

Water Quality Monitoring Report October 2021

Newcastle Cruising Yacht Club

File No 0-950 Water Quality Monitoring

Prepared for Newcastle Cruising Yacht Club Limited
Suite 9
NCYC Commercial Centre
91 Hannell Street
Wickham 2293

By **PPI Services Pty. Limited**
ABN 47 003 693 123



Contact details:

Andrew Arnott
PPI Services Pty Ltd
PO Box 404
WALLSEND NSW 2287
Telephone: 02 4950 2023
Facsimile: 02 4950 2169
Email: andrew@ppiservices.com.au

Report Certification:

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Under the terms of its engagement, PPI Services Pty Ltd has examined the various environmental practices of project and has relied on information provided by the Client and the on-site observations of its personnel. The qualifications of personnel involved in the preparation of this Report have previously been supplied to the Client.

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The Assessment has been conducted in accordance with the best practices available at the time and considers the identified hazards determined. Should any further hazards be identified at a later date, it is suggested that the processes be re-examined, and this report updated.

I hereby certify that this report includes to findings and recommendations of the assessment process.

Andrew Arnott
PPI Services Pty Ltd

Date: 19 October 2021

Introduction

PPI Services were commissioned by Newcastle Cruising Yacht Club Limited to implement a Water Quality Monitoring Programme during construction and operational phases of the Newcastle Cruising Yacht Club Marina - Lot 103, Hannell Street, Wickham. The water quality-monitoring programme was designed to monitor and assess potential impacts of Marina construction and operation activities upon the quality of receiving harbour waters.

The assessment/ Site Licence (EPL 11396) was varied in accordance with the 'Draft Notice of Licence Variation Newcastle Cruising Yacht Club (NCYC) EPL 11396', dated 20th October 2014. The revised conditions involve a visual interface probe test for the presence of hydrocarbons at two existing groundwater wells (GW1 and GW4) every six months. Should positive results for the presence of hydrocarbons be obtained further laboratory analysis and testing will be required within 30 days of the initial discovery.

During 2013 the site replaced its aging multi-chamber petrol/diesel underground fuel storage tank with a single-chamber double skinned dedicated diesel underground fuel storage tank. As of the October 2014 period report, the depth to the fill level of the interstitial space of this underground fuel storage tank is reported.

Methodology

Groundwater sampling of GW1 and GW4 was carried out with an interface probe test of each well and confirmed with a visual and olfactory assessment of a water sample drawn from each well by means of a 1 litre disposable bailer.

Testing of the depth to fluid filling the underground fuel storage tank was measured from the top of the observation well. This is performed as a check to ensure the double walled tank has not developed a leak.

Sample Date 12 October 2021

Sample Locations as Per **Figure 1**

Results

Results for this sampling event are presented below:

GW1: Water at 1.97metres and well bottom at 4.16 metres
pH 7.3
Temperature 22.5°C
No hydrocarbon detected by interface probe
No visible hydrocarbon observed
No olfactory evidence of hydrocarbon

GW4: Water at 2.32 metres and well bottom at 3.40 metres
pH 6.9
Temperature 22.1°C
No hydrocarbon detected by interface probe
No visible hydrocarbon observed
No olfactory evidence of hydrocarbon

