

PEMBROKE

Olive Downs Coking Coal Project

Additional Information to the
Environmental Impact Statement

Section 8

**Matters of National
Environmental Significance
– Wetlands**

8 MNES – WETLANDS

1. ***Provide an assessment of the Project's potential impacts to wetlands as a MNES, including measures to avoid, mitigate and or manage impacts to wetlands. This should consider wetlands located within and outside of the Project footprint.***

A detailed assessment of potential impacts on wetlands located both inside and outside the Project area, in consideration of Matters of National Environmental Significance (MNES), is provided in the attached Appendix E.

Impacts to a water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E) is considered to be relevant to all water sources (groundwater and surface water) in relation to the Mine Site and Access Road. The other components of the Project (i.e. the rail spur, water pipeline and ETL) were not determined to be a Controlled Action with respect to a water resource, and as such, it is concluded that the impacts to watercourses and wetlands associated with these components of the Project would not result in a significant impact to any water resources (including wetlands).

The Project would result in the removal of 120 ha of ephemeral palustrine and lacustrine wetlands, all of which could provide potential habitat for the Australian Painted Snipe. As such, Pembroke proposes to offset the removal of these wetlands through the implementation of an offset for the Australian Painted Snipe in accordance with the *EPBC Act Environmental Offsets Policy* (DSEWPC, 2012a) and *EPBC Act Offsets Assessment Guide* (DSEWPC, 2012b). The Australian Painted Snipe potential habitat is conservatively considered to include all wetlands in the Project area.

The Stage 1 Impact Area would result in the clearance of approximately 21 ha of ephemeral wetlands which could provide potential habitat for the Australian Painted Snipe, comprising lacustrine and palustrine wetlands. The Stage 1 Offset Area provides for the conservation and enhancement of approximately 86 ha of wetland habitat for the Australian Painted Snipe, four times the area of wetlands to be removed.

Further to the above, the Mine Site and Access Road is not expected to result in a significant impact to any water resources downstream of the Project area given:

- no watercourses are proposed to be removed by the Project (Section 6.2);
- no significant impacts to potential GDEs are predicted as a result on groundwater drawdown or contamination (Section 5);
- the final landform is unlikely to lead to an increase in sediment transport downstream of the Project that would result in adverse impacts on water resources (Section 6.3);
- no measurable impacts on water resources are likely to occur from discharge of mine-affected waters (Section 6.3);
- the Project is unlikely to result in leaks/spills that would eventuate in serious environmental harm to water resources (Section 6.3); and
- the Project would not result in a significant reduction in the catchments for the water resources downstream (Section 6.4).

2. Specifically provide more detail on how siting of the conveyor and haul road has avoided impacts on the wetland protection areas.

Pembroke will provide a biodiversity offset for the predicted impacts for all components of the Project. This will include a biodiversity offset for predicted impacts from the proposed construction of the overland conveyor and access road on wetlands.

A transport options study was undertaken at the pre-feasibility stage for moving raw coal from the Willunga domain to the Olive Downs South domain CPP site. For this study, the following transport scenarios were considered:

- high speed overland conveyor
- slurry pipeline; and
- heavy vehicle road haulage of ROM coal.

The study showed that the conveyor solution was preferred because:

- it has a lower operating cost per tonne than a slurry pipeline or road haulage of ROM coal;
- it has a smaller disturbance footprint than a slurry pipeline or a heavy vehicle haul road;
- slurry pipelines have high water and energy requirements; and
- a conveyor produces less noise and dust impacts compared to road haulage.

Subsequent to the pre-feasibility study a further more detailed conveyor options study was undertaken for the Project feasibility study. Figure 8-1 below shows alignment options considered for the overland conveyor during the feasibility stage. The preferred alignment is shown in green, with other alternatives shown in red and blue.

The key design constraints for the conveyor corridor are:

- the location of the ROM facility at the Willunga domain;
- Pembroke's mining tenement boundaries (i.e. the conveyor is confined to the areas within Pembroke's MLA areas);
- extent of flood prone land;
- location of the proposed open cut pits;
- requirement to cross the Isaac River in a perpendicular direction; and
- potential obstruction to river flow due to infrastructure.

An access road is also required to be constructed along the conveyor alignment for the internal transfer of equipment and personnel between the two mining domains and to provide access to the conveyor for servicing/maintenance.

Alignment options within the Central Zone shown on Figure 8-1 were also not considered to be feasible due to:

- a longer length of conveyor traversing land subject to inundation, compared to the preferred alignment, which would increase construction costs to elevate the conveyor; and
- Isaac River crossing locations not being as suitable as the preferred alignment crossing locations, requiring a higher construction cost and more disturbance of the riparian zone.

The Southern Option alignment shown on Figure 8-1 was not preferred due to:

- the alignment having to cross the longest length of land subject to inundation, resulting in the highest construction cost of all options; and
- requirements for construction of costly transfer stations which would have also increased the disturbance footprint of the infrastructure.

The alignment presented in the draft EIS (shown as the green alignment on Figure 8-1) was selected as the preferred option as it:

- maintains a more direct route than the other options which avoids the requirement for transfer stations;
- minimises the length of the conveyor and access road within land subject to inundation allowing a longer portion of the conveyor to be constructed closer to ground level and minimising the exposure of the conveyor to flood flows; and
- crosses the Isaac River at a perpendicular angle, resulting in a shorter span distance and therefore less disturbance to the riparian vegetation and river banks.

