



Appendix L  
Land



## EIS Appendix L

The respondent comments provided in this section have been collated from all stakeholder submission comments relating to EIS Appendix L Land. Please refer to **Attachment A** for copies of all submissions received.

### Appendix L1 Land – CSG field

#### Respondent Comment

*Department of Environment and Resource Management state the location of storage dams will require careful consideration. Ponds should not be located on alluvia or perched on a toe slope above alluvia where there would be an increased risk of leaking.*

#### Santos Response

Storage dams will be located and constructed in such a way that they are impervious and separated from the surrounding landscape. Construction technique is described in **Attachment D2** (see section 8.10.2). It includes a liner system, sand filtered embankments, and erosion control, appropriate sizing to accommodate rainfall and controls on water releases.

Santos has adopted a number of safety features into the design criteria for new water storage structures. The safety features incorporated into the dam design include:

- A preliminary geotechnical investigation of the proposed siting to verify that the soil engineering properties are appropriate;
- A dual liner system comprising high-density polyethylene (HPDE) over a 300 mm compacted clay liner;
- Engineered sand filter within the embankment to limit the potential for internal erosion and piping due to seepage through the embankment;
- Erosion control on the embankments through the use of seeded topsoil covered by an erosion control blanket;
- The dam is sized to safely accommodate the wet season rainfall within its footprint, while maintaining sufficient free board to reduce the changes of overtopping; and
- A spillway designed to accommodate a controlled release of stored water in the event of a catastrophic (1 in 2000 year) flood event, such that the overall integrity of the dam is not compromised.

In addition, water storage ponds constructed to contain associated water, amended water, desalinated water and brine will be designed and managed to meet the following key performance indicators.

Seepage to the shallow groundwater system must be restricted such that:

- With respect to water quality:
  - There is no statistically significant change to mid to long-term water table level;
  - The underlying water table exhibits no increase in salinity greater than 10 % above seasonal norms;
  - The water quality at the water table remains suitable for all beneficial uses to which it was previously suited (e.g. stock water, irrigation of crops); and
  - There is no measurable or predicted impact on local surface water quality.
- With respect to soils and land use:
  - The projected depth of increase in soil salinity during operation of the pond must not be greater than 1 m. Failure to meet this target would result in the affected land being placed on the contaminated lands register; and

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- The land occupied by the water management pond must be returned to a state that it supports the same use at the completion of its use and subsequent rehabilitation.
- With respect to monitoring:
  - All water management ponds shall have water table and soil moisture monitoring installed at locations suitable to enable characterisation of the water table and soil water quality prior to and post pond remediation.

### Appendix L4 Land – Acid Sulfate Soils

#### Appendix A

##### Respondent Comment

*Department of Environment and Resource Management state that borehole logs of onshore cores # 41 to # 54 are missing. These logs are required to assess the sediment characteristics at these locations for suitability for fill placement and likely acid sulfate soil disturbance.*

##### Santos Response

Santos has provided these borehole logs to DERM as requested.