Depth to filler fluid in interstitial space: 0.28 metres

Discussion

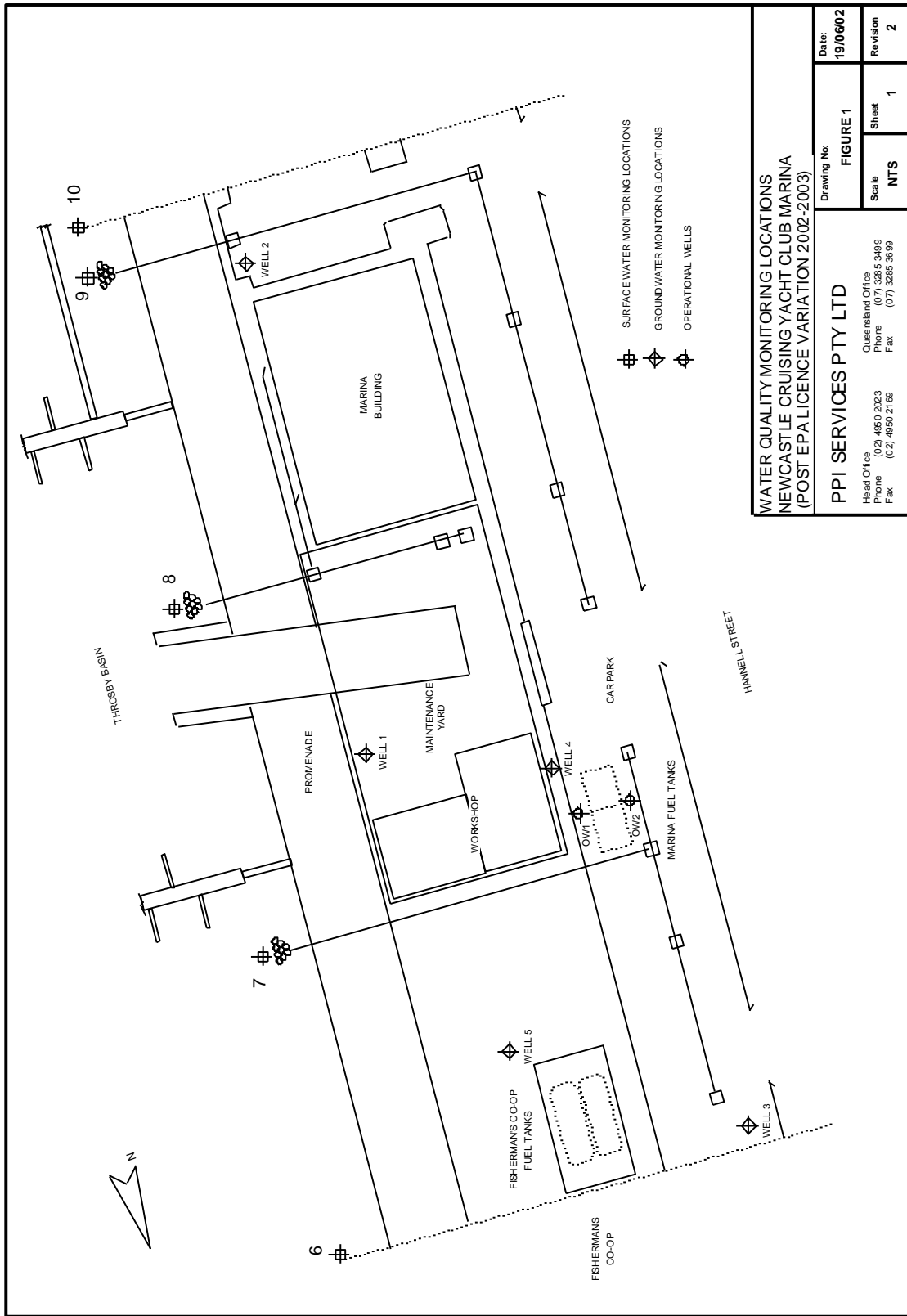
No hydrocarbons were detected in the wells sampled or in the underground storage tanks interstitial space.

The levels in GW1 were comparable to previous recordings. The well bottom in GW4 has remained stable and is comparable to previous recordings. The previous reduction in well depth would be most likely attributed with the disturbance of the surrounding soil when the old UPSS tank was removed. The changes in depth in GW4 will continue to be documented in future reports but it is expected that it will remain stable.

Tank Interstitial Space Discussion

The measurement of the reference water level in the underground fuel storage tanks interstitial space has increased considerably from the last reading of 0.91m measured from the surface to the level of the brine filling the interstitial space, a change of 630mm. The Two main modes of failure for a double skin tank are for the outer skin to fail, leaking brine out of the interstitial space and reducing the volume of liquid in the interstitial space. The failure of the internal layer of the tank will see brine leak into the fuel compartment of the tank fuel floating on the surface of the liquid in the interstitial space depending on the point at which the inner fuel compartment fails. The increase of the interstitial space fluid level cannot be explained by either failure mode. For this reason a 24hr static test (using an elevated stand pipe) of the interstitial space will be conducted to better inform future action.

The next monitoring event is scheduled for April 2022.



WATER QUALITY MONITORING LOCATIONS
 NEWCASTLE CRUISING YACHT CLUB MARINA
 (POST EPA LICENCE VARIATION 2002-2003)

Date: 19/06/02 Drawing No: FIGURE 1	Revision	2
	Sheet	1
Scale: NTS		
PPI SERVICES PTY LTD Queensland Office Phone (07) 556 53499 Fax (07) 3285 3689 Head Office Phone (02) 4650 2169 Fax (02) 4650 2169		