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OD Hydrology

28 August 2015

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Attn: Paddy Power (Coolmore), Ross Cole (Darley)

Re: Review of Secretary's Environmental Assessment Report – State Significant Development Assessment Drayton South Coal Project (SSD 6875).

Dear Sirs,

The following information and advice is provided based on review of the New South Wales Department of Planning and Environment Secretary's Environmental Assessment Report for the recently released Draytons South Coal Project Environmental Impact Statement (Draytons South EIS).

Review was undertaken to provide advice regarding deficiencies/omissions/errors in the Proponents and Departments reports to date relevant to surface water and groundwater, and has indicated the following key areas of concern regarding surface water and groundwater assessments/issues.

- All previously ODH reported conclusions and advice regarding limitations in final void impact assessment remain valid for current information. No additional information or evidence has been provided to modify our previous advice.
- Effectively two main areas of deficient assessment and understanding:
 1. Lack of a clear, confirmed mine plan allowing direct and robust assessment of potential life-of-mine water management system behaviour and impacts, and erroneous presentation/interpretation of results of assessment that was undertaken.
 2. Limited and erroneous long-term final void assessment, with overly basic and flawed assumptions regarding surface water/groundwater interaction and linkages. Direct inconsistencies between groundwater and surface water modelling and reported outcomes, with particular implications for both long-term void water quality and impact assessment against Aquifer Interference Policy (AIP).

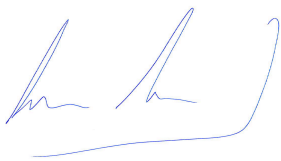
- A final mine plan is yet to be defined, with currently four (4) possible scenarios still being described. Potentially significant differences in water management requirements and outcomes exist between scenarios with uncertainty remaining regarding the availability of key areas for either disposal of mine waste-streams (rejects, tailings) and/or to provide life-of-mine water storage within the mine water management system. Only the preferred scenario (i.e. most favourable to the Proponent) has been assessed to any degree with the potentially significant differences in constraints and requirements between scenarios not meaningfully assessed. Department reporting recognises that the potential exists for significant changes in water management requirements, including effects on production, however states that “the Department is satisfied that there is sufficient flexibility in the proposed water management system ...” without any direct assessment by either the Proponent or Department.
- All parties, including Proponent, independent reviewers and Department, continue to undertake and review groundwater and surface assessment as isolated studies, without any robust information or review provided regarding the linkages between surface water and groundwater modelling platforms. This is particularly critical in the assessment and review of post-mine final void behaviour and very long-term salinity and water balance behaviour and impacts.
- Proponents assessment of mine water management behaviour leaves significant uncertainty in terms of potential mine plan scenario and consequent water management requirements for: (i) sufficient storage capacity to ensure no uncontrolled spill from site under all potential wet climatic conditions, and; (ii) access to sufficient water supply to maintain supply under all potential dry climatic conditions. Assessment to date is still deficient in providing a meaningful understanding of the actual risks associated with the Project for both significant periods of supply shortfall as well as storage build-up beyond manageable levels, with potentially significant implications for actual Project viability and long-term environmental legacy. IESC did not undertake review of the surface water management system to any degree. Departmental reporting indicates acceptance of Proponent outcomes without any independent modelling assessment.
- Assessment of impacts against AIP are based on rudimentary calculations, arbitrary selection of definitions for key inputs and inputs values that are directly inconsistent with other reported outcomes. Of note are an assumption of 5 ML/year long-term rate of seepage from the mine area to the Hunter alluvium, which has reduced from approximately 200 ML/year. If this original estimate were maintained the AIP minimal impact criteria would not be met.

It is worth noting that each of these points have been presented and submitted on previous occasions and to date no independent direct assessment has been undertaken to quantify the implications and potential impacts associated with the errors, omissions and deficiencies above. As such, it is recommended that if presentation of any or all of the above issues to the Planning Assessment Commission (PAC) is to be undertaken that two key components of technical assessment be undertaken:

1. Life-of-mine water balance modelling – could be based on simplified information as available publically and/or within Proponent reporting, however would aim to provide direct illustration of the issues that have been and are being raised regarding potential Project and environmental risks associated with non-robust understanding of water management behaviour over the proposed Project life.
2. Long-term final void water and salt balance modelling – would provide direct illustration of the effect of the erroneous (and physically impossible) set of assumptions adopted within the Proponent assessment and provide greater clarity and understanding regarding likely long-term impacts as measured against AIP.

I trust the information is useful and if you wish to discuss any or clarify anything further, please do not hesitate to call.

Yours sincerely,



Owen Droop

Director/Principal Water Resources Engineer