

From: [Peter Christensen](#)
To: [Saskia Wilson](#)
Subject: RE: SMP review, 382 Mill Road Ohoka
Date: Wednesday, 24 November 2021 10:02:26 AM

Hi Saskia

As requested, below are the s92 questions. There are quite a few of them and I am happy to discuss with the applicant if required. Please call if you have any questions.

Quantity

1. Please provide details of the assumptions made for the calculation of the increased runoff, and a summary of the pre- and post-development catchment characteristics (percent impervious cover, assumed CN number) and modelled discharge rates.
2. Please provide reasons for why only the 2% AEP 24 hr storm event is the critical design event, and provide commentary or calculations to demonstrate no increase in peak flow rates for other events.
3. Please provide commentary on how the potential effects of the increase in volume discharged on downstream will be mitigated, and whether the selected detention duration of 48 hours matches the critical duration of downstream ponding areas (if any). In the design memo (p10) the drain down time is stated as being 68 hours – is this a typo? If not please clarify the design detention duration used to manage downstream effects.
4. Groundwater within the basin has potential to reduce the volume stored. The Beca report states that the estimated average discharge rate of 5L/s was provided by WDC. Please provide sufficient information to demonstrate that the orifice sizing is sufficient to manage groundwater such that the assumed storage volume will be available outside of rainfall events.

Quality

1. Water temperature – please confirm the sediment forebay depth (error on detail H invert on sheet 07?) and provide commentary on whether groundwater flow at its lowest point will be sufficient to prevent water at high temperature being discharged into the drain.
2. Use of H5 timber in contact with water – Have the effects of the H5 use been considered and have alternatives to this method of separating the channels been considered?
3. In order to assess water quality effects, the likely concentrations of the discharge need to be estimated and compared against the relevant receiving environment standards. The annual loadings provided do not allow this to be readily estimated. In addition, the assessment (p60 of the application) refers to the removal efficiencies of a soakage basin which is not appropriate.
4. The application assumes that the removal rates will be at the higher end of the efficiency range. This is unlikely, and they are more likely to be at the lower end of the range for a dry detention basin given the low depth of storage. However, the site would likely have contaminants at the lower end of the range for urban development given the low density which could be taken into consideration.
5. The application describes the downstream basin as a wetland. However, given that there is no permanent water depth in the basin it is not considered a stormwater treatment wetland.
6. Please provide the calculations to determine the first flush volume.
7. Please state what factor has been used to allow for vegetation growth within the basin

(vegetated systems typically assume that 25% of the volume is taken up by vegetation)

General

1. Fish passage – as the drain is normally dry, will the sump upstream of the ROW orifice provide a potential trap to fish, and if so, would it be better for this not to have a sump?
2. Fish passage – is there a clear path for fish that enter the basins to exit to prevent strandings, e.g. is the 100mm outlet orifice sufficient?
3. For groundwater management it is recommended that a smaller defined low flow channel is considered so that there is greater depth at low flows and it is less likely to heat up. The current swales appear to have a wide flat base which will be difficult to maintain unless planted with wetland vegetation, which is not assumed in the flow/volume calculations.

Regards

Peter

From: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>

Sent: Tuesday, 23 November 2021 10:58 am

To: Peter Christensen <peter.christensen@stormenvironmental.co.nz>

Subject: RE: SMP review, 382 Mill Road Ohoka

Hi Peter,

Sorry I missed your call, I was just in a meeting. Yes that would be great if they could be framed up as a s92 request.

Thanks

Saskia

From: Peter Christensen <peter.christensen@stormenvironmental.co.nz>

Sent: Tuesday, 23 November 2021 10:12 am

To: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>

Subject: RE: SMP review, 382 Mill Road Ohoka

Hi Saskia

I've had a look through Appendix B, and while it does answer some questions I still can't find the information that:

1. Outlines the assumptions used to determine the required detention volume
2. Calculates the estimated contaminant concentrations at the end of discharge (the information provided in the AEE is not sufficient, nor are the assumptions correct).

