

OEH – Report on Site Verification Certificate

DP&E Application No. 15_7274

Project Name: Mount Owen Continued Operations Project

Proponents Name: Mount Owen Pty Ltd, a subsidiary of Glencore Coal Australia Pty Ltd

Proponents Address: 666 Hebden Street, Ravensworth NSW 2330.

Date application and complete data received by OE: 19th October 2015

Date report dispatched to DP&E: 3rd November 2015, revised report dispatched 10 November 2015

Summary of Project:

The Mount Owen Continued Operations Project is located in the Upper Hunter Valley approximately 20 km north-west of Singleton. The project is seeking consent to continue operations until 2030 and extract an additional 92 million tonnes of coal for domestic and export markets.

The Mount Owen project area totals 485 hectares with most of the area located within an existing mining lease and is not subject to a Site Verification Certificate (SVC). However, as the project is a State Significant Development, an SVC is required for the new proposed mining lease which covers a total area of 97.1 ha of land.

OEH received documents supporting the original SVC application and data (SVC No 15_7060) from DP&E on the 3rd June, 2015. This original application covered 485 ha of land including both existing lease and proposed new lease areas. OEH assessed this application and advised DP&E, on the 10th June, 2015, that there was insufficient data for OEH to undertake its assessment of the SVC application.

A second SVC application (SVC 15_7274), limited to the 97.1 hectares of the proposed new lease area, was lodged with DP&E and sent to OEH for assessment. OEH received the application and associated data on the 14th October 2015, with further information provided in response to further advice from OEH on the 19th October. In this submission the proponent provided revised soils mapping and new soils data obtained through further site investigation.

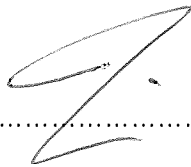
This document undertakes a review of data supplied as part of SVC application 15_7274 against the *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land (BSAL)*. OEH provides the following advice in respect of the SVC 15_7274 application.

Note: This application fails to meet Interim Protocol in a number of areas however the data provided for the area clearly shows that the area is unlikely to contain BSAL.

OEH Advice to DP&E:

Applicant's soil and land data appears consistent with the protocol for site verification and mapping of biophysical strategic agricultural land	No
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:



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Brian Jenkins, Senior Team Leader, Assessment

OEH ASSESSMENT OF BSAL SITE VERIFICATION CERTIFICATE APPLICATION

SVC 15_7274

SUMMARY OF ASSESSED ITEMS	Appropriate as per the Protocol	Justification
	Yes	No
PERSONNEL		
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 original BSAL assessment and soil survey data, provided for SVC 15_7060, was certified by a qualified soil scientist, Peter Fogarty (Certified Practising Soil Scientist CPS 3). However, the proponent has provided no evidence that a qualified soil scientist has signed off on the quality and extent of the work to support the soil mapping or BSAL assessment for this SVC application (15_7274). Without this certification OEH cannot verify the accuracy or quality of the majority of the soils mapping and data, nor the BSAL assessment, for this SVC application.
MAPS		

SUMMARY OF ASSESSED ITEMS	Appropriate as per the Protocol		Justification
	Yes	No	
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		
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 GIS format as per <i>Interim Protocol</i> .		X	Revised soil map (from update of 19 th October 2015) was not supplied in GIS format. The revised soil map involves the removal of an entire soil map unit so represents a significant change.
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	No BSAL map provided.
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		
Metadata for spatial datasets have been provided as per the <i>Interim Protocol</i> .	X		
LODGEMENT OF SITE AND LABORATORY DATA			

SUMMARY OF ASSESSED ITEMS	Appropriate as per the Protocol		Justification
	Yes	No	
All Site observations lodged on BSAL Soil Data Cards or eDIRT and all required field attributes completed correctly for each observation type as per the <i>Interim Protocol</i> (i.e. check, exclusion and detailed).		X	None of the detailed sites have sufficient data described to qualify as detailed sites (see below). Check sites were provided without soil photos. Three detailed sites 26, 27 and 33 (new to second submission) have been submitted via spreadsheet and cannot be loaded; these should be submitted via eDIRT.
All Laboratory data supplied via SALIS Lab Data Template or eDIRT, appropriate test procedures (e.g. National Test Code) identified and all relevant test results completed as per the <i>Interim Protocol</i> .		X	Profiles 29 and 32 have no lab data for B2 horizon. Although these B2 horizons are below the BSAL assessment depth of 750 mm, this information is required to complete a full soil classification as per the <i>Interim Protocol</i> p12. Profile 34 has mismatches between layer and laboratory sample depths however on this occasion it did not affect the ability to make an assessment on this observation site.
MODEL OF SOILS DISTRIBUTION			

