

Evidence summary for presentation– Nicole Phillips

I can clarify that my evidence covers all WW1, 2 including Horner block, WW Runoff, WW4 and WW5.

I will present at both hearings, therefore my summary given today will be specific to WW1, 2, Horner block and WW Runoff.

WW1, WW2 and Horner block

1. The N and P loss across the total farm areas on WW1 and 2 on a kg/farm basis shows no change or a decrease under the proposed barn scenarios using Overseer v6.3.2 – see *addendum evidence table 1 and 2*.
2. WW1 and WW2 have been modelled as one nutrient budget and the proposed losses cannot be easily split.
3. Stock numbers are modelled to increase under the proposed scenarios for the combined platform, from the current consented 1340 cows to 1500 cows. See *addendum evidence Table 3 and 4 for detailed stock numbers by months*.
4. Other stock numbers change as well under the proposed scenario.
5. Further P reductions that are not considered in Overseer are based on implementing very prescriptive on farm actions detailed in reports provided.
6. Mr Duncan has provided the modelling for the 2018/2019 year end on Monday 30th September.
7. Based on Mr Duncan's description of the changes on farm in the 2018/2019 season, I have assumed that the N loss from the 2018/2019 period will continue to be the N loss until such time as the proposed barn scenarios are in place; if the relevant consents are granted. This is based on Mr Duncan's discussion that in the 2018/19 season WOL and WTL continued to be developed in anticipation of resource consent for expanded dairying being granted.
8. From reviewing the FEMP, farm scenario reports and nutrient budgets it is clear that it is the intent of the applicant to farm in line with generally accepted GMP's.
9. One input in my opinion seen as not being in line with generally accepted GMP's is the total N applications on effluent vs non effluent blocks. This corresponds to a difference in N loss on the corresponding soil type – see *table 9 page 18 of my evidence for an example*.
10. Horner block
 - a. N from effluent increases from 166kg N to 243kg N.
 - b. There is a reduction in N from fertiliser applied -293kg N fertiliser to 207kg under the proposed scenario
 - c. The total N applied across the block under the proposed reduces by 9kg N/ha/yr (459kg to 450kg).
 - d. Total N applied in my opinion is very high at 459kg n/ha/yr.
 - e. I have read Dr Roberts summary in paragraph 37 and 38 of his evidence.

- f. My expectation would still be that a certified consultant was providing fertiliser recommendations annually, including the need for the additional N fertiliser.

11. Mr Duncan mentioned in his evidence presentation that a mitigation was the reduction of winter grazing area on Woldwide Runoff to 78ha. I do not consider this a mitigation, as although it may be a decrease in area from the original proposed area, it is an increase in area when compared to the current (52ha).

12. My view is that Overseer modelling should be used in conjunction with the FEMP, which will detail all mitigations and GMP's implemented on farm, especially those that Overseer does not account for. The FEP/FEMP should be independently audited by a suitably qualified person to ensure that all of the mitigation strategies and GMP's included in this application are being carried out on farm, and also to review their effectiveness.

If there are any questions from Commissioners to me in regard to uncertainties with the Overseer model, I will defer to the evidence given by expert's Dr Roberts and Dr Freeman as I agree with their summaries on this aspect.

WW4 and WW5

13. The N and P loss across the total farm areas on a kg/farm basis show no change or a decrease under the initial proposed scenarios, with the exception of WW5 where the initial proposed scenario shows a slight increase in N loss under v6.3.2 – see *Table 10 of my addendum evidence*.
14. The proposed barn scenarios show either no change or a decrease in N and P loss on a kg/farm basis in v6.3.2.
15. Stock numbers are modelled to increase under the proposed scenarios all platforms.
16. Mitigations in place or proposed on WW4 and WW5 **do not** offset the increase in N loss on the sheep block when converted to dairy on a kg N/ha/yr basis. Although as mentioned above the total N loss kg/farm shows either no change or a decrease under the barn scenarios on these properties.
17. The proposed Overseer files are representative of the likely nutrient loss until such time as the barns are installed or expanded.
18. Further P reductions are based on implementing very prescriptive on farm actions detailed in reports provided.
19. From reviewing the FEMP, farm scenario reports and nutrient budgets it is clear that it is the intent of the applicant to farm in line with generally accepted GMP's. One input is seen as not being in line with generally accepted GMP's: total N applications on effluent vs non effluent blocks. This corresponds to a difference in N loss on the corresponding soil type – see *table 9 page 18 for an example*.

20. My view is that Overseer modelling should be used in conjunction with the FEMP, which will detail all mitigations and GMP's implemented on farm, especially those that Overseer does not account for. The FEP/FEMP should be independently audited by a suitably qualified person to ensure that all of the mitigation strategies and GMP's included in this application are being carried out on farm, and also to review their effectiveness.