



APPENDIX H7.4

Hydrodynamic modelling animations

H7.4 HYDRODYNAMIC MODELLING ANIMATIONS

As discussed in Section 16.3.2 of the Draft EIS, there is a natural and annual flushing of salt from the Spencer Gulf and it is this mechanism that maintains the salt balance in the Gulf. During summer, evaporation results in the establishment of a strong salinity gradient along Spencer Gulf. In early winter, thermohaline (density) currents created by the stratification of gulf waters result in the flow of natural 'slugs' of hypersaline seawater along the seafloor towards the mouth of the gulf, thus flushing salt from the gulf and maintaining the salt balance.

The following links to animations available in the electronic version of the Supplementary EIS show the saline plumes associated with the discharge of return water off Point Lowly in the context of the natural saline plumes in Spencer Gulf.

The animations were produced by extracting a two month series of salinities from each modelled seafloor cell during hydrodynamic simulations of Spencer Gulf using the ELCOM program. The baseline animation shows the natural saline plumes that traverse Upper Spencer; the desalination animation shows the return water plume in the context of the natural saline plumes in Upper Spencer Gulf.

The animations show that the saline plumes associated with the discharge of return water off Point Lowly are insignificant in the context of the natural saline plumes that regularly traverse Upper Spencer Gulf.

Animations:

[Appendix H7.4a_Saline Plume \(baseline\).mp4](#)

[Appendix H7.4b_Saline Plume \(with discharge\).mp4](#)