

Lots 1 and 2 Frenchman Bay Road
Frenchman Bay WA

23/11/2023

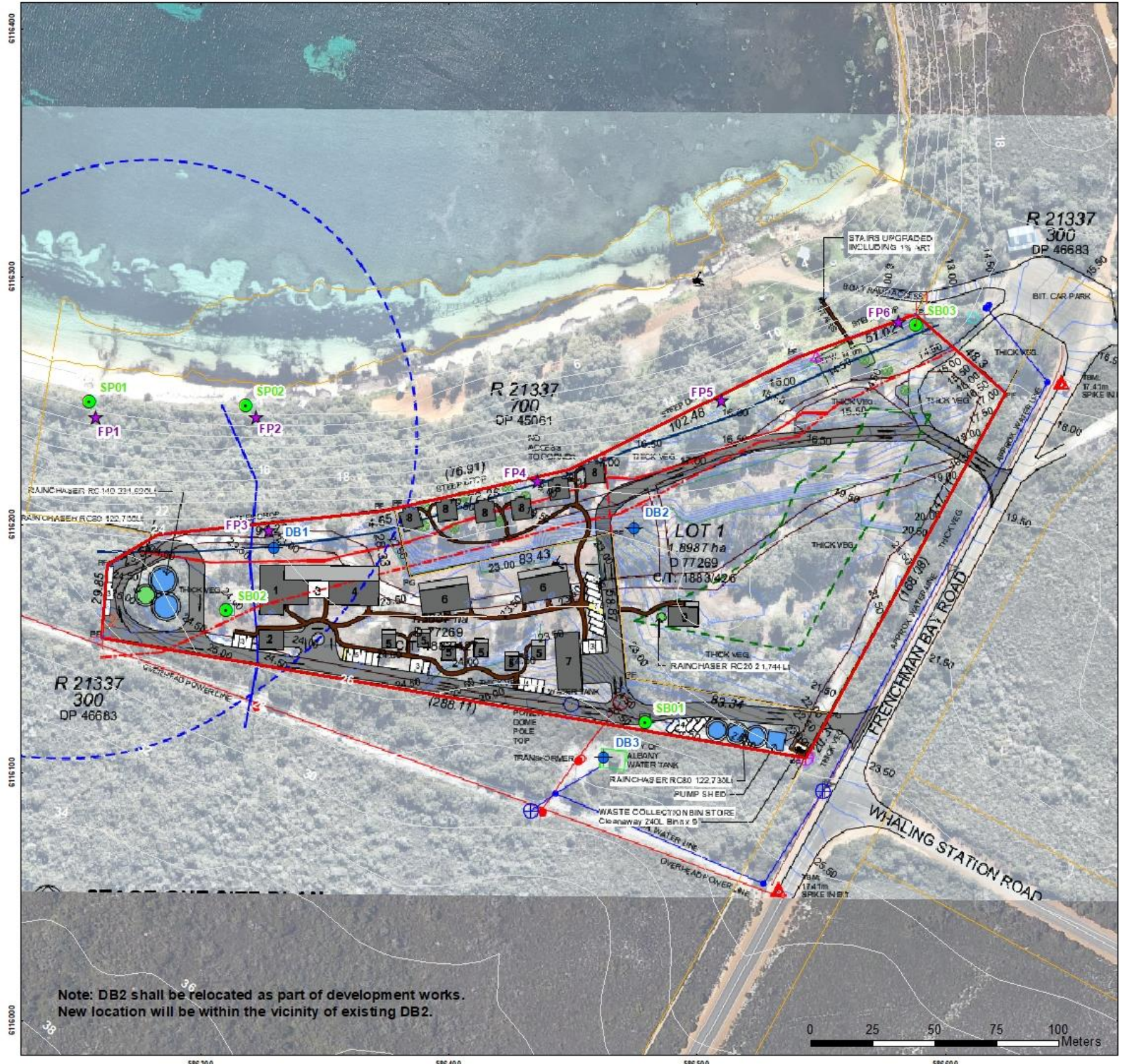


1. Monitoring Program

Groundwater and surface water monitoring at Lots 1 and 2 Frenchman Bay Road, Frenchman Bay WA shall be in accordance with Table 1. Water quality parameters shall be compared to ANZECC & ARMCANZ (2000) water quality trigger values for freshwater (95% level of protection) and water quality guidelines for freshwater lakes and reservoirs in South-west Australia.

