

BEFORE THE ENVIRONMENT COURT
AT CHRISTCHURCH

I MUA I TE KŌTI TAIAO O AOTEAROA
KI ŌTAUTAHI

Decision No. [2020] NZEnvC 155

IN THE MATTER of the Resource Management Act 1991
AND of an appeal under section 120 of the Act
BETWEEN WILKINS FARMING CO LIMITED
(ENV-2018-AKL-380)
Appellant
AND SOUTHLAND REGIONAL COUNCIL
Respondent

Court: Environment Judge J E Borthwick
Environment Commissioner M C G Mabin
Environment Commissioner A P Gysberts

Hearing: at Invercargill on 10 February 2020 and
at Christchurch on 16 and 17 July 2020

Appearances: B S Carruthers for the appellant
P A C Maw and M J Doesburg for the respondent

Date of Decision: 21 September 2020

Date of Issue: 21 September 2020

INTERIM DECISION OF THE ENVIRONMENT COURT

REASONS

Introduction

[1] Wilkins Farming Co Ltd has appealed the conditions of a water permit granted¹ by the Southland Regional Council.



¹ AUTH-20181529.

[2] While Wilkins has previously held a water permit to take and use water to irrigate 245 ha,² Wilkins had not applied to renew the permit, before it expired on 20 October 2015.³ This appeal,⁴ therefore, concerns the conditions of consent imposed on the grant of a new water permit.

[3] The appeal was set down for a hearing in February 2020. Immediately prior to the hearing the parties requested the hearing be vacated and that the court grant a partial consent order to authorise the permit for a seven-year duration subject to various conditions. As the application for consent orders was largely unsupported, the court declined to vacate the hearing. Shortly after the hearing commenced it became clear that neither counsel nor the witnesses were able to discuss complex conditions of consent filed late the preceding working day. Consequently, the hearing was adjourned with directions that the parties file evidence in support of the new conditions.

[4] After the hearing was adjourned, the court released a detailed Minute responding to the set of conditions in respect of which the parties had earlier sought consent orders.⁵ We are grateful for the consideration given to the Minute by the parties. When the hearing resumed in July 2020, the parties presented a second set of conditions, being a substantial revision of those earlier presented. This decision addresses the condition set filed in July 2020.⁶

[5] With that said, the decision is a partial determination of the appeal and deals mainly with issues arising in relation to the proposed increase in consent duration and secondly, rates of abstraction. No decision is made as to the cut-off rate at which abstraction must be reduced and ultimately cease. At the request of the parties this aspect of the appeal will be put on hold to allow the Regional Council to undertake a catchment-wide review of the allocation of water quantity.⁷

Issues for determination

[6] The following issues arise for determination:

² AUTH-201006.

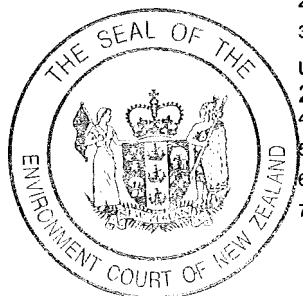
³ Regional Council's memorandum ,17 December 2018 at [11]. Note: the water take and use continued unauthorised for three years after the expiry of the previous permit until the partial commencement of AUTH-20181529 was allowed.

⁴ Amended notice of appeal, 25 July 2019.

⁵ Minute, 21 February 2020.

⁶ Condition set filed by appellant after July hearing adjourned.

⁷ Minute, 21 February 2020 at [6].



- (a) can conditions 9-15 be lawfully imposed?
- (b) is the Farm Environmental Management Plan, Phosphorus Mitigation Plan and Overseer nutrient budget conditions fit for purpose?
- (c) should the explanatory material prefacing the foregoing conditions be approved?
- (d) are the balance of conditions clear, certain and enforceable?
- (e) should the permit be approved for a seven-year duration?
- (f) should the court adjourn the balance of the appeal as requested?

[7] As this is an appeal against the conditions of consent, the court is not tasked by the parties to determine whether the contaminant inputs into the Maitara catchment are acceptable. Indeed, the evidence precludes findings of fact being made.

Draft condition set

[8] In this decision all condition references are to the set filed by the appellant after the July hearing adjourned.⁸

National Policy Statement Freshwater Management 2020 and Resource Management (National Environmental Standards for Freshwater) Regulations 2020

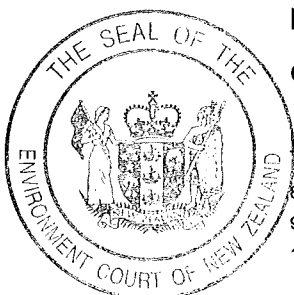
[9] The appeal was heard prior to the above planning instruments coming into force on 3 September 2020 and we are not invited to undertake an evaluation in light of the same.

Early commencement

[10] In December 2018 the court granted Wilkins' application pursuant to s 116 of the Resource Management Act 1991 ("the Act" or "the RMA") to commence exercise of the water permit pending determination of the appeal.⁹

The law

[11] As Wilkins' proposed activities are not expressly allowed by a rule in a Regional Plan, a water permit is required to do something which would otherwise contravene s 14 of the Act.¹⁰



⁸ Received by email from Ms Carruthers to Registry, 20 July 2020.

⁹ [2018] NZEnvC 245.

¹⁰ RMA, s 87(d).

[12] Section 14 of the Act clearly imposes restrictions on the take and use of water, in that:¹¹

- (2) No person may take, use, dam, or divert any of the following, unless the taking, using, damming, or diverting is allowed by subsection (3):
 - (a) water other than open coastal water; or
 - (b) heat or energy from water other than open coastal water; or
 - (c) heat or energy from the material surrounding geothermal water.

[13] The proposed take and use activities are classified as discretionary activities under the operative and proposed Regional Plans.¹² Given this, the consent authority may grant or refuse the application for a water permit. If granted, the consent authority may impose conditions under s 108.¹³

Power to impose conditions

[14] As noted, this is an appeal against the conditions of consent imposed by the Regional Council. The power to impose conditions on the grant of resource consent is set out in s 108. Importantly, this power is subject to the limitations in s 108AA, including (relevantly) the requirement that the condition is directly connected to an adverse effect of the activity on the environment.¹⁴

[15] Section 108 provides:

- (1) Except as expressly provided in this section and subject to section 108AA and any regulations, a resource consent may be granted on any condition that the consent authority considers appropriate, including any condition of a kind referred to in subsection (2).

[Sub-sections 2-10 are omitted].

And s 108AA:

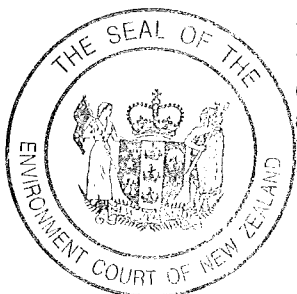
- (1) A consent authority must not include a condition in a resource consent for an activity unless—

¹¹ RMA, s 14(2).

¹² Operative Regional Water Plan for Southland (amended in accordance with Council and Environment Court decisions, April 2010) [Operative Regional Water Plan], Rule 23(d); and Proposed Southland Water and Land Plan (Decisions Version, 4 April 2018) [pSWLP], Rule 54(d).

¹³ RMA, ss 104B and 87A(4).

¹⁴ RMA 1991, s 108AA(1)(b)(i).



- (a) the applicant for the resource consent agrees to the condition; or
- (b) the condition is directly connected to 1 or both of the following:
 - (i) an adverse effect of the activity on the environment;
 - (ii) an applicable district or regional rule, or a national environmental standard; or
- (c) the condition relates to administrative matters that are essential for the efficient implementation of the relevant resource consent.

[Sub-sections 2-5 are omitted].

Scope or extent of relevant effects

[16] When considering an application for resource consent and any submissions received, the consent authority, and this court on appeal, must, subject to Part 2, have regard to – amongst other matters – the actual and potential effects on the environment of allowing the activity.¹⁵

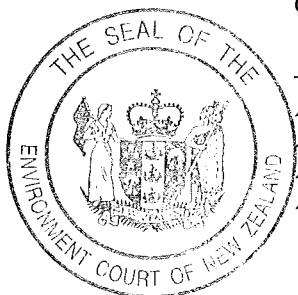
[17] The meaning of 'effect' is broadly defined by the Act as follows:¹⁶

In this Act, unless the context otherwise requires, the term **effect** includes—

- (a) any positive or adverse effect; and
- (b) any temporary or permanent effect; and
- (c) any past, present, or future effect; and
- (d) any cumulative effect which arises over time or in combination with other effects — regardless of the scale, intensity, duration, or frequency of the effect, and also includes —
- (e) any potential effect of high probability; and
- (f) any potential effect of low probability which has a high potential impact.

[18] Counsel are agreed that the guidance given on the scope or extent of relevant effects in *Beadle v Minister of Corrections (Beadle)*¹⁷ remains good law.

[19] *Beadle* predates the insertion of s 108AA in the Act¹⁸ and the decision engages with the purpose of the activity for which consent is required and more particularly, the issue whether consequential effects arising in relation to that purpose (or “end-use”) are within scope of s 104(1)(a). In *Beadle*, consent was required for earthworks and streamworks to create a site for a correctional facility. Judge Sheppard held that, within limits of nexus and remoteness, the court may have regard to the intended end-use of the site



¹⁵ RMA, s 104(1).

¹⁶ RMA, s 3.

¹⁷ A74/2002, Judge Sheppard, 8 April 2002 [*Beadle*].

¹⁸ Section 108AA was inserted, on 18 October 2017, by s 147 Resource Legislation Amendment Act 2017.

as a correctional facility and any consequential effects on the environment, provided these effects are not too uncertain or remote.¹⁹

[20] Applying *Beadle* to the facts of this case, the Regional Council submits, if an adverse effect is within scope of s 104(1)(a), a condition may be imposed on a resource consent pursuant to s 108AA, provided that the condition is directly connected to the adverse effect.²⁰ Counsel for Wilkins agrees with the Regional Council's submission,²¹ as do we.

Validity of conditions

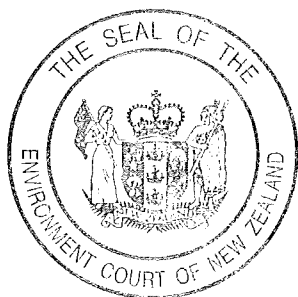
[21] Returning to s 108, counsel also agree that, in addition to the restrictions imposed in s 108AA, for a condition to be imposed it must also satisfy the tests for validity. Set out in the House of Lord's decision of *Newbury District Council v Secretary of State for the Environment (Newbury)*,²² the three tests are:

- (a) the condition must be for a resource management purpose, not for an ulterior purpose;
- (b) the condition must fairly and reasonably relate to the development authorised by the consent to which the condition is attached; and
- (c) the condition must not be so unreasonable that no reasonable planning authority duly appreciating its statutory duties could have approved it.

[22] As heralded above, an issue has arisen whether some of the conditions imposed by the Regional Council are lawful.

[23] The dispute has two aspects:

- (a) first, whether some conditions lack the necessary connection with the activity for which resource consent is required;



¹⁹ *Beadle* above n 17 at [88] and [90].

²⁰ Legal submissions on behalf of Southland Regional Council, 17 July 2020 [Regional Council's submissions] at [31].

²¹ Transcript (Carruthers) at 246.

²² [1981] AC 578, [1980] 1 All ER 731.

- (b) second, in relation to those conditions controlling activities that are otherwise permitted by a Regional Plan; namely part of condition 10 (sheep) and conditions 13 and 15 (activities in ephemeral rivers), is it:²³
- (i) lawful to impose a condition more stringent than that contained in the Regional Plan rules for permitted activities; and
 - (ii) appropriate for the Regional Council to impose conditions that effectively challenge the provisions of the proposed plan.

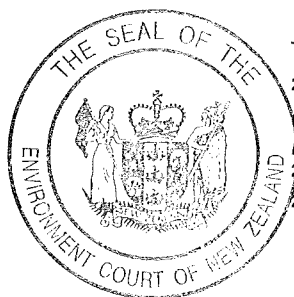
[24] The Regional Council says such conditions are lawful provided that they also meet the tests set out in *Newbury*.

