Department of Industry

OUT18/2661

Ms Deana Burn
Industry Assessments
NSW Department of Planning and Environment

deana.burn@planning.nsw.gov.au

Dear Ms Burn

Cairncross Waste Management Facility Expansion (SSD 5792)
Comment on the Environmental Impact Statement

I refer to your email of 13 February 2018 to the Department of Industry in respect to the above matter. Comment has been sought from relevant branches of Lands & Water. Any further referrals to Department of Industry can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

The department has reviewed the Environmental Impact Statement and provides the following recommendations and comments for consideration in assessment of the proposal with detailed comments at **Attachment A**.

Recommendations

Prior to Project Approval

- The proponent should provide further detail on the proposed water level triggers from monitoring bores in relation to maintaining a buffer beneath the landfill that will limit hydrostatic uplift pressure. It is noted that observation bores located adjacent to the trench are likely to record lower water heads than that beneath the adjacent parts of the landfill.
- The impacts of predicted increases in post development velocities from the proposed sediment basins should be assessed and mitigation measures be developed as required. The predicted increase in velocities is inconsistent with standard recommendations of DoI Water to ensure post discharge velocities do not exceed pre discharge rates.
- An assessment should be provided of the impacts due to the proposed groundwater redirection to the downstream surface water system in regards to water quality, timing and volume of flows and aquatic habitat.
- The size of the water storages during and post the development that capture clean runoff should be assessed against the requirements of the Harvestable Rights Dam Policy.
- An alternate water source for use during extreme drought periods should be identified.

Recommended Conditions of Approval

- The proponent must update the Groundwater Management Plan in consultation with DoI Water prior to commencement of the project.

- The proponent must update the Surface Water Management Plan in consultation with DoI Water prior to commencement of the project.

Gaps in assessment

- It is not clear from the EIS if groundwater level triggers are being established to protect the risk of hydrostatic pressure beneath the landfill generating lift and potential perforation of the HDPE liner.
- The proposed sediment basin sizes for stage 2 is predicted to result in an increase in post development velocities by 10% for a 1 in 20yr ARI event and 18% for a 1 in 100yr ARI event. The EIS has deemed this increase not to be an issue due to the infrequent nature of such events. The impacts of such an increase on erosion and resultant sedimentation and aquatic habitat impacts have not been addressed. Where impacts are predicted, mitigating measures would need to be developed.
- The EIS indicates the proposal to install a gravel trench around the site to intercept groundwater and to allow it to discharge via natural flow to the south. This is proposed to occur during and post development. An assessment is requested of the impacts to the downstream surface water system in regards to water quality, timing and volume of flows and aquatic habitat.
- The surface water management assessment has not assessed the application of the Harvestable Rights Dam Policy for the project. Where dams are capturing runoff from clean areas their size needs to be within the Maximum Harvestable Rights Dam Capacity (MHRDC) for the property. As the site is progressively rehabilitated and after final rehabilitation, dams capturing clean runoff from rehabilitated areas are likely to need to be within the MHRDC. If the MHRDC is to be exceeded the dams would need to be resized or entitlement purchased in the relevant water source.
- The water balance indicates the requirement to rely on water from the fire-fighting storage during extreme drought years. The availability of water in the storage in such years is likely to be uncertain and it is recommended an alternate water source be identified.

Yours sincerely

Alison Collaros
A/Manager Assessments
10 April 2018

ATTACHMENT A

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Water Licensing

- The EIS has acknowledged the requirement to licence groundwater take via purchase on the water market. The small volumes required (maximum predicted 0.53ML/yr during excavation of Stage 2) do not raise an issue in the ability to obtain the entitlement from the New England Fold Belt Coast Groundwater Source of the Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources.

Hydrology

- Modifications to the hydrology include the capture of runoff within the disturbed area and diversion of clean water from rehabilitated areas. The dams to capture dirty runoff are within the Harvestable Right Zone and based on the dams being sized appropriately the volume will be excluded from the requirement for water licensing.
- The EIS indicates the proposed final landform will result in 4.3ha of one catchment being redirected into another. These two catchments flow into the same watercourse approximately 2km downstream of the site. The redirection of flow is not considered to be a significant impact to downstream environments.

Groundwater Impacts

- The hydrogeological assessment for the site predicts the peak groundwater inflow to the landfill operations of around 0.5 ML/yr. Impacts on sensitive receptors of GDEs and registered users is well within the Level 1 Minimal Impact Considerations category defined under the Aquifer Interference Policy (2012).
- It is noted on-going management of groundwater beneath the site is based on performance of the gravel trench. The trench is required to keep the site dry during construction and to limit the build-up of hydrostatic pressure beneath the landfill. If the hydrostatic pressure is sufficient, uplift of the HDPE line can occur, leading to perforation from content in the landfill.
- The generation of water level averages are indicated to be based on 15 years of water level data included both dry (2004-2011) and wet (2012-2014) weather periods (i.e. more dry years). As the area is subject to high rainfall and the data has identified a relationship with prevailing climate, water table fluctuations are potentially greater than captured over the period of record, particularly at the higher end.
- Managing the recovery of groundwater levels post construction will be a key issue in the operation of the facility. As stated in the EIS “In accordance with the draft Solid Waste Landfill Guidelines (NSW EPA, 2016), and to prevent high groundwater heads affecting the performance of the landfill liner, it is proposed to install a drainage trench”. To add confidence in the ongoing monitoring and reporting program, further detail is recommended on the water level triggers from monitoring bores in relation to maintaining a buffer beneath the landfill to limit hydrostatic pressure, noting that bores located adjacent to the trench are likely to be lower than that beneath the adjacent parts of the landfill.

Monitoring and Management

- The proponents hydrogeological assessment recommended the installation of four (4) additional groundwater bores at the south-western and south-eastern boundary of

Stages 2 and 3, respectively and a monitoring point in the gravel drainage trench prior to commencement of Stage 1. The additional bores should form part of the total monitoring network and appropriate trigger levels be developed consistent with ANZECC (2000) guidelines.

- The proponents hydrogeological assessment recommends groundwater trigger levels for both water quality and water levels. For water levels the maximum threshold levels are defined based on the historical maximum groundwater heads and allowing for changes due to development. Therefore, should the groundwater head within the closest monitoring bore fall below or rise above the trigger level for remedial action, alternative options will need to be implemented to maintain the heads above this level. The trigger levels apply to both the excavation and operation stage of development of Stages 1 to 3.

END ATTACHMENT A