SUMMARY OF ASSESSED ITEMS	Appropriate as per the Protocol		Justification
	Yes	No	
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.	N/A		
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	No observation sites could be classified as BSAL and OEH does not expect any mappable BSAL to occur within the project area.
Sampling density is as specified in the <i>Interim Protocol</i>	X		Sampling density is 1 site per 8.1 hectares (ha) based on total of 12 sites over a project area of 97.1 hectares (calculated by OEH using proponent's data). This falls within the 1 site per 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	Various issues with site descriptions as noted below. In general, soil descriptions are poor, with misapplied horizons, inconsistent or missing data and incomplete and/or incorrect ASC classifications. Tables 1.9 and 1.10 in Attachment 1 indicate that there is confusion between ASC great groups/subgroups and family (see column headed

SUMMARY OF ASSESSED ITEMS	Appropriate as per the Protocol		Justification
	Yes	No	
			"ASC family"). None of the detailed sites have sufficient data described to qualify as detailed sites.
Observation sites (check, detailed and exclusion sites) are relatively evenly distributed across the survey area	X		
Each soil type identified has at least three Detailed sites	X		The Yellow Kurosols soil map unit has only 1 detailed site. However this unit is <20 ha in size, cannot therefore be BSAL and thus does not require detailed assessment.
All relevant data has been collected and provided for detailed sites as per the <i>Interim Protocol</i>		X	None of the detailed sites have been sufficiently described to qualify as detailed sites under the <i>Interim Protocol</i> . As previously advised the proponent should ensure that all of their detailed sites meet the requirements of the <i>Interim Protocol</i> . Additional or changed data needs to be supplied to OEH with individual changes highlighted on a cell-by-cell basis to ensure that all changes are identified. For example, site 28 has ASC not classified to Family level, no base of observation, no effective rooting depth, no field

SUMMARY OF ASSESSED ITEMS	Appropriate as per the Protocol		Justification
	Yes	No	
			pH's, no field textures, no structures, no mottles, no coarse fragments and no segregations. The proponent needs also to record and submit sites 26, 27 and 33 through eDIRT so that they can be recorded in SALIS. Site 26 has a measured slope of 14% and should occur in an exclusion area – although for some reason it appears a buffer has been applied around this point in the proponent's exclusion shapefile (Areas_of_Exclusion_mga56_rev1). The proponent should also check the data recorded for site 30 – in particular the texture grade (uniform sandy loam) versus grade of pedality, fabric and chemistry changes, and resultant ASC classification. The ASC may be OK but there are profile description issues, such as weak angular blocky structure for a sandy loam A1 that is also described as being a discrete layer of organic material.

SUMMARY OF ASSESSED ITEMS		Appropriate as per the Protocol		Justification
		Yes	No	
Detailed sites are representative of the soil type being assessed		X		
Description of detailed sites is accompanied by a photograph of the site and of the soil profile being described		X		Photos of soil profiles are of poor quality. A persistent issue is that backhoe pits have not been cleaned up after excavation before soil photos were taken. This makes it difficult to verify field soil types and properties, due to the disturbance, mixing and/or smearing of different soil materials.
Appropriate information (as specified in the <i>Interim Protocol</i>) collected for all exclusion sites		N/A		No exclusion sites identified, although there is at least one site (26) with a measured slope of 14% that should be an exclusion site.
At least two exclusion sites per polygon in excluded areas (except for areas with no access e.g. only remote modelling of attributes)		N/A		No exclusion sites identified.
Adequate numbers of check sites used to (i) allocate a site to a soil type and soil map unit and, (ii) confirm existing mapping			X	Although sufficient check sites have been described, missing data – in particular soil photos as required by the <i>Interim Protocol</i> (p.13) – make it difficult to corroborate the soil descriptions.
CROSS REFERENCE ASSESSMENT WITH OEH SOILS DATA				

SUMMARY OF ASSESSED ITEMS	Appropriate as per the Protocol		Justification
	Yes	No	
Soil mapping and attributes appear consistent with OEH soil and landscape data and expected/anticipated soil types in the project area or locality	X		The project area is entirely covered by the <i>Soil Landscapes of the Singleton 1:250,000 Sheet</i> (Kovac and Lawrie, 1991). The Bayswater (bz) soil landscape, which extends across the entire project area, comprises mainly Yellow Solodic Soils and Red and Yellow Podzolic Soils on undulating low hills founded on the Singleton Coal Measures. Limitations include hardsetting surfaces, moderate to high erodibility, high structural degradation hazard, sodic subsoils, low fertility and (in Solodic Soils) high levels of salinity. Significant gully erosion is evident along lower drainage lines. This regional-scale assessment accords with the proponent's assessment of soils in their project area.