[25] We decline to rule on whether a condition of consent may be more stringent than the standards for permitted activities in the Regional Plan. For reasons that we will give, where we do not approve conditions it is because the Regional Council has not raised satisfactory evidence to support imposing the same. Therefore, we are not satisfied on the evidence before us that the conditions meet *Newbury*'s second or third tests and, on that basis, we do not need to decide the matter of stringency.

[26] Instead, we will consider the proposed conditions under s 108AA in light of the guidance given in *Beadle*.

Planning instruments

[27] We heard from two planning witnesses on the instruments relevant to the consideration of the contested conditions. While we have kept in mind all the provisions referred to us, we highlight Objectives 1 and 3 of the proposed Southland Water and Land Plan ("pSWLP") as these orientate the court's attention (and that of the Regional Council and of Wilkins) onto the health and mauri of the waterbody and, it follows, of the environment and people. We disagree with the appellant's planner when he said "there is no implementation plan in place to achieve the pSWLP objectives".²⁴ We agree with the Regional Council's planner that, pending the introduction of the Freshwater Management Units via a future plan change, water quality can (and, indeed, we add must) be addressed on a case-by-case basis.²⁵



²³ Legal submissions on behalf of Wilkins Farming Co Limited, 16 July 2020 [Wilkins' submissions] at [3.8]. (Citing: *88 The Strand v Auckland City Council* [2002] NZMA 475 at [15], *Palmerston North City Council v Dury* [2008] NZRMA at [23]-[25] and *Bell v Rodney District Council* [2003] NZRMA 559 at [9], [25] and [67]).

²⁴ Engel, supplementary evidence, 19 March 2020 at [12].

²⁵ Maciaszek, supplementary evidence, 29 May 2020 at [33].

State of the Environment

[28] Dr Freeman²⁶ for the applicant and Dr Young²⁷ for the Regional Council provided briefs of evidence on water quality in the Maitara River. They both referred to data on the Land Air Water Aotearoa website. There are 17 relevant water quality monitoring sites in the Maitara catchment, four of these are on the main stem of the river and the remainder are on smaller tributary streams. Wilkins' property is adjacent to the Maitara River, situated upstream of all but one of these monitoring sites. Both experts agreed that the main stem of the Maitara River would be the direct surface water receiving environment for contaminant losses from Wilkins' farm.

[29] The experts provided different perspectives on the water quality data. Dr Freeman concentrated on the four water quality monitoring sites closest to Wilkins' farm, one on the Maitara River and three on tributaries.²⁸ Data from these sites has been used to inform his opinion that the Maitara River water quality is likely degrading across several standards with three common significant issues: high concentrations of faecal indicator microorganisms, raised nutrient concentrations, and poor clarity (at times).²⁹

[30] Dr Young's evidence referred to all of the relevant water quality monitoring sites in the Maitara River catchment.³⁰ He noted that leaching of contaminants, particularly nitrate-nitrogen, is significant in Old Maitara, Oxidising, and Riverine physiographic zones that are present at Wilkins' farm.³¹ Summarising the data, Dr Young says it is his opinion that surface water quality in the catchment is generally poor, with high concentrations of faecal indicator bacteria, in excess of the National Objectives Framework's bottom line values, at most sites.³²

[31] Dr Young and Dr Freeman participated in court-facilitated expert conferencing at which they agreed on the current water quality of the Maitara River.³³ Unfortunately, they did not set out what the nature of this agreed water quality was but, as we outline in the paragraphs above, we can conclude that water quality in the Maitara River is likely

²⁶ Freeman, EiC, 6 November 2019.

²⁷ Young, EiC, 15 November 2019.

²⁸ Freeman, EiC, 6 November 2019, Tables 2-5 at 14-17.

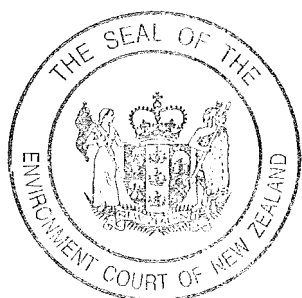
²⁹ At [38]-[41].

³⁰ Young, EiC, 15 November 2019 at [41].

³¹ At [14].

³² At [18].

³³ Water Quality Joint Witness Statement, 28 November 2019, Agreed Matters at 2.



degrading and that the contaminants of concern that are relevant to Wilkins' farm are, in order of significance, nitrogen, faecal indicator bacteria, phosphorus, and sediment.

Overview of the condition set

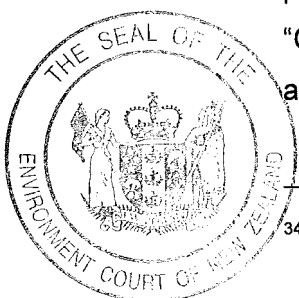
[32] The Regional Council granted the water permit for a two-year duration. While Wilkins appealed seeking 15-year duration, they have amended the appeal reducing the duration sought to seven years.

[33] The duration of the permit is correlated with an increase in contaminant load in the environment. A change in water quality may have consequential effects on the environment which are primarily cumulative effects and include effects that may be spatially located far distant from Wilkins' farm. And, as the RMA definition of "cumulative effects" connotes, these effects are (or are likely to be) the consequence of many interacting processes, including processes unrelated to the activity for which consent is required. The fact that the quantum of contaminants that will arrive in the waterbody is a variable creates uncertainty for the consent authority and an applicant for resource consent when contemplating consent conditions. This uncertainty is characteristic of farming, as it is a dynamic, open system.

[34] Given this, we have found it helpful to consider effects, including cumulative effects, through the lens of risk. We approach risk as the product of *likelihood* and *consequence*. Thus, the important considerations are:

- (a) what is the likelihood that a contaminant might be lost from the farming system; and
- (b) what are the consequences associated with this contaminant entering the receiving environment?

[35] The term "likelihood" is strongly correlated with the "farming system". While referred to extensively in evidence, the term "farming system" was not defined but, for present purposes, we define it as an all-encompassing term that applies to farm land and production taking place on farm land (including the management of the same).³⁴ "Consequences" are the cumulative adverse effects of the contaminants when they reach an already degraded Mataura River.



³⁴ See Transcript (Maciaszek) at 95 for a definition of "farm system".

[36] Were we to focus solely on the consequences (i.e. effects) side of the risk matrix (likelihood x consequence), it is unlikely we could find that Wilkins' take and use of groundwater will have a measurable change in water quality in the Mataura River. Taking such a finding to its (il)logical conclusion, no individual farmer could be found to be having a measurable effect, thus no action would be taken to address the degraded state of the Mataura River.

Irrigation area

[37] We have at least three plans showing different areas of land to be irrigated under this permit. This includes a plan attached to the application for resource consent and labelled "CB199" that records Sharrow Flats as extending north beyond a belt of trees; secondly, a plan attached to Mr M Wilkins evidence where the land to be irrigated under this permit excludes the land north of the trees and excludes land east of his dwelling and finally, the FEMP that does not have a plan of Sharrow Flats – but we understand the permit area is that area of land shaded green and orange on the Management Blocks Map. Parties will be directed to produce a plan of the land area to be irrigated under this permit and to confirm the land area is 159 ha as we were told.

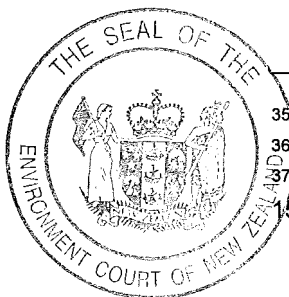
Issue: can conditions 9-15 be lawfully imposed?

Appellant's submission

[38] Wilkins opposes the imposition of seven conditions (being conditions 9-15) proposed by the Regional Council in response to degrading water quality in the Mataura catchment. The text of these conditions is attached to this decision and labelled "A".

[39] Wilkins submits there is no justification to impose these conditions³⁵ and the conditions are opposed on the grounds that:

- (a) the conditions are not directly connected to the effects of irrigation, being the activity authorised by this consent;³⁶ and
- (b) three conditions, or sub-clauses thereof, purport to control activities that are permitted under the pSWLP.³⁷



³⁵ Wilkins' submissions above n 23 at [3.14].

³⁶ At [3.17] and conditions 9-15 generally.

³⁷ At [3.17] and specifically, the reference to 'sheep' in conditions 10 and 25(f), condition 13 and condition 15(a).

[40] More particularly, Wilkins submits the contested conditions do not satisfy s 108AA of the Resource Management Act 1991 insofar as the conditions are either not directly connected to an adverse effect of the activity on the environment or, secondly, a rule in the regional plan.³⁸ Indeed, we were told many of the contested conditions simply reflect Wilkins' current farm practices. Where Wilkins' farm practices deviate from the proposed conditions of consent, it is in relation to those activities that are permitted by the pSWLP.

[41] Save in relation to conditions addressing activities that are permitted under the pSWLP,³⁹ if the court were to reach the contrary view to Wilkins, the text of the conditions is agreed.⁴⁰

[42] With the exception of some Overseer conditions,⁴¹ the balance of the water quality conditions (being conditions 18-50) are not opposed by Wilkins. These conditions are either directly connected to an adverse effect of irrigation,⁴² or are agreed to by Wilkins.⁴³

Regional Council response

[43] The contested conditions are said to address the effect of the use of water, including effects resulting from intensified production that is enabled by irrigation. If implemented, the conditions would ensure farm practices are adopted which will reduce losses of contaminants to water.⁴⁴

[44] To determine whether the conditions are directly connected to the effects of the activity, the Regional Council submits that the court must decide:

- (a) what is the activity in relation to which resource consent is sought?
- (b) what are the effects of the activity? and
- (c) whether the conditions are directly connected to the effects of the activity.

[45] There was debate between counsel as to the activity for which Wilkins sought consent. We find there are two activities in relation to which resource consent was

³⁸ At [3.10]-[3.12].

³⁹ Conditions 10 and 25(f), condition 13 and condition 15(a).

⁴⁰ Wilkins' submissions above n 23 at [1.5].

⁴¹ Conditions 39-44.

⁴² RMA, s 108AA(1)(b)(i).

⁴³ RMA, s 108AA(1)(a). See Wilkins' submissions above n 23 at [2.5] and [3.10].

⁴⁴ Condition Set above n 8, 'Water Quality Section' at 14, introductory words appearing in italics.



sought: a take and a use.⁴⁵ Wilkins sought a water permit to take groundwater and, secondly, to use groundwater to irrigate crops and pasture.⁴⁶ As to the distinction between the activity in relation to which resource consent is sought and, secondly, the purpose of the activity: see *Aotearoa Water Action v Canterbury Regional Council* [2020] NZHC 1625 at [99]-[113] and also [82].

[46] The groundwater is to be used to irrigate crops and pasture within the irrigation area, i.e. 159 ha labelled "Block 1" and "Block 2" in the application for resource consent⁴⁷ and referred to in evidence as Sharrow Flats. While Wilkins has previously undertaken intensive winter grazing of deer and dairy cows within this area, counsel advised the grazing of dairy cows would cease and, further, Wilkins will comply with the standard pertaining to land area in the pSWLP permitted activity rule for winter grazing activities.⁴⁸

Conditions said not to be directly connected to the effects of the use of water for irrigation authorised by this consent

Condition 9

[47] Condition 9 limits the length of time land can be left fallow following intensive winter grazing. The operative Regional Water Plan describes the risk associated with winter grazing this way:⁴⁹

Intensive winter grazing is considered to have a high risk of adversely affecting water quality as it results in bare, often pugged soil, with concentrated amounts of effluent on the soil surface. Rainfall and the resultant overland flow can transport sediment and effluent into surface water bodies and artificial watercourses.

[48] The longer land is left fallow after intensive winter grazing, the greater the likelihood for nutrients to be lost to a water body.

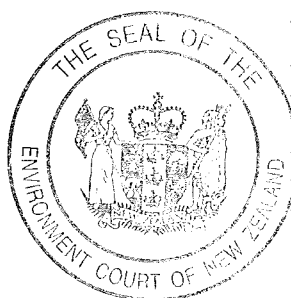
⁴⁵ Regional Council's submissions above n 20 at [18].

⁴⁶ As recorded in the Regional Council's submissions, above n 20 at [19], the application together with the Assessment of Environmental Effects variously describes the purpose for which water will be used in terms of irrigating 'pasture and crop'; 'livestock farming and cropping'; 'grazing, cutting silage or cropping'; 'deer farming and cropping'; and 'grazing and cropping'.