There are a few other smaller questions that I have as well, but the above outstanding items don't allow for an assessment of quantity or quality effects.

Would you like me to frame these up as a s92 request? I'm not sure what the timeframes are currently and when you need these by. I probably can't get these to you until tomorrow morning now, but I may have some time late this afternoon to put them together if needed.

Kind regards
Peter

Peter Christensen

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e: peter.christensen@stormenvironmental.co.nz

From: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Sent: Monday, 22 November 2021 3:28 pm
To: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Great, thanks.

Saskia

From: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Sent: Monday, 22 November 2021 3:23 pm
To: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

I didn't have Appendix B, so that should clarify a few things. I'll have a look at this tonight

Regards
Peter

From: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Sent: Monday, 22 November 2021 2:59 pm
To: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Hi Peter,

Claudia has sent me the attached documents – please let me know if there is any further information that you need?

Thanks
Saskia

From: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Sent: Friday, 19 November 2021 10:58 am
To: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Hi Saskia

I've had a read through the application and there will be more information required to be able to undertake the review. I can provide you with a list of the information needed, but I wondered if they have a design report for the stormwater basins that they have forgotten to include? The design information included seems to be largely narrative as opposed to the actual design information.

Regards
Peter

From: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Sent: Tuesday, 16 November 2021 8:04 am
To: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Kia ora Peter,

Sorry I only work Monday-Wednesday and had an annual leave day yesterday. Yes, if you could work on it that would be great.

Thanks
Saskia

From: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Sent: Monday, 15 November 2021 3:08 pm
To: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Hi Saskia

I was just checking in on this as I hadn't heard back from you. I was just wanting to confirm that you weren't expecting me to be working on it until I had confirmation from you.

Regards
Peter

From: Peter Christensen
Sent: Wednesday, 10 November 2021 4:22 pm
To: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Sorry for not getting back to you sooner. I would estimate that this would take a maximum of 12 hours at \$175 ex GST per hour or \$2,100 for the initial review.

Regards
Peter

From: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Sent: Tuesday, 9 November 2021 1:05 pm
To: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Hi Peter,

Yes, I am happy with the management of that potential conflict.

If you could also look at the sizing for treatment (water quality) that would be great. That timeframe sounds great.

Thanks
Saskia

From: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Sent: Tuesday, 9 November 2021 11:08 am
To: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Subject: RE: SMP review, 382 Mill Road Ohoka

Hi Saskia

I just checked with one of my colleagues who is doing some work with WDC to identify any conflicts of interest, but he is not involved in this particular stormwater management facility and will not be involved in the review. So if you are ok with management of that potential conflict, then I am happy to undertake a review.

Just to confirm, when you say 'sizing' do you also mean sizing for treatment (water quality) or only for quantity? Once I know that I can provide a price estimate for you. I would be happy to work to your timeframe, but ideally I would have till the end of next week to complete.

Regards
Peter

From: Saskia Wilson <Saskia.Wilson@ecan.govt.nz>
Sent: Tuesday, 9 November 2021 10:35 am
To: Peter Christensen <peter.christensen@stormenvironmental.co.nz>
Subject: SMP review, 382 Mill Road Ohoka

Mōrena Peter,

I am processing a set of application for a stormwater management area, near Ohoka at 382 Mill Road. The works will be undertaken at 382 Mill Road, with treated stormwater being discharged to the Mill Road Drain which eventually flows into the Cust Main Drain.

Do you have availability to review the SMP with regards to sizing and quantity management?
This email is intended as an initial enquiry seeking an indication of availability for this work and a

cost estimate for undertaking the audit.

Application details:

Resource Consent Number: CRC221240-244

Applicant Name: Waimakariri District Council

The application can be found at the following link: <https://www.ecan.govt.nz/data/consent-search/consentdetails/CRC221240/crc221240>

If you are interested in undertaking the technical review on behalf of Environment Canterbury, could you please provide me with a cost estimate for this work and also a timeframe for undertaking this review?

Ngā mihi
Saskia

Please note - I only work Monday, Tuesday and Wednesday.

Saskia Wilson

Senior Consents Planner

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