Hunter Water Corporation
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21 January 2019

Our Ref: HW2011-486/40/21

Resource Assessments
NSW Department of Planning and Environment
23-33 Bridge Street
Sydney NSW 2000

Attention: Melissa Anderson
via email: Melissa.Anderson@planning.nsw.gov.au

Dear Melissa,

BOBS FARM SAND MINE PROJECT (SSD 6395)

Thank you for your email of 22 November 2018 to Hunter Water seeking comments and recommended conditions of consent for a proposed sand quarry at Nelson Bay Road, Bobs Farm. The proposed development involves the extraction and processing of sand, with the site incorporating Lots 10 and 11 DP 1071458, Lot 254 DP 753204 and Lot 51 DP 1015671 on Nelson Bay Road, Bobs Farm.

Hunter Water understands that the development proposes, the extraction of 750,000 tonnes of sand per year over a 15 year period through dry and wet extraction (dredging) methods, staged clearing of approximately 39 hectares of vegetation, the construction of gravel and sealed haul roads, a site operations shed, and operations area.

Further, the proposed development involves the extraction of approximately 50% of the sand by dredging below the groundwater table to a level of -15 metres AHD that would result in the creation of a large water body with an area of approximately 25 hectares. Supporting documentation states that in addition to water to be used for operational processes, such as washing, dust suppression and other requirements or losses; the proposal is expected to result in the ongoing evaporative loss of approximately 90 million litres of fresh water per year from the proposed 25 hectare post-extraction lake.

Key matters of interest to Hunter Water, along with recommendations to manage these, are described as follows. We acknowledge that some recommendations regarding operational management reflect commitments made in the project Environmental Impact Statement (EIS), or partly so.

1. North Stockton Catchment Area

The proposed development is adjacent to the northern boundary of the North Stockton Catchment Area as defined under the *Hunter Water Regulation 2015*. The location of the proposed development in relation to the gazetted catchment area boundary is indicated in **Figure 1**, attached. While the proposal is located outside of the gazetted catchment area (to the immediate north), catchment area boundaries typically follow convenient landscape or cadastral features, in this case Nelson Bay Road, and it is still located within the landform unit that comprises the North Stockton aquifer. Groundwater in the proposal area is, therefore, contiguous with groundwater in the catchment area.

While groundwater is not currently extracted from the North Stockton aquifer for potable supply by Hunter Water, the Corporation maintains an interest in protecting the water source and ensuring it is not adversely impacted by inappropriate development. This includes ensuring that all activities are undertaken in a manner consistent with current best management practice.

2. Extractive Operations, Aquifer Protection and Site Rehabilitation

In regards to best management practice, we note that the proposal to extract sand below the water table to -15 metres AHD is inconsistent with current best practice and the approval of other sand extraction operations in the area, which have limits on the depth of extraction imposed upon them in order to protect groundwater sources. For example, sand extraction at Sibelco's Tanilba Northern Dune operation, Sibelco's Anna Bay operation, the Cabbage Tree Road Quarry (SSD-6125, yet to commence), Salt Ash Sand Quarry (07_0094) and the Fullerton Cove Sand Quarry (07_0145) all have extraction depth limits imposed upon them to safeguard groundwater sources. Measures to protect groundwater sources are related to both pollution risk and the loss of valuable water supplies through drainage and evaporation.

Hunter Water recommends that all extractive operations should be designed and undertaken in a way that ensures protection of water sources and facilitates sustainable future land use. Hunter Water is of the opinion that inadequate justification has been provided for the proposal to leave a 25 hectare open lake following the completion of sand extraction and it is simply a proposal to maximise the volume of sand extracted from the site and is not supported. The proposed extraction approach would not only result in ongoing loss of approximately 90 million litres of water per year from the aquifer through drainage and evaporation, but would, in the absence of a sound and approved proposal for a future water-based use of the site, result in a bad land use planning outcome that is not considered to be in the public interest.

Hunter Water considers that, with Port Stephens only a short distance away, the suggested future water-based uses for the site are implausible and without sound basis. Hunter Water therefore recommends that the dredging proposal not be approved. Instead, if extractive operations are approved, they should be limited in depth to protect the underlying groundwater source and so the site can be rehabilitated in a way that ensures a sustainable land use, compatible with the surrounding land.

3. Limits to Extraction Depth

Should the proposed activity be approved, limiting the depth of sand extraction to above the water table with a suitable buffer would be consistent with the determination of other sand extraction activities in the vicinity and is supported by Hunter Water. The approach adopted for other sand extraction operations in the area, where the extraction depth is limited by the requirement to create a final landform that is at least one metre above the predicted maximum groundwater elevation, is considered suitable.

This approach assumes that topsoil may be salvaged prior to extraction activities by way of site preparation will be a nominal depth of 0.3 metres and may be removed to a limit of 0.7 metres above the predicted maximum groundwater elevation and stockpiled for subsequent replacement in the same or similar location on completion of the extraction activities for site rehabilitation purposes.

It is recommended that survey methods used to control extractive operations be specified in operational management plans requiring approved prior to commencement of works to avoid issues such as over-excavation, as has occurred at times at other extractive operations in the area.

Plans showing the pre- and post-extraction levels should be included in a report prepared each year to review the operation to demonstrate compliance with the extraction limits.

Relevant approval authorities should be notified immediately if it is determined that extraction or other levels do not comply with the approval conditions for any reason.

4. Water Quality and Groundwater Management

Hunter Water considers that extractive operations can be feasibly undertaken without adversely impacting on water quality, provided suitable operational management controls are developed and implemented to safeguard against aquifer pollution or contamination risks and an appropriate monitoring program is undertaken to assess this during the life of the operation.

