YM 2/11/17

ESTIMATES AND FINANCIAL OPERATIONS COMMITTEE

Department of Water and Environmental Regulation

Hon Dr Steve Thomas MLC asked:

1) I refer to the contamination of soils excavated from the Forrestfield Airport Link tunnelling project with per and poly fluoro alkyl substances (PFAS) and I ask:

   a) When was the Department first made aware of the contamination or potential contamination of soils excavated from the Forrestfield Airport Link tunnelling project by PFAS?

      Answer: The Public Transport Authority (PTA) provided a report to the former Department of Environment Regulation (DER) on 26 August 2015 which identified the presence of PFAS in groundwater beneath Commonwealth land within the Forrestfield Airport Link (FAL) project area.

   b) What assessments has the Department of Water and Environmental Regulation made of this soil contamination, and what are the concentrations of PFAS detected?

      Answer: Regarding assessments that have taken place, the Department of Water and Environmental Regulation (DWER) has reviewed investigation reports submitted by PTA, containing information on PFAS levels in soil and groundwater along the Forrestfield Airport Link tunnel alignment and at the soil stockpiling site at 777 Abernethy Road, Forrestfield. A Mandatory Auditor's Report addressing PFAS investigation reports and risk assessment was reviewed by DWER in May 2016.

      Prior to the commencement of construction, soil samples were collected at a range of depths from bores drilled at intervals along the FAL project alignment. However, not all samples were collected from areas of FAL-related excavation. PFAS compounds were detected at concentrations above the laboratory limit of reporting in 30 of 280 samples analysed. In the remaining 250 samples, no PFAS compounds were detected at a concentration above the laboratory limit of reporting.

      Regarding concentrations that have been found, there are over 3000 types of PFAS; the most commonly detected PFAS compound within the Forrestfield Airport Link project area is perfluorooctane sulfonate (PFOS). The highest concentration of PFOS was 0.006 milligrams per kilogram (mg/kg). PTA has informed DWER that PFOS was not detected above the laboratory limit of reporting (0.0005 mg/kg) in soils sampled from the tunnel horizon.

      In addition to testing the mass of PFOS in soil, the concentration of PFOS in soil leachate (a measure of risk to surface water or groundwater quality) was

measured in samples from across the project area. Concentrations ranged from below the laboratory detection limit of 0.002 micrograms per litre (µg/L) to a maximum of 0.287 µg/L, with an average value of 0.022 µg/L.

c) When did the Department notify the Shire of Kalamunda that the stockpiling of this soil involved contamination of PFAS?

Answer: The Shire of Kalamunda was notified the excavated material may contain PFAS on 6 June 2017, as part of DWER's response to the Shire's request for comment on PTA's development application.

d) What is the Ecological Investigation Level (EIL) of PFAS in soil and in water in Western Australia?

Answer: Ecological Investigation Levels (EIL) for PFAS in soil have not been set in Western Australia at this time.

Ecological assessment levels for two PFAS compounds, PFOS and perfluorooctanoic acid (PFOA), in freshwater ecosystems have been adopted from the draft Australian and New Zealand Water Quality Guidelines. These values, published in Table 4 of DWER's "Interim Guideline on the Assessment and Management of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)", are as follows:

Ecological – freshwater	**PFOS**	**PFOA**
High conservation value systems (99 per cent species protection)	0.00023 µg/L	19 µg/L
Slightly – moderately disturbed systems (95 per cent species protection)	0.13 µg/L	220 µg/L
Highly disturbed systems 90 per cent species protection 80 per cent species protection	 2.0 µg/L 31 µg/L	 632 µg/L 1,824 µg/L

e) What testing has the Department done for PFAS contamination of surface water and groundwater in the Belmont, Redcliffe and Forrestfield locations and what were the results?

Answer: The Department has not conducted any testing of soil, surface water or groundwater for PFAS at these locations.

f) Is the location of the Forrestfield Airport Link project being assessed or is it classified under the *Contaminated Sites Act 2003*?

Answer: State environmental laws, including the *Contaminated Sites Act 2003*, do not apply to Perth Airport land. Four locations within the project area (outside Perth Airport land) are currently classified or have been reported under the Act:

- A site comprising 17 parcels of publicly-owned land in Redcliffe, at the location of the future Belmont railway station, is classified as *possibly contaminated – investigation required.*

- The soil stockpile site at 777 Abernethy Road in Forrestfield is classified as *remediated for restricted use*, due to residual contaminants (asbestos containing materials in soil, and metals and nutrients in groundwater) from a former land use. The classification is unrelated to the Forrestfield Airport Link tunnel or PFAS.

- Publicly-owned land at the locations of the Bayswater tunnel "dive structure' and the future Forrestfield station has been reported under the Act; these two sites are awaiting classification.