PART B – AEIS

9. SENSITIVE ENVIRONMENTAL AREAS

Issues raised in relation to remnant vegetation have been addressed in **Chapter 10**, issues related to water quality are addressed in **Chapter 16** while Boggomoss Snail issues are addressed in **Chapter 28**.

9.1. Wetlands

9.1.1. Water storage area

A number of submissions requested assessment of potential impacts on wetlands such as Lake Murphy and the "nationally listed Taroom wetlands".

Wetlands of national significance were discussed in Section 9.3.3 of the EIS. SunWater cannot find any reference to "Taroom wetlands" within the Directory of Important Wetlands in Australia, however notes that "Palm Tree Creek and Robinson Creek" is listed in the Directory. The Palm Tree Creek and Robinson Creek wetland commences at the junction of the Leichhardt Highway and Fitzroy Development Road and runs upstream of this point along both creeks and includes Lake Murphy. Lake Murphy is a Conservation Park managed by National Parks and Wildlife Service (NPWS) approximately 30 km north-west of Taroom and is fed by overflows from Robinson Creek. The wetland including Lake Murphy was depicted on Figure 7-9 and Figure 9-6 of the EIS along with other protected areas in the vicinity of the Project.

The lower end of Palm Tree Creek would be inundated by the water storage area but the full supply level (FSL) is over 3 km below the wetland area of the creek (EIS Figure 2-14) and there is no measurable change in the 1 in 100 year flood extent in this area (EIS Figure 2-13). Similarly, Appendix 15-H of the EIS predicted no or negligible change in the groundwater water level elevations in this area. As such, SunWater does not foresee any change in the ecological function of the wetland.

One submission, using Version 3 of Queensland Wetlands (DERM, 2012) identified 10 wetlands as either inundated or partially inundated by the water storage area. A review of Version 3 shows the proposed water storage area as containing various types of wetlands including riverine (Dawson River), lacustrine (Glebe Weir pool), springs and palustrine, as well as areas of mixed remnant ecosystems which may contain wetlands. The EIS reported investigations of all such areas except five mapped palustrine wetlands. These wetlands are still mapped as palustrine wetlands in Version 4 of Queensland Wetlands. Detailed assessment of the five remaining wetlands is provided in **Appendix B9**. A review of the DNRM wetland (Queensland Wetland Springs QGIS 2011) dataset by SunWater identified that five of the 10 wetlands identified by the submitter were outside the water storage area.

Three of the five wetlands assessed were ranked as "poor" with respect to their aquatic life rating because they were farm dams or occasionally inundated grazing paddocks and showed significant disturbance. One site on "The Bend" was a natural and possibly permanent wetland ranked as in "good" condition though it did not support aquatic vegetation and was impacted by grazing and feral pigs. The second wetland assessed to be in "good" condition on "Bookabie" is a naturally occurring wetland adjacent to the Dawson River, with mature *Eucalyptus* sp. surrounding the wetland, however it could not be inspected due to access restrictions. None of the impacted wetlands are identified in any national wetland listing or database (e.g. Directly of Important Wetlands or Ramsar Wetlands of International Importance) but they are recognised as a "wetland" in

Queensland and as a remnant Regional Ecosystem (RE 11.3.27 is a Least Concern Regional Ecosystem). As these wetlands will be inundated at full supply level impact cannot be avoided and their loss will be considered under the Project offset strategy (**Appendix B1-B**).

The water storage area is relatively depauperate of palustrine and riverine wetlands when compared to areas upstream either on the Dawson River or on tributaries to the north-west (Palm Tree and Robinson Creek, Lake Murphy) or to the south-west (Juandah and Bungaban creeks). Mapped palustrine wetlands on Cockatoo Creek also commence upstream of the proposed water storage area. While many areas on tributaries upstream of the water storage are mapped as riverine wetlands, only the Dawson River itself, Cockatoo Creek and Palm Tree Creek are mapped as of this type within the water storage. As such, impacts to palustrine wetlands or riverine wetlands on tributaries are considered minimal.