Table 1: AMP Monitoring Program

Development Proposal	Monitoring Proposal	Monitoring Parameters	Approximate Timeframe
<p>Pre-development: Prior to Development Approval and construction of Stage 1 and Stage 2.</p>	<ul style="list-style-type: none"> • Conduct quarterly sampling of three deep bores (DB1, DB2 and DB3, as shown on Figure 1) for 1yr to establish baseline data. • Take fixed point photography (2 directions) at each location (FP1-FP6, as shown on Figure 1) biannually (April and October) to assess vegetation condition. • No pre-development monitoring of the springs or shallow bores proposed. Baseline data established in 2018/2019. 	<ul style="list-style-type: none"> • Vegetation condition (fixed point photography) • Water levels • In-situ: pH, EC, TDS & Dissolved Oxygen • Thermotolerant Coliforms & E. coli • Nutrient suite • Heavy metals 	<p>To be determined</p>
<p>Post-development: Following practical completion of both Stage 1 (the lodge) and Stage 2 (the retreat).</p>	<ul style="list-style-type: none"> • Quarterly monitoring of all monitoring sites for a period of 2 years (SP01, SP02, SB1 - SB3, DB1 - DB3, FP1 - FP6 as shown on Figure 1) 	<ul style="list-style-type: none"> • Vegetation condition (fixed point photography) • Water levels • In-situ: pH, EC, TDS & Dissolved Oxygen • Thermotolerant Coliforms & E. coli • Nutrient suite • Heavy metals 	<p>To be determined</p>
<p>Following 2 years of post-development monitoring a review of the monitoring program in consultation with DWER to occur.</p>			<p>To be determined</p>



Note: DB2 shall be relocated as part of development works.
New location will be within the vicinity of existing DB2.

Albany Office: 29 Hercules Crescent, Albany, WA 6330, (08) 9842 1575
 Denmark Office: 740 South Coast Highway, Denmark, WA 6333, (08) 9848 1309
 Esperance Office: 2A/113 Dempster Street, Esperance, WA 6450



Overview Map Scale 1:100,000

- Legend**
- Subject Site
 - + Deep monitoring Bore
 - Shallow groundwater bores and surface water sites
 - ★ Fixed Point Photography
 - Vancouver Spring setback
 - - - Vancouver Spring 100m area



Scale
1:1,500 @ A3
GDAMGA 94 Zone 50

Data Source
 Aerial Imagery: WA Now, Landgate Subscription Imagery
 Cadastre, Relief Contours and Roads: Landgate 2017
 IRIS Road Network, Main Roads Western Australia 2017
 Overview Map: World Topographic map service, ESRI 2012

CLIENT
 Frenchman Bay Albany Pty Ltd
 Lot 1 and 2 Frenchman Bay
 Frenchman Bay, WA 6330

Figure 1: AMP Monitoring Plan

	QA Check KK	Drawn by CC
STATUS FINAL	FILE MSC403	DATE 7/11/2022

2. Monitoring Response and Contingency Plan

The Monitoring Response and Contingency Plan has been determined to investigate the source or cause of elevated contaminants or significant changes in the surface water or groundwater regime and develop a set of actions to respond accordingly.

Trigger Level System

A trigger level system for water quality parameters and water levels shall be established to define environmental criteria that signal changes may be occurring outside of what is normal or at a point where remedial action is required to avoid environmental impacts. Trigger levels shall be determined using existing baseline data (2018-2019 data), future baseline data and be compared to relevant guidelines such as ANZECC & ARMCANZ (2000) Water quality Guidelines. Trigger levels will predominantly be determined based on a 10% exceedance from baseline data. Trigger levels for each parameter shall be determined prior to development approval.

A Trigger Exceedance Report (TER) shall be prepared when a trigger level is exceeded. The objective of the TER is to establish the cause of a trigger level exceedance and to recommend a program of action to end the exceedance.

A TER shall include:

- Verification of the exceedance. The verification process will depend on the type of exceedance. In the case of a water quality exceedance this would at least involve a re-analysis of the sample exceedance and a resampling at the relevant sampling location;
- Identify processes/activities on site that may have contributed to the exceedance. Confirm if there is a link between site activities and exceedance;
- Set out requirements for increased monitoring of the exceedance. Any additional monitoring required shall confirm the significance and duration of the exceedance;
- Set out ecological monitoring to detect effects of the exceedance, such as changes to vegetation health/condition, fauna activity/deaths and changes to wetland/spring structure;
- Update the report on a regular basis as more data becomes available;
- Recommend actions to end the trigger level exceedance, which could include:
 - Reassessment and reconstruction of the stormwater management system;
 - Reassessment and reconstruction of the onsite effluent disposal system; and
 - Reassessment of the land use, activities undertaken at the site.

Actions arising from the TER shall continue as long as the issue continues. The TER shall also include:

- A statement about potential effects on the receiving environment and the need for further investigation and assessment;
- Any proposed remediation works; and
- Management options to avoid future exceedances.