FLYING FOX NICKEL MINE

5610. Hon Giz Watson to the Parliamentary Secretary representing the Minister for the Environment

I refer to the Western Areas NL, Flying Fox Nickel Mine located south of Southern Cross along with the Department of Environment and Conservation (DEC) Licence and Environmental Assessment Report dated 11 October 2007; a media release from May 2005 by the Cooperative Research Centre for Landscape Environments and Mineral Exploration titled 'Gumtrees and Mulga: Signposts to Minerals'; and a 2006 paper titled, 'Advances in Regolith research with respect to locating mineralisation' produced by R.R Anand from CSIRO Exploration and Mining; and I ask -

(1) Is it correct that the 2006 paper titled 'Advances in Regolith research with respect to locating mineralisation', produced by R.R Anand from CSIRO Exploration and Mining, in part states 'Plants have evolved to mitigate the stress caused by the dry climate and nutrient- poor soils that prevail over much of Australia. One adaptation is dimorphic roots systems with shallow lateral and deep tap (or sinker) roots. The latter may reach depths of 40metres or more and are able to access water and nutrients deep in the regolith, especially during dry periods. Uptake of trace elements by plants is facilitated by production of organic ligands by plant roots. Australian native plants produce cyanide, oxalate and citrate and it is likely that these and other compounds dissolve trace elements'?

(2) If no to (1), can the Minister quote the specific text of the 2006 paper titled 'Advances in Regolith research with respect to locating mineralisation' produced by R.R Anand from CSIRO Exploration and Mining?

(3) Will the Minister table a copy of the 2006 paper titled 'Advances in Regolith research with respect to locating mineralisation' produced by R.R Anand from CSIRO Exploration and Mining?

(4) Are the DEC and the Minister aware of the media release from May 2005 by the Cooperative Research Centre for Landscape Environments and Mineral Exploration titled 'Gumtrees and Mulga: Signposts to Minerals', which in part states, 'Now CRC LEME teams led by Dr Ravi Anand of CSIRO and Dr Steve Hill of Adelaide University have found that native vegetation, which has very deep roots designed to reach water far underground, can do some of the prospecting for us . . . Dissolved metals enter the roots, rise through vascular tissues, enter the fruits, twigs, bark and leaves, and then build up in specific products in the tree. In several areas north of Kalgoorlie, Dr Anand has detected very high levels of zinc in products of the mulga tree'?

(5) If yes to (4), how did the DEC and the Minister become aware of this media release from May 2005?

(6) If no to (4), will the DEC and the Minister make themselves fully aware of the media release from May 2005 and all of the research that has been undertaken?

(7) Can the Minister explain why the DEC referred to and set a trigger level of 10 metres below ground level to prevent hypersaline water impacts on root systems of native vegetation at the Flying Fox Nickel Mine given that there are many technical research papers which show that root systems for native vegetation extend below 20 metres ground level and up to 40 metres below the surface?

(8) If no to (7), why not?

(9) Will the DEC urgently make an amendment to the Flying Fox Nickel Mine Licence and Environmental Assessment Report dated 11 October 2007 to set the trigger level of 20 metres below ground level to prevent hypersaline water impacts on root systems of the native vegetation in the area?

(10) If no to (9), why not?

Hon SALLY TALBOT replied:

(1) Yes.

(2) Not applicable.

(3) Yes. However, the paper is also available from the Cooperative Research Centre for Landscape Environments and Mineral Exploration at www.crcleme.org.au, or direct from http://crcleme.org.au/Research/RAnand%20AIGabstractApril2006.pdf. [See paper 3597.]

(4) Yes.

(5) The Department of Environment and Conservation sought a copy of this media release following receipt of this question on notice.

(6) Not applicable.

(7) Yes. Western Areas NL developed a dewatering operating strategy for their Forrestania operations. Within this strategy there is a range of measures to manage and mitigate the impacts of putting dewatering discharge back into the groundwater system. One of these strategies is to set water level triggers between 7m and 10m below ground level. The dewatering operating strategy outlines the basis for the setting of these triggers including, amongst other factors, surface drainage, root zone impacts, proximity of individual injection borefields to topographically low areas, existing groundwater levels and surface drainage features and the likely lead time required for groundwater level mounding to cease rising at the particular trigger location, after injection is ceased.

A range of other measures is also included in the strategy including vegetation monitoring when the water levels are less than 20m below ground level, water quality and water quantity measurements.

DEC considered that the overall dewatering operating strategy included reasonable and practicable measures to manage the risk of environmental harm or pollution.

It is important to note that the papers referred to are based on different plant species in different hydrogeological conditions. In particular it is noted that the paper is focused on vegetation that is reliant on potable to brackish groundwater whereas in the Flying Fox deposits the groundwater is saline in nature and doesn't support vegetation growth.

(8) Not applicable.

(9) No.

(10) The conditions set are considered to be reasonable and practicable to minimise the risk of environmental harm or pollution.