⁴⁷ Common Bundle at CB199, Application for Resource Consent, Appendix 2, Plan of Irrigation Areas, Waipounamu Road, Riversdale, Southland. The joint memorandum of counsel, 7 February 2020, at [6] notes that: "[t]he Appellant has also offered to surrender part of its consent by limiting the land to be irrigated under the permit to the land owned by the applicant and not the 'leased area' approved in the consent".

⁴⁸ Wilkins' submissions above n 23 at [4.4] and Transcript at p 247-248.

⁴⁹ Operative Regional Water Plan above n 12, Land Use Rules, Rule 2.2.1(b), Explanation.



[49] That said, there is no nexus that we were made aware of between the length of time land is left fallow and the irrigation of that land the following season. The length of time land spends fallow appears independent of the use of water to irrigate land.⁵⁰

[50] Condition 9, as drafted, requires good management practice. This is a matter that should be addressed in the Farm Environmental Management Plan ("FEMP"). Therefore, we do not approve this condition.

Conditions 11 and 12

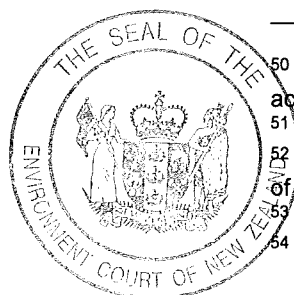
[51] Conditions 11 and 12 limit the rate at which nitrogen and phosphorus, respectively, is applied as a component of fertiliser. Where the rate of application to land exceeds plant requirements, the irrigation of that land may cause nutrient losses to a water body.⁵¹ The risk of an adverse ecological effect consequential upon a change in water quality is therefore directly related to the use of fertilisers and so we approve the imposition of these conditions.

[52] Alternatively, a condition could be imposed precluding irrigation of land upon which nutrients, exceeding the Code of Practice, have been applied.⁵² Such a condition would be justified with reference to the effects of the irrigation on the environment. However, the Regional Council's proffered condition has the same effect and would be more straightforward and less restrictive than the alternative.

Condition 10

[53] Condition 10 requires the consent holder to back-fence sheep and cattle when undertaking intensive winter grazing.

[54] Intensive winter grazing is defined in the pSWLP and means "[g]razing of stock between May and September (inclusive) on forage crops (including brassica, beet and root vegetable crops), excluding pasture and cereal crops".⁵³ Stock is defined and includes cattle and sheep.⁵⁴



⁵⁰ We understand that at this farm whether land needs to be irrigated to establish winter crops depends on actual rainfall and soil moisture levels.

⁵¹ We include surface water and groundwater.

⁵² The standards in the conditions are those recommended in the New Zealand Fertiliser Association Code of Practice (Transcript at 76 and 102).

⁵³ pSWLP above n 12 at 109.

⁵⁴ At 116.

[55] A rule in the pSWLP permits intensive winter grazing subject to certain conditions.⁵⁵ Those conditions include a limitation on stock numbers. For cattle, the mob size is not to exceed 120 animals.⁵⁶ There is no restriction on sheep numbers. Across its 411.5 ha farm Wilkins grazes up to 1,600 cattle every two out of six years, this includes grazing on the 159 ha to be irrigated under this water permit.⁵⁷

[56] Back-fencing is a method to ensure urine and dung are evenly distributed across the paddock.⁵⁸ Also, unless well managed, grazing cattle (at least) may damage soil by sealing/compacting or pugging the soil's surface.⁵⁹

[57] While Wilkins states that they will no longer undertake intensive winter grazing of cattle in Sharrow Flats, the appellant does not oppose the imposition of the condition for this reason.⁶⁰ At odds with what we were told about the use of land for this purpose, the FEMP continues to refer to intensive winter grazing of cattle within the 159 ha of land to be irrigated. Our findings on the application of condition 10 to cattle are therefore subject to Wilkins clarifying whether the condition be deleted in its entirety on the basis that they have ceased intensive winter grazing of dairy cows within the permit area.

Condition 10 – cattle

[58] We note Mrs Higginson, an environmental consultant giving evidence on behalf of Wilkins, generally did not support the wording of the condition as she considered it does not allow for the consideration of animal welfare or health and safety.⁶¹ If the condition was imposed, she only supported back-fencing where practical. On the other hand, subject to the lawfulness of the condition, counsel for Wilkins takes no issue with the wording of the condition⁶² and so, if confirmed, we will leave animal health and welfare concerns to be addressed by the FEMP.

[59] We heard no evidence addressing the remediation of the soil structure prior to re-sowing or direct drilling. Therefore, we cannot discount the likelihood of nutrient loss with consequential adverse effects (principally ecological) were land to be irrigated following

⁵⁵ Rule 20(aa)(i).

⁵⁶ Rule 20(a)(iii)(3)(E).

⁵⁷ Transcript (Wilkins) at 32-33. Winter grazing for some 2,500 deer occurs every year, but not within the permit area.

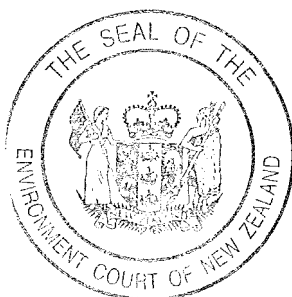
⁵⁸ Maciaszek, supplementary evidence, 29 May 2020 at [55].

⁵⁹ For discussion on compaction risk, see: Transcript (Higginson) at 91 and 98 and Transcript (Young) at 161.

⁶⁰ Wilkins' submissions above n 23 at [4.4] and Transcript at p 247 – 248.

⁶¹ Higginson, supplementary rebuttal evidence, 10 June 2020 at [14].

⁶² Wilkins' submissions above n 23 at [1.5(c)].



a period of intensive grazing. Back-fencing of cattle reduces the likelihood of nutrient loss following irrigation and so, if Wilkins confirm their intention to continue intensive winter grazing, we will approve the reference to cattle in this condition.

Condition 10 – sheep

[60] Condition 10 also requires the consent holder to back-fence sheep during intensive winter grazing.

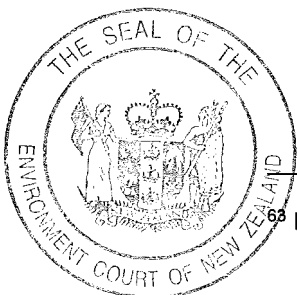
[61] Wilkins objects to the inclusion of sheep in the condition on the grounds that the rule in the pSWLP that permits intensive winter grazing expressly excludes sheep from the requirement to back-fence stock.⁶³ In addition, we note that there is no restriction on mob size as a condition of this rule.

[62] The Regional Council did not provide technical support addressing the likelihood of nutrient losses resulting from intensive winter grazing of sheep. Assuming mob size is a factor relevant to the determination of 'intensive' grazing and that mob size is correlated with the likelihood of nutrient loss, we have no basis to reach a view on consequential effects of irrigating land following sheep grazing. Therefore, if this condition is still required, we do not approve the inclusion of the reference to sheep as part of this condition.

Condition 14

[63] Condition 14 requires Wilkins to maintain its current soil testing programme, the outputs of which are used to map soil fertility. Once done, these maps inform decisions about fertiliser requirements and variable rate spreading.

[64] The Regional Council has not demonstrated a nexus between the soil testing programme and irrigation. Subject to compliance with conditions 11 and 12, the soil testing programme is an example of good management practice, and a matter better left to be addressed in the FEMP.



⁶³ Rule 20(a)(iii)(3)(B). See Wilkins' submissions at [3.15(b)].

Conditions pertaining to permitted activities

Conditions 13 and 15 – activities in ephemeral rivers

[65] The purpose of conditions 13 and 15 is to control stock access to, and the discharge of fertilisers within, an abandoned river braid located on Wilkins' property. The FEMP prepared on behalf of Wilkins locates an abandoned braid of the Mataura River and identifies this as both an "ephemeral river" and a "critical source area".

[66] The pSWLP defines "ephemeral rivers" as:⁶⁴

Rivers which only contain flowing or standing water following rainfall events or extended periods of above average rainfall.

And "critical source area" as:⁶⁵

(a) a landscape feature like a gully, swale or a depression that accumulates runoff (sediment and nutrients) from adjacent flats and slopes, and delivers it to surface water bodies (including lakes, rivers, artificial watercourses and modified watercourses) or subsurface drainage systems; and

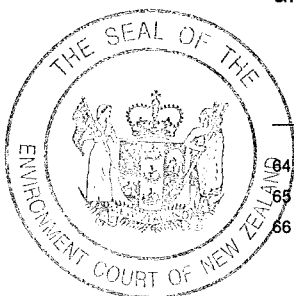
(b) areas which arise through land use activities and management approaches (including cultivation and winter grazing) which result in contaminants being discharged from the activity and being delivered to surface water bodies.

[67] The conditions are opposed upon the grounds that these activities are permitted by rules in the pSWLP.⁶⁶ Rule 14 applies to the discharge of fertiliser and states:

- (a) The discharge of fertiliser onto or into land in circumstances where contaminants may enter water is a permitted activity provided the following conditions are met:
- (i) other than for incidental discharges of windblown fertiliser dust, there is no direct discharge of fertiliser into a lake, river (excluding ephemeral rivers), artificial watercourse, modified watercourse, or natural wetland or into groundwater; and

...

[68] While we were not addressed by the planners on this matter, it appears to us that under this rule discharges to a critical source area require resource consent.



⁶⁴ pSWLP above n 12 at 108.

⁶⁵ At 107.

⁶⁶ Rule 14 and Rule 20(aa).

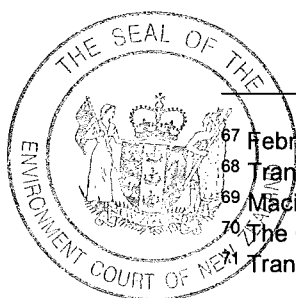
[69] Rule 20(aa), permits (unless otherwise stated) intensive winter grazing, cultivation and disturbance by livestock of ephemeral streams and Rule 20(a)(iii)(F) requires critical source areas to be grazed last.

[70] Mr Wilkins, the Managing Director of the Wilkins Farming Co Ltd, gave evidence that the braid feature was blocked off from the main river by flood protection works, stating he had only seen water in it perhaps four times in his lifetime in association with a flood event in the river.⁶⁷ In other words, water does not pond in this feature following rainfall. Furthermore, the feature does not have an outlet into the Mataura River or any other surface water body.⁶⁸ Mr Wilkins' evidence was not challenged.

[71] On our site visit, we saw evidence of the recent presence of water within the feature associated with the very large flood event that had occurred a few days prior, when most of the floodplain was underwater. Mr Wilkins' description of the braid feature accords with our observations made during the visit.

[72] The identification of the feature as a critical source area was a reason given for seeking the conditions be imposed on the consents.⁶⁹ It is our finding that the feature is mis-identified in the FEMP as a critical source area. That said, we acknowledge the identification of any critical source area is important because these features accumulate runoff (sediment and nutrients) from adjacent flats and slopes and discharge the same to surface water. In other words, critical source areas are contaminant pathways to surface water bodies.

[73] The pSWLP defines an ephemeral river as "a river which only contains flowing or standing water following rainfall events or extended periods of above average rainfall".⁷⁰ The accumulation of contaminants within the bed of an ephemeral river presents a different pathway associated with rising groundwater levels following rainfall. The concern here is with the potential for nutrients to pool within an ephemeral river creating a localised "hot spot".⁷¹ However, if this were happening we would have expected to see a trace of the nutrients within the results of the soil samples but we do not. There was no apparent concentration of nutrients within the feature.



⁶⁷ February Transcript (Wilkins) at 46; Transcript (Wilkins) at 38-39.

⁶⁸ Transcript (Wilkins) at 38-39.

⁶⁹ Maciaszek, supplementary evidence, 29 May 2020 at [56]-[57].

⁷⁰ The Operative Regional Water Plan (above n 12) does not define an ephemeral river.

⁷¹ Transcript (Maciaszek) at 227.

[74] The feature is likely a channel fragment disconnected from the Maitara River and is one of numerous abandoned braids on the floodplain of the Maitara River.⁷² Given the feature is a fragment of disconnected channel, now unrelated to the river system, that rarely holds water except in flood events, we do not consider it to be either an ephemeral river or critical source area as defined by the pSWLP.