In order to ensure suitable operational management controls are in place, a Groundwater Management Plan should be required for approval prior to the commencement of operations. The Plan should include a monitoring program that describes the parameters to be measured, sampling locations, sampling frequency and details of action to be undertaken in the event of unexpected results, such as detected contamination.

The proposed groundwater monitoring described in the EIS is generally considered acceptable, although more detailed consideration of the program may be required prior to approval of the Plan to identify all of the relevant monitoring requirements for the site. In particular, we recommend that event based monitoring be added to the monitoring frequency (with event triggers to be determined from consultation during preparation of the plan) in order to accurately determine the hydrological characteristics of the site, which will not be able to be established from the proposed quarterly monitoring.

5. Environmental Management Plan / AEMR

All relevant environmental issues identified in the assessment process should be detailed in an Environmental Management Plan (EMP) for the operation that is subject to approval prior to the commencement. Hunter Water is particularly interested in any matters related to the management of regional water resources and matters that may impact on the North Stockton Catchment Area.

Operational performance should be reported annually in an Annual Environmental Management Report (AEMR) that reviews the matters described in the EMP.

6. Pollution Risk and Spill Management

The storage and management of fuels and other chemicals used on site should comply with relevant standards and be undertaken in a way that protects the aquifer from the risk of contamination. Spills of any such materials should be cleaned up immediately and disposed of at an appropriately licenced facility. These matters should be documented in the EMP and include a spill management procedure (including remedial action to be implemented in the event of a spill incident).

7. Independent Environmental Audit

It is recommended that any approval should include a condition requiring that independent audits of the operation be conducted at specified intervals during the life of the operation to assess compliance against environmental and other approval requirements.

Hunter Water can provide more detailed information on any of the above matters, such as for the setting of approval conditions, if required. If you require further advice or clarification regarding this submission, please contact me on (02) 4979 9545.

Yours sincerely

Malcolm Withers
Account Manager Major Development

ATTACHMENT 1

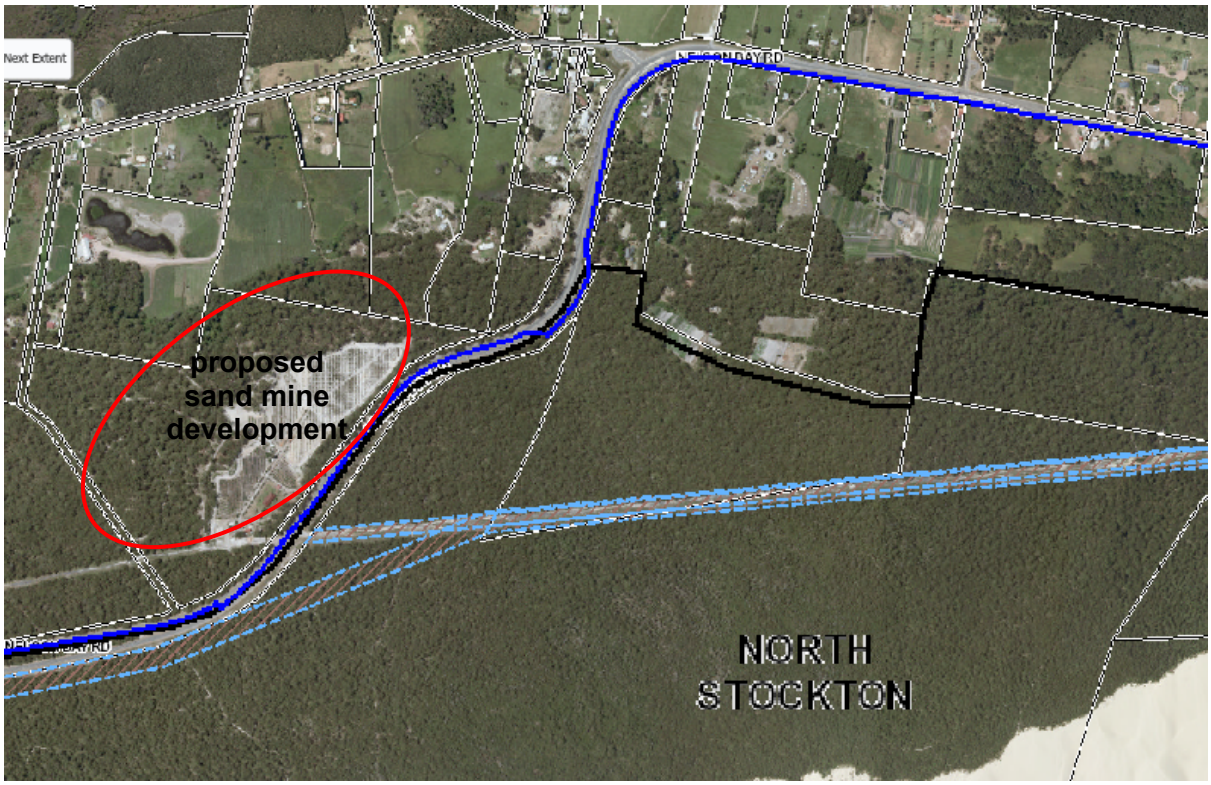

Figure 1: Location of the proposed Bobs Farm sand mine development in relation to the gazetted North Stockton Catchment Area (catchment boundary indicated by the black line). Also shown are the locations of Hunter Water water mains (dark blue line following Nelson Bay Road) and easements for services and access (light blue dashed line with brown hatching)