

6 June 2025

Selwyn Chang
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By email: selwyn@do.nz

Attn Selwyn

PC0003/23 Farm Rd. ADC Comments on DO Ltd Stormwater RFI Response

The following stormwater matters need to be resolved as part of the plan change application if the Applicant intends the stormwater discharges to be authorised by ADC's global stormwater consent CRC186263.

SMA Sizing Calculations

The stormwater management area (SMA) sizing calculations are based on 2% AEP with climate change (CC) allowance, but ADC require 1% AEP + CC.

1% AEP is an ADC requirement for land subject to plan change applications, as they are outside of existing residential zones where the infrastructure is generally not designed for development.

Please provide updated calculations.

Soakage to Ground

Soakage to ground is not suitable at this site because of the relationship between depth to suitable gravels and high groundwater, as discussed in the following section.

The depth to free draining gravel varies as shown of the following two nearby bore logs.

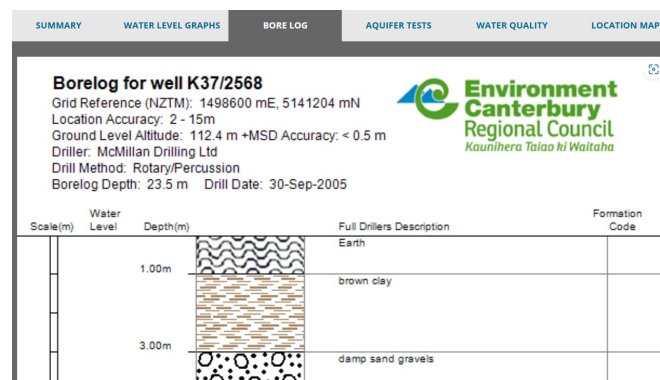


Figure 1- K37/2568: less than 200m north of the site. 3m to gravels

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SUMMARY	WATER LEVEL GRAPHS	BORE LOG	AQUIFER TESTS	WATER QUALITY
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Borelog for well BY21/0604

Grid Reference (NZTM): 1499151 mE, 5141126 mN
Location Accuracy: 10 - 50m
Ground Level Altitude: m +MSD Accuracy:
Driller: Smiths Welldrilling
Drill Method: Rotary/Percussion
Borelog Depth: 30.0 m Drill Date: 17-Feb-2025

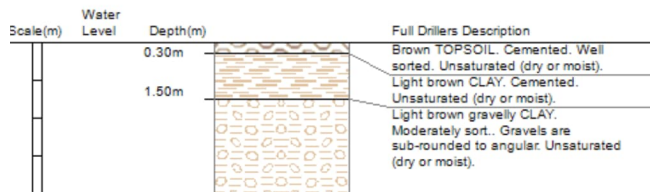


Figure 2- BY21/0604: less than 200m south of the site. 1.5m to gravels

We note your comment in the RFI response:

According to the Geotechnical Report, the proposed development site contains a thick clay layer (greater than 1.5 m in depth) across the site before reaching the underlying drainage layer. For the soakage system to function effectively, it must extend to suitable drainage layer in order to achieve the required design infiltration rate. However, the required soakage depth will result in a no separation from the 95th percentile high groundwater table.

The photos from DO's 3 April 2023 infiltration tests appear to show gravel deeper than 1.5m. However, it seems that a 1.5m depth to soakage has been assumed in the analysis.



Photo – Soakage Test Pit 1

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Based on bore logs, your comment and the test pitting/infiltration tests of 2023 we conclude that the free draining layer is between 1.5m and 3m below existing ground level across the site, rather than the assumed depth of 1.5m. This means that the excavation to free draining gravels for the infiltration systems will need to be deeper than 1.5m below existing ground to match.

We note that infiltration in dry conditions is average at best. This is likely to be worse or barely achievable in high groundwater conditions.

	Western Soakage Basin	Eastern Soakage Basin
Infiltration Test Pit Number	STP2	STP4
Test Infiltration Rate	420 mm/hr	1200 mm/hr
Factor of Safety	3	4
Design Infiltration Rate	140 mm/hr	300 mm/hr

Groundwater (GW)

ADC will not allow the base of either pond to intercept GW, no matter how infrequently it occurs, as that would require a 'groundwater take'. If this is required, you would need approval from Ecan for both the infiltration of stormwater to GW and a GW take. In the case of stormwater discharge, the ADC global stormwater consent would not be available to authorise stormwater from this site.

We accept that well K37/0398 shows a good water level correlation between the standpipe measurements. Your analysis shows a 95% confidence for a water level of 1.53m below ground level (bgl). However, Table 11 and the water level data from K37/0398 shows that there were 15 occasions out of 315 when the GW was shallower than 1.53m bgl. As above, we cannot allow this to occur unless you have approval from Ecan. Even then, ADC would be reluctant to accept the SMAs as Council asset because of ongoing performance issues.

The Ecan Land and Water Regional Plan rules related to discharge to land specify a separation of 1m from the seasonal high groundwater level. ADC sometimes allows global consent users to reduce the separation between the highest recorded ground level. In this case there is no separation between the highest recorded GW level.

Please either update your calculations or get authorisation from Ecan for stormwater discharge from this site.

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Please contact me with questions.

Ashburton District Council



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