[75] Therefore, we find, there is insufficient nexus between the feature and the use of water for irrigation. Consequently, we do not approve conditions 13 and 15(a). The exclusion of stock from the feature when there is flowing or ponded water present (condition 15(b)), accords with good management practice but, again, this practice is unconnected with use of water for irrigation and is to be addressed in the FEMP.

[76] As an aside, we do not consider it good practice for the planning or nutrient management advisors to simply accept the existence of a putative fact without inquiry, i.e. the feature is a critical source area and ephemeral river. There is a cost associated with the imposition of conditions on Wilkins without any apparent benefit for the environment.

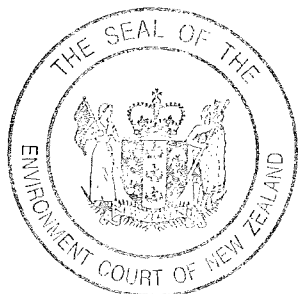
Farm Environmental Management Plan (conditions 18-28)

Discussion and findings

[77] Conditions 18-28 detail requirements for a FEMP with specific requirements relating to the 159 ha to be irrigated under the water permit.

[78] Wilkins prepared a draft FEMP, a copy of which was provided to the court.⁷³ The plan covers the whole of Wilkins 411 ha Sharrow Downs farm, not just the 159 ha irrigation block that is the subject of this decision. The court is not required to approve the draft FEMP: the draft FEMP is instead to be certified by a Certified Nutrient Management Advisor as being “consistent” with the conditions of this consent.

[79] As an aside, it is likely that the FEMP will require revision to bring it in line with the final conditions including, for example, addressing whether intensive winter grazing of 159 ha by cattle is contemplated, aligning the FEMP's objective for nutrient management with the conditions of consent⁷⁴ and documenting mahinga kai values.



⁷² Transcript (Hughes) at 54.

⁷³ Wilkins, supplementary evidence, 20 March 2020, attachment.

⁷⁴ The nutrient management objective is given as:

[80] The proposed FEMP conditions are in addition to the requirements in pSWLP: Appendix N. The conditions do not themselves specify any outcome for the environment. When presented with a similar set of conditions in February 2020 we gave feedback in a detailed Minute, observing at paragraph [45]:⁷⁵

Management plans can be useful in that they describe the methods (practices and procedures) to achieve the conditions of a consent. While the Farm Environmental Management Plan (FEMP) is to conform with Appendix N of the pSWLP, the proposed conditions do not identify any outcomes for the environment. That said, we note the Phosphorus Mitigation Plan appears to have an intended outcome of reducing the risk of P loss.

And at paragraph [47]:

The conditions addressing management plans typically state the outcomes to be achieved by the practices and procedures in the plan e.g. as a minimum, Wilkins' objective is to demonstrate continued improvement in land use and water management practices. Given that the plans are to be submitted each year to the Council, the outcomes are timebound and measurable. Our key proposition is this – the role of Overseer is to verify the achievability of the plan's objectives (for N and P at least). In terms of the objective described above, Overseer would verify that there is continuing reduction in nutrients from the baseline.

[81] In response, first, the parties propose to insert explanatory material (here and elsewhere) as to the purpose of the conditions in the body of the text. Such material is likely unenforceable for compliance purposes, nor able to be reviewed under s 129 of the Act, and we come back to this later.

Condition 18

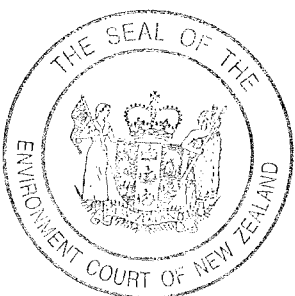
[82] Secondly, the parties propose to amend condition 18 so that it includes a requirement that the FEMP demonstrate improvement in land use and water management practices, as follows:

The consent holder shall maintain and implement a Farm Environmental Management Plan (FEMP) prepared in accordance with Appendix N of the proposed Southland Water and Land Plan or the Farm Environmental Management Plan requirements of any subsequent

- Use of nutrients efficiently and minimise nutrient losses to water
- Nutrient losses must not exceed consented limits (if applicable).

(Draft FEMP at 25).

⁷⁵ Minute, 21 February 2020.



version of the Plan to demonstrate improvement in land use and water management practices.

[83] We observe that “improvement” is a relative term, and the FEMP will need to demonstrate continuing improvement relative to the current-day farm system. In other words, under this condition the production of a FEMP is not a static one-off event.

Condition [xxx]

[84] Still missing is a condition that simply states the outcome of the management plan. Ultimately, is the attainment of this outcome that is to be certified. If correct, we suggest adding a new condition, condition [xxx] as follows:

The FEMP is to achieve the following outcome:

Good management practices are identified that will avoid, as a first priority, losses of contaminants whether by drainage through the soil to groundwater or by surface flow or any other pathway into surface waterbodies or, if avoidance is not practical, then the FEMP will identify effective practices to minimise losses of contaminants.

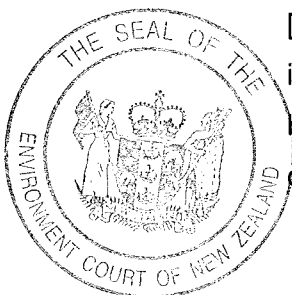
[85] We will direct the parties to respond to the court’s wording either confirming (with or without amendment) or proposing alternative wording to address the outcome to be achieved by the FEMP. Note: The wording is based on that proposed by the parties to the appeals on the pSWLP, including Wilkins.

Condition 20

[86] Jumping ahead slightly, condition 20 is a certifying clause. If the conditions do not specify an outcome of the FEMP, then a certificate that the FEMP is ‘consistent’ with the conditions of consent might suffice. If condition [xxx] is approved, the certifier is to attest that the FEMP will be effective to achieve the conditions of consent. The certification for the Phosphorus Mitigation Plan (condition 30), also requires that plan be “effective”.

Condition 19

[87] Condition 19 lists the requirements of the FEMP that are specific to the area to be irrigated by the water take that is the subject of this decision. The amendments proposed by the appellants are approved, noting that further amendments are to be made to sub-clause (h) to delete reference to condition 9.



Condition 25

- [88] Condition 25 sets out requirements for the Winter Grazing Plan. We comment:
- (a) for consistency with terminology in the pSWLP, consider whether the title of the plan will be amended to “Intensive Winter Grazing Plan”. If so, the same amendment will be required in condition 19;
 - (b) sub-clause 25(d), consider whether, in addition to soil compaction, to include pugging; and
 - (c) amend sub-clause 25(f) if condition 10 is to be deleted in its entirety.

Phosphorus Mitigation Plan (conditions 29-35)***Introduction***

[89] Phosphorus (“P”) is a contaminant which adheres to soil particles and is carried to the river as sediment via overland flow and soil erosion processes. Topography is a key factor in the risk of P loss, with steeper slopes more susceptible than flat slopes.⁷⁶

[90] While surface water quality downstream of the proposed water take is generally poor, concentrations of total and dissolved P are low and at or below relevant guidelines.⁷⁷ Drs Freeman and Young agree the primary cause of poor water quality in the Maitua catchment is contaminant losses from agricultural land use.⁷⁸

[91] Overseer models P loss as a function of surface run-off.⁷⁹ This modelling of P does not, however, take account of topography or the full range of measures available to attenuate P losses. For cropping farms, Overseer outputs are considered uncertain⁸⁰ and, given this, it is possible that Overseer may over-predict the risk of P losses at this property.

[92] While P losses have been modelled, the model's predictions are too uncertain to be taken up into the conditions of consent. Instead, the parties and their experts agree that P loss is better addressed through a Phosphorus Mitigation Plan (PMP).

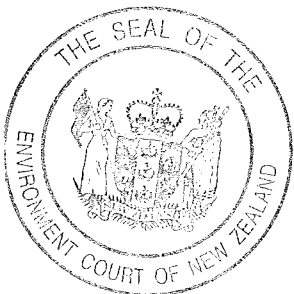
⁷⁶ Transcript at 95.

⁷⁷ Young, EIC, 15 November, at [20].

⁷⁸ At [43].

⁷⁹ Transcript (Higginson) at 103. .

⁸⁰ Transcript (Higginson) at 91; Transcript (Freeman) at 125-126.



[93] In their Joint Witness Statement, Drs Freeman and Young recommend amending the conditions of consent to require the PMP be certified as being “highly likely to significantly reduce long-term annual average phosphorus losses compared to what had likely been occurring prior to 2020”.⁸¹ “Highly likely” pertains to the level of confidence required as to occurrence of an event (namely a reduction in the concentration of P), whereas “significantly reduce” addresses the quantum or level of change.⁸² Although they continue to support these standards, the change was not carried through into the condition set.⁸³ We come back to this in the context of condition 30, but flag here our concern with the use of quantitative language (i.e. “significantly reduce”) to achieve a qualitative outcome where P losses are neither modelled nor measured.

[94] That said, Dr Freeman documented a number of P loss mitigation measures that have proven effective in New Zealand farming systems.⁸⁴ It is his evidence that planted riparian buffer strips are the primary method for reducing the risk of P losses for both cropping and pastoral farms. He was also of the opinion that a bund at the end of the irrigated paddocks adjacent to the river would be effective to attenuate P.⁸⁵ However, these measures taken by themselves may not “significantly reduce” P because the site is relatively flat and topography does not appear to be a controlling factor in losses of P through run-off.⁸⁶ Consequently, a range of measures may need to be taken that respond proportionately to the risk of run-off.⁸⁷

[95] As an aside, if implemented, the measures identified by Dr Freeman will have the added benefit of reducing sediment and faecal indicator organism loss to surface water, although the reduction would not be quantifiable.⁸⁸

[96] We turn now to address the proposed PMP conditions.

Phosphorus Mitigation Plan (PMP) conditions 29-35

⁸¹ Water Quality, Joint Witness Statement, 28 November 2019, Agreed Matters at 3..

⁸² Transcript (Young and Freeman) at 164-165.

⁸³ Transcript (Freeman) at 165.

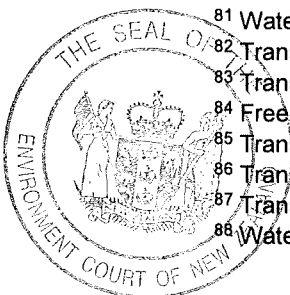
⁸⁴ Freeman, Rebuttal Evidence, 22 November 2019, at [8]-[12] and Attachment A.

⁸⁵ Transcript (Freeman) at 116-117.

⁸⁶ Transcript (Young) at 166-167.

⁸⁷ Transcript (Young) at 166-167.

⁸⁸ Water Quality, Joint Witness Statement, 28 November 2019, Agreed Matters at 3.



Condition 29

[97] Condition 29 requires a PMP to be developed with the objective of identifying and implementing effective measures that reduce P losses to surface water from the irrigation area. The condition refers to “estimated losses” of P, which are a carry-over from the February 2020 condition set when P output was to be modelled by Overseer which is no longer proposed.

[98] We do not yet understand what is meant by “estimated losses” and how these are to be established. Presently, the entire condition is uncertain and we cannot approve it. That aside, the content of the condition is somewhat repetitive and consequently the condition lacks clarity.

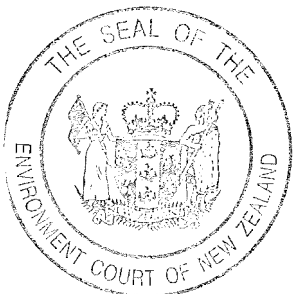
[99] That said, if the intention of the condition is to state the purpose of the management plan, then we wonder whether the new condition, condition [xxx] is sufficient.⁸⁹

[100] Finally, and importantly, the condition, as presently worded, talks about “P losses to water from the irrigation area authorised by this consent” (our emphasis). This phrase can be read in one of two ways. First, P losses are authorised by this consent and second, it is the irrigation area that is authorised by this consent. We have trouble with the former as the permit, not being a discharge permit, does not authorise the discharge of contaminants. We have no trouble with the second reading. However, given our uncertainty, the parties are to consider rephrasing while bearing in mind that the phrase appears in other conditions which may likewise require amendment.

