as specified in the <i>Interim Protocol</i>                                       | X                               |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Observation sites (check, detailed and exclusion sites) are relatively evenly distributed across the survey area | X                               |    | Observation sites were well distributed across the application area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Each soil type identified has at least three Detailed sites                                                      |                                 | X  | Six (6) soil map units were identified in the soil survey but 3 were excluded as BSAL with > 10% slopes using LIDAR. Of the three (3) remaining map units, with contiguous area of >20ha, Two (2) soil map units met the requirement of the Interim Protocol with more than three Detailed Sites (LS-S – 7 sites & MS-C – 4 sites). The remaining Midslope Gravelly Sands (MS-GS) soil map unit had three (3) observation sites but only one Detailed site (6). The other two sites (58,59) were assigned Check site status, limited only by excavation technique (hand auger) but otherwise met |

| SUMMARY OF ASSESSED ITEMS                                                                                      | Appropriate as per the Protocol |    | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                                                                                                                | Yes                             | No |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                |                                 |    | <p>criteria for <i>Detailed</i> sites with laboratory analysis.</p> <p>There is one <i>Detailed</i> site observation that was incorrectly classified that affected its BSAL status. Site (22) which consists of topsoils (A1, A3 horizons) overlying buried soil topsoils (2A, 3A horizons), has been incorrectly classified as a Rudosol. All layers are moderately structured A horizons and according to ASC should be classified as Tenosols/Tenosol/Tenosol (see ASC p9). As the total soil depth is &gt; 100 cm, with no other limiting criteria, the observation site is BSAL according to the <i>Interim Protocol</i>. However this observation site's new BSAL status does not affect the overall map units BSAL status which is based on the dominant soil type which is a Rudosol.</p> |
| All relevant data has been collected and provided for <b>detailed sites</b> as per the <i>Interim Protocol</i> | X                               |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Detailed sites</b> are representative of the soil type being assessed                                       | X                               |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description of <b>detailed sites</b> is accompanied by a photograph of the site and of                         |                                 | X  | 54 observation sites were accompanied by well-prepared photographs of the soil profile but there were no profile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| SUMMARY OF ASSESSED ITEMS                                                                                                                          |  | Appropriate as per the Protocol |    | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                                                                                                                                                    |  | Yes                             | No |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| the soil profile being described                                                                                                                   |  |                                 |    | photos for sites 55 – 60. Only two landscape photos were provided (site 50 and 55).                                                                                                                                                                                                                                                                                                                                                                                        |
| Appropriate information (as specified in the <i>Interim Protocol</i> ) collected for all <b>exclusion sites</b>                                    |  | NA                              | NA | Slopes > 10% used LIDAR method which does not required exclusion sites to be undertaken as per the <i>Interim Protocol</i>                                                                                                                                                                                                                                                                                                                                                 |
| At least two <b>exclusion sites</b> per polygon in excluded areas (except for areas with no access e.g. only remote modelling of attributes)       |  | NA                              | NA | Slopes > 10% used LIDAR method which does not required exclusion sites to be undertaken as per the <i>Interim Protocol</i>                                                                                                                                                                                                                                                                                                                                                 |
| Adequate numbers of <b>check sites</b> used to (i) allocate a site to a soil type and soil map unit and, (ii) confirm existing mapping             |  | X                               |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CROSS REFERENCE ASSESSMENT WITH OEH SOILS DATA                                                                                                     |  |                                 |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Soil mapping and attributes appear consistent with OEH soil and landscape data and expected/anticipated soil types in the project area or locality |  | X                               |    | <i>Soil Landscape Mapping of the Dubbo 1:250,000 sheet</i> (Murphy and Lawrie (1998) indicates there are three main soil landscapes that cover the assessment area. Barrigan Creek (bc), Ulan (ul) and Lees Pinch (lp) and all have significant soil and landscape constraints for agriculture. Lees Pinch (lp) consists of steep sandstone country with shallow infertile soils and rock outcrop. The less steep landscapes of Barrigan Creek (bc) and Ulan (ul) have low |



| SUMMARY OF ASSESSED ITEMS | Appropriate as per the Protocol |    | Justification                                                                                                                                                                                                                                                                 |
|---------------------------|---------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | Yes                             | No |                                                                                                                                                                                                                                                                               |
|                           |                                 |    | fertility with low phosphorus and nitrogen, gravelly or hardsetting topsoils, localised salinity, localised seasonal waterlogging, and moderate (bc) to high (ul) erosion hazards. These soils are generally consistent with those identified in the proponent's soil survey. |