Based on the above, construction and operation of the conveyor and access road along the preferred alignment is estimated to cost approximately \$35M less than the Southern Option alternative alignment, and approximately \$29M less than the Central Zone alternative alignments.

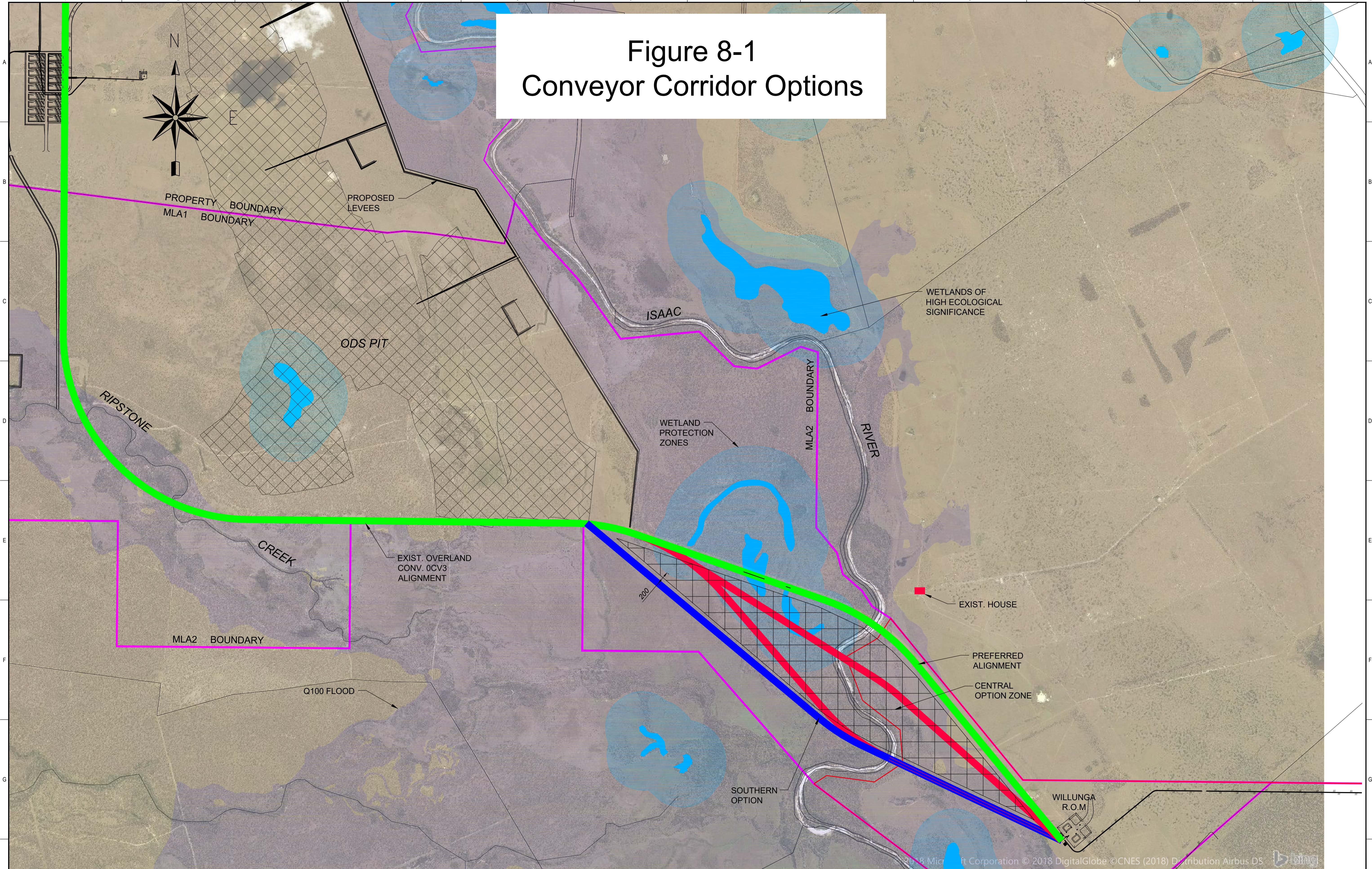
Given the significant cost difference Pembroke considers the conveyor and access road alignment presented in the draft EIS to be the preferred option.

To minimise impacts of the conveyor on wetland areas, Pembroke has refined the design to include longer conveyor spans through the wetlands thereby reducing the required number of supporting trestles, hence reducing the area of disturbance in the wetlands.

In addition to the design refinements to minimise direct impacts to wetlands, Pembroke has included additional commitments to conduct ongoing monitoring of the ecological characteristics of these wetlands over the life of the Project (i.e. additional monitoring to what was committed to in the draft EIS). The ongoing monitoring will be used to validate the predicted impacts presented in the EIS, and identify whether any measures (such as habitat repair works, revegetation) need to be implemented to minimise any observed impacts. A detailed description of this monitoring program is provided in the *Assessment of Potential Impacts to GDEs and Wetlands* that is provided in Appendix E of this document.

Figure 8-1 Conveyor Corridor Options

84-6-SK058



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