JANGARDUP MINERAL SANDS MINE — ACID SULPHATE GROUNDWATER PLUME

1785. Hon Diane Evers to the Minister for Environment:

I refer to the former Jangardup mineral sands mine, and I ask:

(a) (a) how extensive is the acid sulphate groundwater plume in and around the former site;

(b) (b) what is the maximum level of sulphate (S04) that has been recorded in the groundwater plume;

(c) (c) in what direction is the acid sulphate plume moving and at what speed;

(d) (d) when is the acid sulphate plume expected to reach Lake Quitjup;

(e) (e) what is the conservation status of Lake Quitjup; and

(f) (f) what measures are being taken to protect Lake Quitjup from the acid sulphate groundwater plume?

Hon Stephen Dawson replied:

(a) The plume lies beneath the southern portion of the mine footprint of the former Jangardup Mineral Sands Mine and extends across an area of approximately 3 to 4 hectares. Elevated sulfate and acidity are present only within the superficial aquifer and do not extend to the underlying Yaragadee aquifer. The lateral extent of the plume in the direction of Lake Quitjup has not been precisely determined, but a bore located approximately 500 metres down-gradient of the mine footprint remained unaffected in December 2017 (the latest groundwater sampling results reported in Cristal Mining Australia Limited's 2017–18 Annual Environmental Report). Lake Quitjup is located 3.2 kilometres to the south-west and down-gradient of the mined area.

(b) The highest concentration of sulfate measured in the plume was 770 milligrams per litre and was measured in December 2017.

(c) Groundwater in the superficial aquifer flows in a south-westerly direction. With the data currently available, the rate of movement of the plume cannot be precisely established. However, groundwater monitoring over the period 2015 to 2017 appears to indicate a very slow rate of migration.

(d) The available data indicate that the plume will not reach Lake Quitjup, as dilution and dispersion are likely to reduce sulfate concentrations to background levels within a relatively short distance of the mined area.

(e) Lake Quitjup is located in D'Entrecasteaux National Park and is part of the Gingilup–Jasper wetland system that is listed as a wetland of national significance under the Directory of Important Wetlands in Australia (DIWA –WA105).

(f) Groundwater monitoring bores are installed immediately down-gradient of the plume. In accordance with the conditions of Ministerial Statement 508, Cristal Mining Australia Ltd carries out biannual groundwater monitoring at the rehabilitated mine site and reports results to the Department of Water and Environmental Regulation in its Annual Environmental Report. Should the results indicate any increased risk to Lake Quitjup, the Department may require further action to be taken under the provisions of the *Environmental Protection Act 1986*, and/or the *Contaminated Sites Act 2003*. Cristal Mining's next (2018–19) Annual Environmental Report is due by 1 April 2019.