The water storage area will provide a significant wetland with a variety of habitat types at full supply level as discussed in Sections 11.2.1.3 (terrestrial fauna), 12.2.1.2 (aquatic flora) and 13.2.1.2 (aquatic fauna) of the EIS. These will vary as the water level in storage rises and falls and provide seasonally variable habitat for flora and resources for fauna. The storage will always hold some water so will provide a permanent refuge for aquatic species or species reliant on freshwater wetlands.

Only two small natural palustrine wetlands with “good” values will be impacted by the Project and there remain many such habitats surrounding the water storage. The water storage itself will provide much larger areas of replacement habitat that will suit much of the impacted biota and there are no threatened species known to use the impacted wetlands.

A submitter requested identification of any high ecological value aquatic ecosystems which may be affected by the construction and/or operation of the dam from the perspective of water flow and water quality.

Mapping of the Upper Dawson River Sub-basin supporting water quality objectives for the Fitzroy Basin in Schedule 1 of the EPP (Water) shows no High Ecological Value (HEV) wetlands within, near or potentially affected by the water storage area or pipeline. The nearest HEV wetland downstream is HEVm2173 which is Precipice National Park. Precipice National Park abuts the western bank of the Dawson River for a short distance within Nathan Gorge, downstream of the dam wall and runs adjacent to the area inundated by Gyranda Weir. Precipice National Park extends north from the Dawson River and is elevated and rugged as it is part of the Gilbert Range within the Great Dividing Range. Therefore, no impact on the terrestrial environment would be expected. Precipice Creek is the major drainage system within the National Park and it flows into the Gyranda Weir pool. Flow in the creek will not be impacted by the Project and as the operations of Gyranda Weir are not expected to change and therefore, no change to riparian characteristics would be expected.

9.1.2. Pipeline

With respect to wetlands along the pipeline, several of the creek crossings along Nathan Road and near Wandoan intersect areas mapped as riverine wetland and/or regional ecosystems that may include wetland mosaics. These were mapped and reported in Appendix 10A, Figure 36 of the EIS. Only one natural palustrine wetland is close to the route and it is near Chinchilla on Charleys Creek. The natural wetland is an ox bow lake and there are several such features in this area. It will be crossed and rehabilitated as described in the EIS. The original route between Brigalow and Warra would have crossed another wetland on Jingi Jingi Creek however

the route is now on the other side of the highway so avoids this wetland. Some man-made farm dams are close to the alignment but can be avoided.

9.2. Springs

A submitter requested additional information on the proximity of springs to the pipeline route. The nearest springs, which are recharge springs and not part of the EPBC listed community (Fensham *et al* 2012) are in Price Creek and Nathan Gorge downstream of the dam wall site. Figure 10-11 of the EIS shows the springs relative to the pipeline in plan view while Figure 2-17 of EIS displays the pipeline crossing Price Creek upstream of the nearest springs and following a ridge line to the west of the creek to meet the pump station at the dam wall. The springs are near the base of the creek so are separated by substantial vertical distance, as is visible in Figure 2-17 which includes contour lines but this is not apparent in plans without marked elevations (Figure 10-11). The pipeline is a relatively shallow 2.7m excavation so will not affect groundwater going to the springs. As the location of the pipeline is upstream of all springs it will not interfere with drainage from the springs. Given the vertical and horizontal distance of works from the springs and the EMP (Appendix B29) elements to be employed, the potential for direct or indirect impact on the springs is considered minimal.

9.3. Mt Rose Nature Refuge

One submission requested additional detail in relation to the projected impacts on the Mount Rose Nature Refuge. The refuge is Lot 18 on LE279 and has an area of 105 ha, of which approximately 0.7 ha would be inundated by the dam at FSL. The Conservation Agreement for the reserve nominates a mound spring and RE11.3.22 as the protected significant values. No mound spring and no RE11.3.22 will be impacted as a result of the Project. As such SunWater suggests that the management intent of the reserve will not be affected. The impact cannot be avoided so the area has been included within the project offset strategy (Appendix B1-B).