

APA Technical Note - Western Outer Ring Main - Environment Effects Statement

TECHNICAL NOTE NUMBER: TN36

DATE: 11 October 2021

SUBJECT: Response to RFI 123 and 124

SUMMARY This Technical Note provides responses to the request for information queries raised in relation to RFI 123 and 124 for the Western Outer Ring Main (WORM) Environment Effects Statement (EES). This Technical Note should be read in conjunction with Technical Note 19 and Technical Note 11.

REQUEST: RFI 123 - Question 4 in letter dated 5 October 2021. Describe and explain the response that is proposed to be followed if groundwater were to be unexpectedly encountered during construction at a much shallower depth than anticipated based on the EES investigations.

RFI 124 - Question 5 in letter dated 5 October 2021. Describe and explain the trenching process for sections of the pipeline where surface water is present but vertically isolated from the groundwater table (below the trench excavation level) – for example, as indicated by the groundwater bore data presented in the EES for the Kalkallo Creek floodplain. What measures will be used to mitigate environmental risks in this situation?

Response

RFI Item 123 - Describe and explain the response that is proposed to be followed if groundwater were to be unexpectedly encountered during construction at a much shallower depth than anticipated based on the EES investigations.

- 1 If groundwater were to be intersected at shallower depths in areas where interaction has already been identified:
 - Inflow rates (and therefore volumes) may initially be higher until steady state conditions are reached, however the groundwater levels and aquifer parameters used in the estimation of the areas of influence are conservative, and therefore the potential impacts are expected to remain unchanged from that identified in the EES.
 - The existing Environmental Management Measures (EMMs GW1 and GW2) in the Construction Environmental Management Plan (CEMP) are considered sufficient to manage such instances.
- 2 If groundwater were to be intersected unexpectedly, i.e. groundwater levels previously mapped at depths greater than trench depths:
 - EMM GW1 requires the pipeline and facilities to be designed and constructed to minimise changes in groundwater levels, flows and quality so far as reasonably practicable. This mitigation measure applies to both groundwater that is expected and groundwater encountered unexpectedly.

- In the event that groundwater is unexpectedly encountered, inflow rates will be assessed and management measures identified in EMMs GW1 and GW2 implemented to minimize potential impacts to groundwater levels and groundwater bore users.
- If trench dewatering is required, groundwater quality will be assessed and disposal managed in accordance with EMM GW3.
- Section 7.2.3 of the EES Technical Report C *Groundwater* identified that in some areas of the pipeline alignment, localised perched groundwater may be intersected above the regional water table. The EES indicated that these perched systems will generally be localised, have low storage and are unlikely to yield significant volumes of groundwater. This suggests that there would be limited volumes of groundwater to manage/dispose of, with dewatering likely to have a low risk of impact.

RFI Item 124 - Describe and explain the trenching process for sections of the pipeline where surface water is present but vertically isolated from the groundwater table (below the trench excavation level) – for example, as indicated by the groundwater bore data presented in the EES for the Kalkallo Creek floodplain. What measures will be used to mitigate environmental risks in this situation?

- 3 It has been assumed that this RFI item relates to standing surface water entering the trench where there is no groundwater encountered, i.e. prevention of runoff to avoid surface water infiltration to groundwater.
- 4 The EES reports include an assessment of the risk of surface water entering trenches and then potentially the groundwater. These include:
 - Risk ID GW6 in the EES Technical Report C *Groundwater* identified that poor quality surface water runoff into trenches or bell holes could impact groundwater quality. Mitigation measures included minimising the duration that trench sections and bell holes are open and diverting surface water away from excavations.
- 5 The CEMP EMM-GW3 specifically implements the mitigation measures identified in the EES:

'Minimise the duration that trench sections and bell holes are open, and divert surface water runoff away from the excavations, to reduce the potential for poor quality runoff impacting groundwater.'
- 6 In addition, EMM-SW1 includes further measures to:
 - divert surface water runoff from external catchments via the installation of flow diversion measures and erosions and sediment controls; and
 - manage any dewatering of surface water run-off and rainfall that has collected in trenches, including testing and disposal requirements.
- 7 Non contaminated surface water run-off into open trenches would be managed in accordance with EPA Publication 1834 Civil Construction, building and demolition guide (November 2020). Potentially contaminated trench water is to be assessed and managed in accordance with NEPM ASC, NEMP v2.0, EPA Publication 1828.2 and other EPA guidance as appropriate.
- 8 Specifically in regards to the Kalkallo Creek floodplain (Retarding Basin), EMM-SW4 requires trenched construction to be carried out during the summer and autumn months (i.e. from December through to May), if practicable, when conditions are driest and it is least likely that standing surface water will be present.