Condition 30

[101] Condition 30 specifies independent certification of the PMP and is agreed by the parties. The condition requires that a Certified Nutrient Management Advisor certify that the P mitigation measures in the PMP are effective in reducing the losses of P and secondly, employing quantitative language, the certifier is to confirm the PMP measures are likely to result in “long-term annual average reduction in phosphorus loss to water”. As noted, Overseer is not available to estimate P losses in this case and, given this, we do not know how the quantitative measure of “long-term annual average reduction in phosphorus loss to water” will be determined. We will direct the parties to consider

⁸⁹ The PMP is a requirement of the FEMP under condition 19.



alternative wording that achieves what we understand is the qualitative outcome of the P loss measures, without the use of quantitative language. Unless there is good reason to include the qualifier “generally” in sub-clause (a), this qualification is to be deleted.

Overseer nutrient budgets⁹⁰ (conditions 36-46)

Introduction

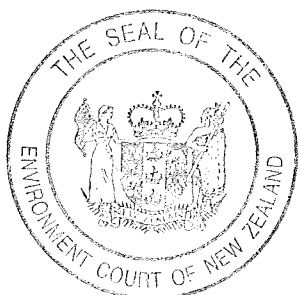
[102] In the condition set presented in February 2020, the Regional Council proposed, and the appellant agreed, nitrogen (N) and P would be maintained at or below the baseline contaminant loss rates of 35kg/ha/year N and 0.1kg/ha/year P.

[103] In response, we said:⁹¹

We are concerned at the reliance placed on Overseer to assess water quality and its role as the anchor for consent conditions. Overseer is not the environment that is being worked on, yet we think there is a strong likelihood its outputs will become the proxy for the desired state of the water quality environment and this is problematic when water quality is already degraded. There is also a risk that Overseer may become part of the problem if the core purposes of the model and its application in this case, is [sic] not properly understood and reflected in the conditions of consent.

[104] Overseer performs two functions in this set of conditions. First, to confirm consent holder compliance with the conditions of consent and second, to drive continuing consent holder engagement with good management practices across the property.⁹²

[105] We elaborate, Overseer is not used in this case to assess compliance with a catchment-based N loss property target. Dr Freeman’s evidence was that many of the concerns about uncertainties over Overseer estimates are focused on the comparison of a farm nutrient loss estimate with an absolute catchment-derived N loss target prescribed in a regional plan and/or resource consent. This is a very different application than the property-specific comparison in this case. Given that the reference point is one existing property, located in an area such as that used to calibrate key components (or sub-models) of Overseer, uncertainties in the model’s output are reduced significantly.⁹³ This evidence was unchallenged.



⁹⁰ This is not a discharge permit authorising the discharge of contaminants. We understand the sub-title is a reference to a report produced by Overseer.

⁹¹ Minute, 21 February 2020 at [27].

⁹² Transcript (Maciaszek) at 205.

⁹³ Freeman, supplementary evidence, 19 March 2020 at [16]-[17].

[106] We now consider the Overseer N budget requirements in conditions 36-46.

Overseer nutrient budgets – conditions 36-46

[107] Overseer modelling is used to estimate modelled losses of N to water relative to a baseline developed for Wilkins' farm.⁹⁴ The purpose of conditions 36-46 is to verify N losses were reduced relative to the baseline. The reduction of N losses is to be achieved through the other conditions of consent, in particular by operating in accordance with the good management practices recorded in the FEMP.

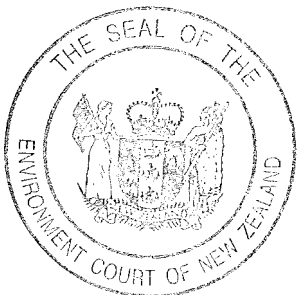
[108] Conditions 36 and 37 set out the Overseer modelling and reporting requirements, being, we were told, standard requirements where Overseer is used in New Zealand.⁹⁵

Condition 36

[109] Condition 36 sets out the requirement for N losses to groundwater, modelled as a four-year rolling average, to be maintained below the baseline N loss rate for the years ending 30 June 2016, 2017, 2018, and 2019. The condition differs in respect from the February 2020 condition set where N and P were to be maintained "at or below" the baseline (our emphasis).

[110] The appellant proposes to further amend the condition to introduce a statement about the purpose for undertaking the modelling. The additional wording is "to provide additional certainty that the farm's operation is improving water quality by reducing its nitrogen losses to water" and is taken from explanatory material included in the condition set.⁹⁶ The qualification is unnecessary, and we do not approve the same.

[111] Furthermore, the appellant would amend the condition by including a new sub-clause (c), to establish how the four-year rolling average is determined. While the Regional Council agreed in principle to this change during the hearing, they will be provided an opportunity to comment on the appellant's proposed wording.⁹⁷



⁹⁴ At [16].

⁹⁵ Freeman supplementary evidence dated 19 March 2020 at [72].

⁹⁶ Transcript (Caruthers) at 257-258.

⁹⁷ Transcript (Maw) at 258.

Condition 37

[112] The preamble to condition 37 repeats the requirements for modelling set out in condition 45. If this is the case, would the condition be clearer if the repetitive wording was deleted and the provision cross-referenced as follows:

Each year, in accordance with Conditions 45 and 46, the consent holder shall:

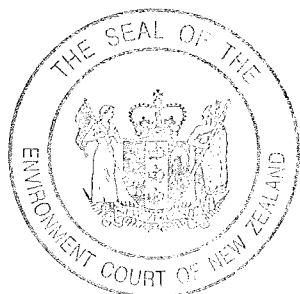
- (a) model the baseline nitrogen loss rate specified in Condition 36;
- (b) model the nitrogen loss for the previous year from 1 July to 30 June; and
- (c) calculate the four-year rolling average of nitrogen loss rate.

Conditions 39 - 44

[113] As noted, it is a purpose of the conditions to drive consent holder engagement with good management practices across the property. Conditions 39-44 set out detailed self-reporting requirements for the consent holder in the event the Overseer modelling in conditions 36-37 return exceedances. The complexity of nutrient budget conditions was the main reason for the court adjourning the hearing earlier this year. While the condition set has been substantially revised, this was not the case for the nutrient budget conditions, which remained largely unexplained. During the hearing, three experts endeavoured to assist the court by providing flow diagrams to demonstrate their operation. In the end Mr Doesburg, counsel for the Regional Council, provided a flow diagram that was comprehensive as to their intended operation.⁹⁸

[114] Dr Freeman expressed concern over the level of detailed operational control and reporting in the conditions.⁹⁹ He was not aware of other regions (including Canterbury, Waikato, and the Bay of Plenty) adopting this approach.¹⁰⁰ While not doubting the overall value of these measures, he considered they were better suited to non-consent documents such as FAQs.¹⁰¹

[115] Conditions 37(d) and 39-44 have the purpose of encouraging consent holder engagement with Overseer as a tool to aid understanding how changes in a farm system drive variation in N losses and thus to plan in advance for how the consent holder will remain compliant with the four-year rolling average when compared against the



⁹⁸ Exhibit Consent 3, 17 July 2020.

⁹⁹ Freeman, supplementary evidence, 12 June 2020 at [12]-[13].

¹⁰⁰ At [15].

¹⁰¹ Transcript (Freeman) at 155.

baseline.¹⁰² These conditions require a predictive model run to be undertaken each year by a certified nutrient management advisor (condition 45).

[116] We take no issue with the need to promote good management practice or the strong desirability that the consent holder engage with its requirements. Lack of engagement was evidenced at this hearing when Mr Wilkins could not explain to the court the Mahinga Kai section of the FEMP.¹⁰³

[117] That said, we were not presented evidence that the desired change will be promoted by requiring the consent holder to model predicted N loss for the upcoming year. The model is complex, and it has not been demonstrated that it is available in a form that may be readily used by a person who is not a certified nutrient management advisor.¹⁰⁴ Therefore, the approach risks being a tick-box exercise where the consent holder has either little input or little engagement with the model. The conditions impose costs on the consent holder for little or no demonstrated advantage. Indeed, the sheer complexity of the conditions alone mean they (and the consent holder) will likely be (come) frustrated. Given this, we do not approve them.

Auditing (conditions 46-50)

[118] The auditing conditions (conditions 46-50) provide the Regional Council the better approach for securing good management practice. Note: the term “nutrient budget” may need a definition in a condition or perhaps, in an Advice Note, as it appears for the first time in condition 38.

Issue: should the explanatory material be approved?

[119] The Water Quality, FEMP, PMP and Overseer Nutrient Budget conditions are introduced in italicised text. While counsel support the text, they do not address its purpose. An unusual method, the explanatory material is not even in the form of an advisory note.



¹⁰² Transcript (Maciaszek) at 205-206.

¹⁰³ Transcript (Wilkins) at 35-36.

¹⁰⁴ This appeal is illustrative of the model complexity. We heard expert evidence from two certified nutrient management advisors as to the model parameters for this property (the advisors largely coming to an agreement on parameters following expert witness conference facilitated by an Environment Commissioner).

[120] If the text is to be retained, counsel are to advise whether it is intended that any element thereof, or taken together the whole, is intended to be enforceable. If not, the parties should consider deleting it.

Issue: are the balance of conditions clear, certain and enforceable?

[121] While Wilkins has not appealed conditions 1-8 of the consent, if duration is extended from two to seven years, some of these conditions warrant further consideration.

Condition 4

[122] Condition 4(a) requires installation of a water meter, datalogger, and telemetry equipment. As currently worded, the condition reads as if the telemetry unit records the rate and volume of the take, whereas it is our understating this is the function of the datalogger. If we are correct, the condition should properly reflect the function of the equipment.

[123] Condition 4(g) requires the consent holder to record adequate data and provide it to the consent authority. The condition is uncertain. Saying that adequate data is required does not make clear the obligation upon the consent holder. To ensure compatibility with the Regional Council's time-series database, should the type of data required, and the frequency of the reporting period, be the subject matter of the condition?

Condition 6

[124] Condition 6 covers a plethora of matters. To improve clarity, should the subject matter of this condition be addressed in two separate conditions? The requirement for irrigation to not occur when soil moisture conditions are at or above field capacity and to not cause soil moisture content to rise above field capacity is important and, in our view, a standalone condition. Logically the requirement is related to the soil moisture monitoring, equipment in condition 7 should be placed immediately prior to that condition.

[125] Condition 6(c) concerns runoff of irrigation water and refers to the irrigated area, the site and off-site. Runoff can be a function of irrigation water but can also occur from rainwater, natural soil water, or river floodwater within the irrigation area. Is the condition made clearer if worded: "as a result of irrigation there is no ponding and/or runoff of water within or from the irrigation area"?



Issue: rates of abstraction*Conditions 1 and 3(a)*

[126] Condition 1 limits the groundwater take to 98 litres per second, 7,965 cubic metres per day and 499,830 cubic meters per year. These quantities and the rate have been agreed by the parties, with the quantities having been proportionally reduced from those originally granted after Wilkins surrendered a portion of its allocation after reducing the area of land to be irrigated.¹⁰⁵

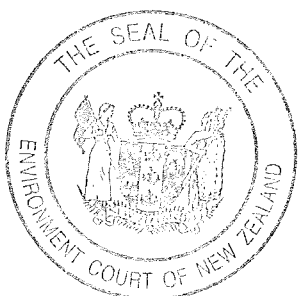
[127] Condition 3(a) sets a cut-off flow of 19 cubic metres per second in the Mataura River at Gore, at or below which Wilkins must restrict its take to 3,413 cubic metres per day. This has been agreed by the parties and allows Wilkins to continue abstracting water at the necessary rate of 98 litres per second so that its irrigation equipment can continue to function with the proper water pressure.¹⁰⁶

[128] The court agrees that the proposed changes to conditions 1 and 3(a) are suitable and notes that Wilkins has agreed to operate the take in accordance with condition 3(a) while its appeal of the cut off limits remains on hold.

Issue: should the permit be approved for a seven-year duration?

[129] Subject to conditions, the court will approve a seven year duration of consent.

[130] We will not extend the length of this decision by essaying policies relevant to duration under the operative Regional Water Plan or pSWLP.¹⁰⁷ Wilkins has not assisted itself by having an effective system in place through which the expiry of its water permits are flagged for renewal. Indeed, Wilkins applied for this new water permit some three years after its resource consent expired, during which time the company has been taking and using water without authorisation. On the other hand, predating the expiry of its water permit, Wilkins made substantial capital investment in its irrigation infrastructure and through the FEMP is prepared to make significant modifications to its farming system by adopting a range of good management practices.



