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NSW Department of Planning and Environment  
GPO Box 39  
Sydney NSW 2001

Attention: Robert Byrne

Dear Robert

**RE: Review of Estuarine Processes Modelling Report: Proposed Mixed Use Subdivision,  
West Culburra, (report P1203365JR04V02)**

Thank you for inviting BMT WBM to provide assistance with regard to the above. This letter provides some commentary on that report. I will be happy to discuss outcomes with the Department if required.

Yours Faithfully  
**BMT WBM**



**Dr Michael Barry**  
**B.E. (Hons), B.Sc., PhD, FIEAust, CPEng, RPEQ, NPER**  
**Technical and Innovation Manager**

The first review of the consultant's receiving water modelling work was provided by BMT WBM in November 2014. Since that time, BMT WBM has provided ongoing advice to improve the model construction and calibration. BMT WBM has now been invited to review a modelling report entitled *Estuarine Processes Modelling Report: Proposed Mixed Use Subdivision, West Culburra, NSW* (P1203365JR04V02, November 2016).

The report prepared by the consultant for review included a large number of simulation results, including sensitivity and scenario analyses, with a range of presentation statistics.

Whilst there are other matters of concern, the matter of key significance in the latest modelling report is the reliance placed on the efficacy and reliability of the landside stormwater treatment measures in protecting the receiving waterway. This reliance is explicitly noted in the consultant's report in several places (e.g. Sections 5.4.2.a.i, 5.4.2.a.ii, 5.4.2.c, 5.7.6, 6.7 and 13.3.2.a.i), and in some instances it is claimed that the stormwater treatment train proposed for the site is effective to the point of improving estuarine water quality over current (undeveloped) conditions (e.g. Sections 5.4.2.c, and 5.6.1, and figures PS02-Z565 and thereabouts). In essence, this reliance means that the performance and predictions of the receiving model are somewhat moot - the environmental performance of the proposed development hinges on the robustness of the proposed landside stormwater treatment devices.

This being the case, it means that the rigour applied to the design of the landside stormwater treatment devices is critical, and must be of the highest order – any shortcomings in their design would have the potential to result in adverse estuarine impacts. As such, Mr Tony Weber of Alluvium has been commissioned by the Department to undertake review of the design of landside stormwater treatment devices, and provide an assessment of this rigour.

Mr Weber's review letter of 24<sup>th</sup> February 2017 raises significant concerns relating to the proposed design, and the way it has been modelled by the consultants. These concerns are sufficient to raise considerable uncertainty for this reviewer with regard to impact predictions made as part of the receiving water modelling. Without resolution of Mr Weber's concerns and subsequent reassessment of impacts on receiving waters, the water quality impact of the proposal on the Crookhaven estuary is unable to be meaningfully determined.