

LEAK DETECTION (GROUNDWATER MONITORING)

Table 6: Checklist for groundwater monitoring wells

Groundwater monitoring components (section 20 of the UPSS Regulation)	What exactly? (Requirements of the UPSS Regulation or the UPSS Guidelines, where available)	Included (Y/N)	Adequate (Yes/No)	Comments and remedy (why 'no'? how is compliance reached?)
Installation of groundwater wells	<ul style="list-style-type: none"> • Are the monitoring wells designed/ installed by a duly qualified person, such as an environmental consultant and licensed driller? • Is the person responsible for the UPSS able to present well design documents upon request by Council officers? • Are there minimum of 3 groundwater wells installed on the site – one up-gradient and 2 down-gradient of the UPSS? • If a leak is detected in the UPSS, are the groundwater wells located and screened in such a way that the leak will be captured? • Is the monitoring well construction and design in accordance with industry standards and guidelines?¹⁰ • Is the monitoring well construction, location and designated numbering of groundwater wells included in FSOP? 			
Checking of wells	<ul style="list-style-type: none"> • Are the groundwater wells monitored every 6 months? • Are the bi-annual groundwater monitoring records/reports maintained and available upon request? • Are the monitoring wells monitored for the presence of hydrocarbons visually or by using an interface probe? A visual assessment procedure is detailed below. • Is the monitoring conducted by a duly qualified person and/or is a detailed written instruction on how to check the wells for contamination available onsite or in the FSOP? 			

¹⁰ https://www.industry.nsw.gov.au/_data/assets/pdf_file/0004/329971/minimum-construction-requirements-for-water-bores-fourth-edition.pdf

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Table 6 (Cont.): Checklist for groundwater monitoring wells

Groundwater monitoring components (section 20 of the UPSS Regulation)	What exactly? (Requirements of the UPSS Regulation or the UPSS Guidelines, where available)	Included (Y/N)	Adequate (Yes/No)	Comments and remedy (why 'no'? how is compliance reached?)
<p>Sampling of wells</p>	<ul style="list-style-type: none"> • If well checking indicated the presence of hydrocarbons in groundwater, is sampling and analysis of groundwater conducted by a duly qualified person? • Is sampling conducted when a new UPSS or well is installed and/or upon the discovery of a leak through loss monitoring? • Has a duly qualified person performed sampling? • Are the groundwater samples analysed in a laboratory accredited by NATA? • Is the person responsible for the UPSS onsite able to present sampling/analysis reports upon request by Council officers? <p>Note:</p> <ul style="list-style-type: none"> o The results must be included in the site's FSOP and kept for at least 7 years or be made available within 3 days of being requested by an authorised officer. o If the test results confirm that hydrocarbons are present in the groundwater monitoring well, the appropriate regulatory authority (that is, Council) must be advised using a leak notification form. o Groundwater parameters and criteria indicating the presence of contamination are listed below in Table 7. 			
<p>Groundwater testing records</p>	<p>Do the field sampling records include the following?</p> <ul style="list-style-type: none"> • the date and time of the sampling event. • any observations, such as evidence of an odour or sheen or an indication of the presence of free-phase hydrocarbons? • the name and signature of the person who conducted the tests. For electronically stored records, the name of the person who conducted the tests will suffice. 			

Note: UPSS Regulation = Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019; UPSS Guidelines = Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019; UPSS = underground petroleum storage system; FSOP = fuel system operation plan; NATA = National Association of Testing Authorities.