¹⁰⁵ Joint memorandum of counsel, 7 February 2020 at [6].

¹⁰⁶ Wilkins, EIC, 12 June 2019 at [13].

¹⁰⁷ For the Operative Regional Water Plan policy 14A applies and, likewise, Policies 16 and 40 of the pSWLP.

[131] We find that it is desirable that the consent have an expiry date in common with the December 2025 date by which the Regional Council intends to have promulgated a plan change to introduce limits and targets for Freshwater Management Units.¹⁰⁸ [At least that was the Regional Council's intention under the National Policy Statement for Freshwater (2017 amendments)]. A duration of seven years achieves this outcome.

Issue: should the balance of the appeal should be adjourned for two-years?

[132] As noted above, prior to the hearing in February 2020, the parties reached partial agreement on some issues and sought leave to place the appeal on hold while the Council determines whether, in terms of water quantity, the Mataura River is over-allocated.¹⁰⁹ This determination will likely coincide with the notification of a future plan change to introduce a Freshwater Management Unit for the catchment, due September 2023 and to be made operative by December 2025, which the proposed seven year consent duration also respects.

[133] Given the Council's work-streams under the National Policy Statement for Freshwater Management (2017), we consider it appropriate to confirm the proposed seven-year consent duration and put the balance of the appeal on hold for a period of two years.

Directions

[134] I direct by **Friday 2 October 2020** counsel are to confer and file an agreed set of conditions and an updated draft FEMP incorporating the findings of this decision. This includes:

- (a) Produce a plan showing the land to be irrigated under this permit;¹¹⁰
- (b) deleting condition 9;¹¹¹
- (c) Wilkins is to confirm that it has ceased intensive winter grazing of cattle in Sharrow Flats and will not resume this activity unless or until it obtains a land use consent under the pSWLP. If so, consider deleting condition 10 in its entirety;¹¹²
- (d) deleting condition 13;¹¹³

¹⁰⁸ pSWLP above n 12, Introduction, Purpose of this Plan at 7, see also Policies 44-47.

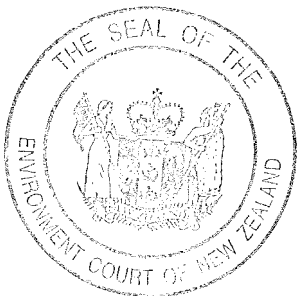
¹⁰⁹ Joint memorandum of counsel, 7 February 2020 at [4].

¹¹⁰ Above paragraph [37].

¹¹¹ Above paragraph [50].

¹¹² Above paragraph [57].

¹¹³ Above paragraph [75].



- (e) deleting condition 14;¹¹⁴
- (f) deleting condition 15;¹¹⁵
- (g) consider the wording of condition [xxx] set out at [84], is accepted with or without amendment or propose a condition defining the outcome to be achieved by the FEMP;
- (h) amend condition 19(h) to delete the reference to condition 9;¹¹⁶
- (i) if condition (xxx) is adopted, amend certifying clause in condition 20 to address the matters set out at [86];
- (j) amend condition 25 to address the matters set out at [88];
- (k) if condition (xxx) is adopted, consider whether condition 29 may be deleted.¹¹⁷ If condition 29 is retained, clarify the phrase "P losses to water from the irrigation area authorised by this consent".¹¹⁸ This clarification is sought generally as the phrasing appears in several conditions;
- (l) redraft condition 30 to omit quantitative language;¹¹⁹
- (m) the Regional Council is to comment on the appellant's proposed wording of 36(c);¹²⁰
- (n) the parties are to comment on court's proposed rewording of condition 37;¹²¹
- (o) consider whether the term "nutrient budget" is to be defined in a condition or an Advice Note;¹²²
- (p) if not a condition of consent nor intended to be enforceable, delete the italicised explanatory text throughout the condition set;¹²³ and
- (q) respond to the court's comments on conditions 1-8.¹²⁴

For the court:

J. E. Borthwick

J E Borthwick
Environment Judge

¹¹⁴ Above paragraph [64].

¹¹⁵ Above paragraph [75].

¹¹⁶ Above paragraph [87].

¹¹⁷ Above paragraph [99].

¹¹⁸ Above paragraph [100].

¹¹⁹ Above paragraph [101].

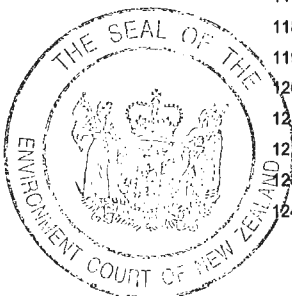
¹²⁰ Above paragraph [111].

¹²¹ Above paragraph [112].

¹²² Above paragraph [118].

¹²³ Above paragraph [120].

¹²⁴ Above paragraphs [121]-[125].



"A"

Reply Conditions

NOTES

The amendments to conditions 1 and 3 from the February draft consent order are shown as accepted.

This document uses the conditions as proposed in Ms Maciaszek's supplementary evidence dated 29 May 2020 as the base document.

The pre-hearing amendments agreed as between the parties are shown in blue with additions in underline and deletions in ~~strikethrough~~.

The amendments discussed in Reply are shown in red with additions in underline and deletions in ~~strikethrough~~.

All cross-referencing has been updated and is shown in purple as are all dates in 2020 that need to be revised given the passage of time.

The conditions that are opposed by the Appellant are shaded grey. If imposed, the edits requested to these conditions (as per legal submissions) are shown in green with additions in underline and deletions in ~~strikethrough~~.

1. The permit authorises the taking of groundwater at the location specified above. The rate of abstraction shall not exceed:
 - (a) 98 litres per second;
 - (b) 7,965 cubic metres per day; and
 - (c) 499,830 cubic metres per year.
2. Prior to the first exercise of this consent, the Consent Holder shall install a backflow prevention device or take other appropriate measures to ensure water and/or contaminants cannot return to the water source.
3.
 - (a) When flow in the Mataura River, as measured at Council's Mataura River at Gore flow monitoring site, is at or below 19 cubic metres per second the daily rate of abstraction authorised by this consent will be reduced to 3,413 cubic metres; and
 - (b) No abstraction shall occur when flow in the Mataura River, as measured at Council's Mataura River at Gore flow monitoring site, is at or below 17 cubic metres per second.
4.
 - (a) Prior to the first exercise of this consent, the Consent Holder shall install and maintain a water meter that records the water take within an error accuracy range of +/-5% over the meter's nominal flow range, and datalogger with at least 24 months data storage capacity and a telemetry unit to record the rate and volume of take, and the date and time this water was taken.
 - (b) Prior to the first exercise of this consent, the Consent Holder shall inform the Consent Authority in writing (escompliance@es.govt.nz) that the water meter, data logger and telemetry unit have been installed and tested for accuracy in accordance with the conditions of this consent. The consent holder shall provide a copy of the installation certificate to the Consent Authority within one month of installing the water meter and datalogger.
 - (c) The water meter shall be installed in a straight length of pipe, before any diversion of water occurs. The straight length of pipe shall be part of the pump outlet plumbing, easily accessible, have no fittings and obstructions in it. There shall be a straight length of pipe



on either side of the water meter, on the upstream side there shall be a distance that is 10 times the diameter of the pipe and on the downstream side there shall be a distance of 5 times the diameter of the pipe.

- (d) The water meter and datalogger shall remain in operation at all times during the exercise of this consent.
 - (e) All malfunctions of the water meter and/or datalogger during the exercise of this consent shall be reported to the Consent Authority within five working days of observation and appropriate repairs shall be performed within five working days. Once the malfunction has been remedied, a Water Measuring Device Verification Form completed with photographic evidence must be submitted to the Consent Authority within five working days of the completion of repairs.
 - (f)
 - (i) If a mechanical insert water meter is installed it shall be verified for accuracy each and every year from the first exercise of this consent.
 - (ii) Any electromagnetic or ultrasonic flow meter shall be verified for accuracy every five years from the first exercise of this consent.
 - (iii) Each verification shall be undertaken by a Consent Authority approved operator and a Water Measuring Device Verification Form shall be completed and supplied to the Consent Authority with receipts of service. These shall be supplied within five working days of the verification, and at any time upon request.
 - (g) The Consent Holder shall record adequate data to demonstrate compliance with **Condition 1**. Data from the datalogger shall be provided once daily to the Consent Authority by means of telemetry. The Consent Holder shall ensure data is compatible with the Consent Authority's time-series database.
5. Prior to the exercise of this consent, the Consent Holder shall notify the Consent Authority of the person who is in charge of the operation this consent. If the person in charge changes during the term of this consent, the Consent Holder shall notify the Consent Authority of the new operator no later than five working days after that person takes responsibility.
 6. Irrigation to land shall not occur when the moisture content of the soils is at or above field capacity, nor shall irrigation increase soil moisture above field capacity. The Consent Holder shall take all practicable steps to ensure that:
 - (a) there is no leakage from pipes and structures;
 - (b) the use of water is confined to targeted areas, as shown on the attached plan; and
 - (c) there is no run off of irrigation water in irrigated areas either on site or off site.
 7. The consent holder shall maintain the existing soil moisture monitoring tapes on the property, for the purpose of ensuring compliance with **Condition 6**.
 - (a) The consent holder shall advise the Consent Authority in writing (escompliance@es.govt.nz) of the location and depth of the soil moisture monitoring devices within one week of exercising this consent.



- (b) The soil moisture data shall be recorded at 30 minute intervals using an electronic datalogger system. This record shall be provided to the Consent Authority at least once every three months and upon request;
 - (c) Within three months of the first exercise of this consent, the consent holder shall, from the on-site monitoring record, determine the soil-moisture content that is equivalent to field capacity at the site and shall report this to the Consent Authority; and
 - (d) The soil moisture monitoring system shall be calibrated by a suitably qualified person at least once each year.
8. The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of this consent during the period 1 February to 30 September each year, or within two months of any enforcement action being taken by the Consent Authority in relation to the exercise of this consent, or on receiving monitoring results, for the purposes of:
- (a) adjusting the consented rate or volume of water under **Condition 1**, should monitoring under **Condition 4** or future changes in water use indicate that the consented rate or volume is not able to be fully utilised;
 - (b) determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage;
 - (c) ensuring the conditions of this consent are consistent with any National Environmental Standards Regulations, relevant plans and/or the Environment Southland Regional Policy Statement, which may include the adjustment of minimum flow cut-offs to resolve over-allocation in the Maitara River under the provisions of the proposed Southland Water and Land Plan; or
 - (d) adjusting or altering the method of water take data recording and transmission.

Water Quality

The following sections relate to the actual or potential effects of the use of water authorised by this consent on water quality, including effects resulting from the intensified production enabled by irrigation. The conditions collectively ensure that practices are implemented to reduce contaminant losses to water, which will contribute to an improvement in water quality. By taking steps to improve water quality, the farm operation will contribute to an improvement in the health and wellbeing of the Maitara River, the wider environment, and people.

Specific Mitigations

The following conditions specify key practices that are to be used on the irrigation area authorised by this consent to ensure that water quality is improved by reducing contaminant losses of nitrogen, phosphorus, sediment, and E. coli to water. The practices are particularly targeted at nitrogen loss via deep drainage, as that is the key contaminant pathway for the irrigation area.

9. ~~Following intensive winter grazing in any paddock, the consent holder shall sow a cold-germinating variety of catch-crop for the purpose of uptaking excess nitrogen in the soil. The catch-crop shall be sown at the earliest opportunity based on paddock suitable conditions for machinery to access the paddock following intensive winter grazing. The consent holder shall minimise the time the ground is spent fallow (exposed soil) following intensive winter grazing by sowing crop or pasture at the earliest opportunity based on suitable soil conditions. The~~



selected crop or pasture must be suitable to germinate then actively grow to take up residual plant available soil nitrogen and, in doing so, assist in minimising leaching losses from the bottom of the root zone.

10. When undertaking intensive winter grazing of cattle ~~and sheep~~, the consent holder shall backfence to prevent stock from entering areas already grazed.

11. Applications of nitrogen fertiliser shall be limited to:

- (a) 50kgN/ha for each application of fertiliser to pasture;
- (b) No nitrogen fertiliser shall be applied when the 10cm soil temperature at 9am is less than 6°C; and
- (c) Nitrogen loadings consistent with best practice industry guidance for specific crop types other than pasture, as identified in the Farm Environmental Management Plan.
- ~~(d) Applications of fertiliser shall be made during optimum weather conditions with appropriate soil moisture conditions. Application during suitable weather and soil moisture conditions.~~

12. Applications of phosphate fertiliser shall be limited to:

- (a) 100kgP/ha in any one application;
- (b) A slow-release form of fertiliser, except when there is a low risk of run-off and:
 - i. A rapid plant response is required; and/or
 - ii. The soil P levels are required to be increased rapidly; and/or
 - iii. The plants are actively growing.
- (c) Applications of fertiliser which do not increase soil P above plant optimums, as demonstrated by soil testing.
- ~~(d) Applications of fertiliser shall be made during optimum weather conditions with appropriate soil moisture levels. Application during suitable weather and soil moisture conditions.~~

~~13. No fertiliser shall be discharged within the ephemeral waterway.~~

14. The consent holder shall undertake soil testing of each paddock at least once each year from ~~1 July to 30 June~~ maintain a soil testing programme to ensure that fertiliser applications are continue to be appropriately targeted. The programme shall involve either:

- (a) Continuance of the existing programme that involves:
 - i. Grid soil sampling once every 5 years, which includes taking 10 soil samples per hectare once every 5 years to create prescriptive maps indicating soil fertility which can be used to determine precise fertilizer requirements and for variable rate spreading of fertiliser;
 - ii. In the other years, taking representative soil samples from at least one paddock per management block once every 2 years to monitor trends in soil fertility. One representative soil sample shall be taken for each area of up to 55ha; or
- (b) A revised programme prepared in response to the results from previous sampling, or to changes to best practice for soil management or improvements in technology that has been certified in writing by a suitably qualified person that it provides equivalent or better information to enable the targeted application of fertiliser. A copy of the certification shall be provided to the Southland Regional Council on request.

*Advice note: For the purpose of **Condition 14**:*



- *“representative soil sample” means between 10-15 soil cores collected along a transect of a paddock to provide a representative sample of a paddock that itself is a good representation of the management block; and*
- *“management block” is an area (one or more paddocks) with similar soil type and topography that is managed similarly. At the time the consent was granted, the land to be irrigated was in two management blocks – Sharrow Flats and the Gun Block.*

15. The consent holder shall:

- (a) ~~exclude all stock from the ephemeral waterway when intensive winter grazing; and~~
- (b) exclude all stock from the ~~old~~ ephemeral ~~waterway stream~~ when there is flowing or ponded water present.

16. The consent holder must implement and maintain effective measures to reduce phosphorus losses to water compared to estimated losses that were occurring prior to the granting of this consent in accordance with ~~Conditions 28-34~~ below.

17. The consent holder must implement and maintain good farming management practices to minimise *E. coli* and sediment losses to water in accordance with ~~Conditions 18-34~~ below.

Farm Environmental Management Plan

The following conditions relate to the Farm Environmental Management Plan. Their purpose is to ensure that good management practices are identified for the farm system and implemented, along with the specific mitigations in the section above, to improve land use and water management practices. This will improve water quality by reducing the risk of nitrogen, phosphorus, sediment, and *E. coli* losses to water, and consequently contribute to improving the health and wellbeing of the Maitara River, the wider environment, and people.

18. The consent holder shall maintain and implement a Farm Environmental Management Plan (FEMP) prepared in accordance with Appendix N of the proposed Southland Water and Land Plan or the Farm Environmental Management Plan requirements of any subsequent version of the Plan to demonstrate improvement in land use and water management practices.

19. In addition to the requirements of Appendix N, the FEMP shall include:

- a) A description of the good management practices that will be used to ensure the use of water for irrigation is as efficient and effective as practicable for the specific infrastructure;
- ~~b) Mitigation measures identified in accordance with Conditions 39, 40, 42 or 43;~~
- c) A description of ~~when and~~ how stock are excluded from the ~~old~~ ephemeral stream. If temporary fencing is to be used, the FEMP will describe how the temporary fencing will be set up;
- d) A Phosphorus Mitigation Plan (as detailed in ~~Conditions 29-35~~);
- e) A Winter Grazing Plan (as detailed in ~~Condition 25~~) that includes an explanation of how the consent holder will identify when the crop or pasture required by ~~Condition 9 is able to be sown~~;
- f) An Irrigation Management Plan (as detailed in ~~Condition 26~~);
- g) A Cultivation Management Plan, with the purpose of explaining cultivation practices to staff, including cultivation practices around the ~~old~~ ephemeral ~~waterway stream~~ and any other critical source areas including wet areas and gateways;

Commented [BC1]: Consequential change if conditions deleted as per questioning from Court.

Commented [BC2]: If condition 9 imposed.



- h) ~~An explanation as to how the consent holder will identify when a catch crop is able to be sown in accordance with Condition 9; Details of any crop or pasture to be sown in accordance with Condition 9, including the time it is expected to be sown and demonstration that the selected variety is suitable to germinate and actively grow to take up residual plant available soil nitrogen;~~
- i) An explanation as to how the consent holder will identify when soil temperature, soil moisture, and weather conditions are appropriate to apply fertiliser; and
- j) Any other measures which mitigate the nutrient losses resulting from irrigation authorised by this consent.

Commented [BC3]: If condition 9 is imposed.

20. The FEMP for the year ending 30 June 2021 shall be certified by an independent person who is a Certified Nutrient Management Advisor (CNMA) that it is consistent with the conditions of this consent and with Appendix N of the pSWLP. The consent holder shall submit its certified FEMP to the Consent Authority by **30 September 2020**.

21. The FEMP ~~can be modified at any time but~~ must be reviewed ~~by the consent holder~~ at least once each year from 1 July to 30 June ~~by the consent holder and can be modified at any time. The consent holder shall provide the current version to the Consent Authority by 31 May each year, showing the changes that have been made since the previous version was provided. As part of the review the consent holder shall:~~

Advice note: Any updated FEMP will be assessed by the Consent Authority to ensure that it is consistent with the conditions of this consent and with Appendix N of the proposed Southland Water and Land Plan (or the Farm Environmental Management Plan requirements of any subsequent version of the Plan).

22. Each year, the review of the FEMP shall include the recording of:

- a) ~~The best practice industry guidelines for nitrogen loadings to be applied to any crops sown;~~
- b) ~~The annual nitrogen and phosphorus loadings to be applied to pasture based on soil testing for each paddock;~~
- a) Record:
 - i) Each date that fertiliser ~~is was~~ applied, along with the type ~~and total~~ **tonnage** of fertiliser applied, the soil temperature measured and a description of the soil moisture conditions and weather conditions at the time of application; and
 - ii) The date or dates that any ~~catch~~ crops ~~or pasture~~ were sown in accordance with **Condition 9**.

Commented [BC4]: If condition 9 imposed.

23. Each year, the review of the FEMP shall include:

- b) ~~Consideration as to~~ whether it is feasible to **implement new methods to further reduce N losses to water, including methods such as:**
 - i) use gibberellic acid as a replacement or partial replacement for N fertiliser ~~to reduce N losses to water;~~
 - ii) use a slow-release form of N fertiliser;
 - iii) include plantain within any pasture swards to be sown ~~to reduce N losses to water;~~ and
 - iv) Source and use a low protein form of feed, such as maize silage, ~~to reduce N losses to water~~ when importing supplementary feed; and
- c) Where the good management practices listed in **Condition 23(a) 21(b)** are not feasible, ~~the consent holder will~~ record the reasons why not; ~~and~~



- d) Where one or more of the good management practices listed in **Condition 23(a)** **21(b)** are identified as being feasible, ~~the consent holder shall~~ include a plan in the updated FEMP to implement the practice(s). For clarity, the implementation may be on a trial basis and does not have to be implemented the same year that it is identified as being feasible;
- e) Record the recommendations for improvement, if any, in any audit report prepared in accordance with **Conditions 46 and 48** and:
 - i) If the improvements are not feasible, record the reasons why not; or
 - ii) If the improvements are feasible, shall include a plan to implement the improvements.
- f) Detail:
 - i) The annual nitrogen and phosphorus loadings to be applied to pasture and any crops sown;
 - ii) How the proposed loadings and application align with good management practice as outlined within the "Industry-agreed Good Management Practices relating to Water Quality" 2015 or any updated or replacement industry guidelines.

24. The consent holder shall provide the current version to the Consent Authority by 31 May each year, showing the changes that have been made since the previous version was provided.

Advice note: Any updated FEMP will be assessed by the Consent Authority to ensure that it is consistent with the conditions of this consent and with Appendix N of the proposed Southland Water and Land Plan (or the Farm Environmental Management Plan requirements of any subsequent version of the Plan).

25. The Winter Grazing Plan required by **Condition 19(e)** shall provide clear and concise direction to staff on undertaking winter grazing and shall include (but not be limited to):
- a) A map of the paddocks to be grazed over winter, including identification of any slopes, critical source areas, the soil types and their vulnerabilities, and mapping the direction of the cultivation lines to minimise soil movement on slopes;
 - b) Ensuring that the cultivation complies with either Rule 25(a) or Rule 25(b) of the proposed Southland Water and Land Plan (or any subsequent version of the plan), or identifying that consent for cultivation is required;
 - c) Consideration of the use of minimum tillage techniques, in accordance with good practice;
 - d) A description of how and when baleage will be placed in the winter grazing paddock, to ensure that soil compaction by machinery and camping areas by animals are minimised;
 - e) A description of how the crop will be fed off for the duration of winter, including aerial photos or diagrams with arrows to show the grazing directions; and
 - f) Identification of good management practices specific to winter grazing which minimise the losses of nitrogen via deep drainage. This includes the backfencing of cattle ~~and sheep~~ to distribute dung and urine more evenly which is required by **Condition 10**.
26. The Irrigation Management Plan required by **Condition 19(f)** shall provide clear and concise direction on the operation of the irrigation system for the purpose of informing staff and shall include (but not be limited to):



- (a) Decision-making on starting or stopping irrigation, including:
 - i. Checking the flow of the Mataura River at Environment Southland's Gore flow monitoring site, in accordance with **Condition 3**; and
 - ii. Checking that soil moisture conditions are appropriate, in accordance with **Conditions 6 and 7**;
- (b) Use of the soil moisture technology;
- (c) Use of the water metering and telemetry systems;
- (d) Operation of the automatic shut-offs on irrigators;
- (e) The undertaking of bucket tests **at least once every three (3) years** to analyse distribution uniformity and application depths;
- (f) Maintenance of the irrigation system; and
- (g) Emergency procedures.

~~27. Where an audit is carried out and makes recommendations for improvement in accordance with **Conditions 46 and 48**, the FEMP shall include consideration of the feasibility of implementing the improvements, and either:~~

- ~~(a) If the improvements are not feasible, then the consent holder shall record the reasons why not; or~~
- ~~(b) If the improvements are feasible, then the consent holder shall include a plan to implement the improvements.~~

28. The consent holder must operate in accordance with the FEMP at all times. Where there is inconsistency between the FEMP and the conditions of this consent, the conditions of this consent shall prevail.

Phosphorus Mitigation Plan

The following conditions relate to the Phosphorus Mitigation Plan. The purpose of the plan is to identify and implement methods to reduce phosphorus losses to water and improve water quality. These same methods are also expected to reduce losses of sediment and E. coli to water.

- 29. A Phosphorus Mitigation Plan (PMP) shall be developed to identify and implement effective measures to reduce phosphorus losses to water from the irrigation area authorised by this consent compared to estimated losses that were occurring prior to the granting of this consent. The PMP shall include new phosphorus loss mitigation measures to **significantly** reduce phosphorus loss to water from irrigation area compared to estimated losses that have been occurring, using techniques that have been demonstrated by New Zealand based research to be **highly likely to be** effective.
- 30. The PMP shall be submitted before **1 July 2020** to an independent person who is a Certified Nutrient Management Advisor (CNMA), for the purpose of obtaining from them in writing and providing to the Consent Authority by **30 September 2020**, their professional opinion on:
 - a) Whether the phosphorus mitigation measures proposed are recognised as being generally effective methods to reduce phosphorus losses to water;
 - b) Whether the phosphorus mitigation measures proposed are considered to be effective for the specific property as proposed; and
 - c) Whether those measures are likely to result in a long-term annual average reduction in phosphorus loss to water from the irrigation area compared to the pre-mitigation situation.
- 31. The phosphorus loss mitigation measures identified in the PMP shall be implemented prior to irrigation commencing in the **2020/21** season. The consent holder shall provide written



confirmation to the Consent Authority within two weeks of completion of the measures and prior to irrigation commencing.

32. Between 1 April and 30 September 2021, the consent holder shall provide a report to the Consent Authority from an independent person who is a CNMA describing:
- a) Whether the phosphorus mitigation measures in the PMP have been implemented in accordance with the PMP and FEMP; and
 - b) Whether the phosphorus mitigation measures are likely to result in a long-term annual average reduction in phosphorus loss to water from the irrigation area compared to the pre-mitigation situation.
33. In the event that a CNMA identifies, in the work commissioned to meet Condition 30, 32 or 34, that the mitigation measures have not been implemented and maintained or have not been as effective as anticipated, the consent holder shall:
- a) Immediately notify the Consent Authority;
 - b) Within three months of the notification in Condition 32(a), provide updated phosphorus mitigation measures to be implemented which have been endorsed by a CNMA as including effective measures to reduce phosphorus losses to water compared to estimated losses that were occurring prior to the granting of this consent.
34. Within one year of providing the updated phosphorus mitigation measures required by Condition 33(b), the consent holder shall provide a report to the Consent Authority from an independent person who is a CNMA describing:
- a) Whether the updated phosphorus mitigation measures have been implemented; and
 - b) Whether the phosphorus mitigation measures are likely to have been successful in mitigating phosphorus loss to water.
35. Upon completion of the mitigation measures detailed in the Phosphorus Mitigation Plan, the consent holder shall ensure the mitigations are properly maintained, continue to function, and are not removed or altered for the duration of this consent, except as recommended by a CNMA in accordance with Conditions 32, 33, 34, or 48.

Overseer nutrient budgets

The purpose of the following conditions is to monitor the nitrogen losses from the irrigated farm system provide additional certainty that the farm's operation is improving water quality by reducing its nitrogen losses to water. The conditions set a baseline nitrogen loss limit which cannot be exceeded the four-year rolling average must remain below, to provide additional certainty that the farm's operation is improving water quality by reducing its nitrogen losses to water. Nitrogen loss to water via deep drainage is the primary risk to water quality from the irrigation area. The conditions also require assessment and consideration of the farming system and predicted outputs, to assist planning for future years and provide further certainty that the limit will be met.

36. The consent holder must ensure that the estimated four-year rolling average nitrogen losses to water from the irrigation area authorised by this consent are maintained below the baseline nitrogen loss rate to provide additional certainty that the farm's operation is improving water quality by reducing its nitrogen losses to water, as determined by the average losses within the irrigation area as a whole from the nutrient budgets for the years



~~ending 30 June 2016, 2017, 2018 and 2019. The four-year rolling average is defined as the average of the most recent four consecutive years' nitrogen losses from the irrigation area.~~

- a) The baseline nitrogen loss rate shall be determined each and every year of the consent using the current Overseer FM engine version for the years ending 30 June 2016, 2017, 2018, and 2019.
- b) The baseline nitrogen loss rate shall be determined by calculating the average nitrogen loss from the irrigation area authorised by this consent over the four years ending 30 June 2016, 2017, 2018, and 2019. Using OverseerFM version 6.3.2 for the years ending 30 June 2016, 2017, 2018, and 2019 the baseline nitrogen loss rate is 5,551 kg.
- ~~c) The four-year rolling average is determined by calculating the average nitrogen loss from the irrigation area authorised by this consent over the most recent four consecutive years.~~

37. Each and every year for the duration of this consent, using the current version of OverseerFM and in accordance with the generally accepted best practice modelling and the current User Guide, the consent holder shall:

- a) ~~Re-m~~Model the baseline nitrogen loss rate specified in **Condition 36** in the current engine version of OverseerFM in accordance with **Condition 46**;
- b) Model the nitrogen loss for the previous year from 1 July to 30 June; and
- c) Calculate the four-year rolling average of nitrogen loss rate; and
- ~~d) Model the predicted nitrogen loss rate for the upcoming year from 1 July to 30 June inclusive.~~

38. A report must be provided to the Consent Authority by 30 September each year summarising the results of the OverseerFM nitrogen loss modelling required by **Condition 37**. The report must include:

- a) A review of the OverseerFM input data by a person who is a Certified Nutrient Management Advisor (CNMA) to certify that the annual nutrient budget reflects the farming system;
- b) An explanation of any differences between the most recent year's nutrient budget and any nutrient budgets which have previously been prepared in accordance with this consent (including the baseline nitrogen loss rate);
- c) A comparison of the four-year rolling average nitrogen loss rate with the baseline **nitrogen** loss rate; and
- d) The names and summaries of the relevant qualifications and experience of the individuals who prepared and reviewed the nutrient budget.

~~39. If in any year the four-year rolling average nitrogen loss rate as modelled in accordance with **Condition 37(c)** exceeds the baseline **nitrogen** loss rate set under **Condition 36** the consent holder must, by 30 November of that year, prepare a report for the Consent Authority that details:~~

- ~~a) Any reasons or causes of the exceedance; and~~
- ~~b) The measures that will be taken to ensure that nitrogen losses are reduced to ensure that the rolling four-year average remains below the baseline **nitrogen** loss rate.~~



40. The report required by **Condition 39** must include:
- a) A detailed description of the measures to be taken; and
 - b) For any mitigations proposed, a detailed mitigation plan (taking into account nitrogen loss pathways) that identifies:
 - i) The mitigations to be undertaken;
 - ii) The physical works required to complete the mitigations;
 - iii) The proposed implementation timeframes for each mitigation;
 - iv) The operation of the mitigation; and
 - v) The potential effectiveness of each mitigation.
41. Upon completion of the mitigation measures identified in the report required by **Conditions 39 and 40** the consent holder must notify the Consent Authority in writing that the mitigation measures have been put into effect and provide further relevant detail (including the location and photographs) upon request.
- Advice note: Conditions 39, 40 and 41 impose a self-reporting obligation on the consent holder for any breach of Condition 36 but do not fetter the Council's ability to take enforcement action.*
42. If in any year the predicted nitrogen loss rate for the coming year required by **Condition 37(d)** is above the baseline nitrogen loss rate in **Condition 36** by more than 10%, the consent holder must, within two months of providing the report required by **Condition 38** to the Consent Authority, prepare a report for the Consent Authority that details:
- a) The reasons or causes of the predicted nitrogen loss rate (for example, the crop rotation cycle);
 - b) The four year rolling average that would result if the predicted nitrogen losses occurred (in other words, the average of the N loss from the previous three years and the predicted N loss); and
 - c) The activities occurring within the irrigation area authorised by this consent in the prior and following years to ensure that the four year rolling average remains below the baseline nitrogen loss rate.
43. If in any year the nitrogen loss for the previous year (prepared in accordance with **Condition 37(b)**) exceeds the predicted nitrogen loss rate for that same year (prepared in accordance with **Condition 37(d)** the previous year), the consent holder shall prepare a report for the Consent Authority that details:
- a) The reasons or causes of the exceedance; and
 - b) Any changes that need to be made to activities occurring within the irrigation area authorised by this consent the following year to ensure that the four year rolling average remains below the baseline nitrogen loss rate.
44. The measures, mitigations, and timeframes identified in accordance with **Conditions 39, 40, 42 or 43** must be incorporated into the Farm Environmental Management Plan required by **Conditions 18-28**.
45. All OverseerFM modelling and reviews required by this consent must be undertaken by a person who is a Certified Nutrient Management Advisor (CNMA) under the Nutrient Management Adviser Certification Programme (NMACP). All modelling shall be undertaken in accordance with generally accepted best practice, including the most recent version of the OverseerFM User Guide.



46. All OverseerFM modelling must be undertaken in the most recent "engine" version of OverseerFM. When modelling is being prepared under a new "engine" version of OverseerFM, the consent holder shall:
- a) Load each of the four budgets for the years ending 30 June 2016, 2017, 2018 and 2019 into the new version of OverseerFM; and
 - i) Identify the nitrogen loss from each year's scenario for the irrigation area authorised by this consent; and
 - ii) Calculate the average of the nitrogen loss across the four re-modelled budgets to form the updated baseline **nitrogen** loss rate; and
 - iii) Replace the baseline loss rate previously used with the re-modelled baseline **nitrogen** loss rate calculated under this condition; and
 - b) Load each of the budgets for the years forming the relevant four-year rolling average into the new version of OverseerFM; and
 - i) Identify the nitrogen loss from each year's scenario for the irrigation area authorised by this consent; and
 - ii) Calculate the four-year rolling average for use with the new "engine" version of OverseerFM; and
 - iii) Replace the four-year rolling average previously used with the re-modelled four-year rolling average calculated under this condition; and
 - c) Detail the changes in modelled nitrogen losses between the previous and new versions of OverseerFM when providing the annual modelling reports in accordance with **Condition 38**.

Auditing

The following conditions provide an additional method to ensure that the specific practices required by this consent and good management practices identified in the Farm Environmental Management Plan to be implemented in the farm system are effective in practice. This allows further certainty that contaminant losses are being reduced as expected, and contributing to an improvement in water quality as a result.

46. The Consent Authority may require the Consent Holder to have the measures required by this consent, including the FEMP, independently audited by a person who is a Certified Nutrient Management Advisor or Farm Environmental Plan Auditor or a Suitably Qualified Person who has demonstrated an equivalent level of expertise.
47. The audit shall include a site visit and shall assess the **performance implementation and likely effectiveness** of:
- a. The measures required by **Conditions 2, 6, and 9-15** of this consent;
 - b. The mitigation measures and good management practices in the FEMP as required by **Conditions 18-28** of this consent, including those in the Winter Grazing Plan and Phosphorus Mitigation Plan; and
 - c. Any additional mitigation measures identified by **Condition 33** of this consent.
48. The auditor must ~~determine the level of confidence of each measure's performance provide his or her professional judgement on the likely effectiveness of each measure~~ in reducing the risk of contaminant loss to water. ~~This shall be done with reference to a five level scale: very poor, poor, moderate, high or very high. Where there is a low level of confidence that a measure is reducing the risk of contaminant loss to water, the auditor concludes that the likely effectiveness is poor or very poor, or where improvements could be made to increase the effectiveness of the measure, the auditor shall provide recommendations for improvement.~~



49. The audit report shall be provided to the Consent Authority within three months of the date of the Consent Authority issuing a requirement to undertake the audit.
50. Where the audit makes recommendations for improvement in accordance with **Condition 48**, the consent holder shall address the recommendations in the FEMP in accordance with **Condition 21(e)**. An updated copy of the FEMP shall be provided to the Consent Authority within two months of the date of the audit report.

Summary of key dates in the conditions [to be updated once conditions are finalised]

Yearly dates to complete actions		
Date each year	Condition number	Description
By 30 June	14	Undertake soil testing of each paddock.
By 31 May	24	Provide current version of FEMP to Consent Authority.
By 30 September	38	Summarise results of OverseerFM nitrogen loss modelling.
By 30 November	39	Prepare report for Consent Authority if four-year rolling average nitrogen loss rate as modelled in accordance with condition 36(c) exceeds the baseline loss rate set under condition 35.
Within 2 months of providing report under condition 38	42	Prepare report for Consent Authority if predicted nitrogen loss rate for the coming year is above the baseline loss rate in condition 35 by more than 10%.

Specific dates to complete actions		
Date	Condition number	Description
30 September 2020	20	Submit certified Farm Environmental Management Plan to Consent Authority.
1 July 2020	30	Submit certified Phosphorus Mitigation Plan to Certified Nutrient Management Advisor.
30 September 2020	30	Submit certified Phosphorus Mitigation Plan to Consent Authority.
Within two weeks of phosphorus loss mitigation measures being completed	31	Provide written confirmation to Consent Authority within two weeks of completion of the phosphorus loss mitigation measures.
30 September 2021	32	Provide report to Consent Authority from Certified Nutrient



Specific dates to complete actions		
Date	Condition number	Description
		Management Advisor describing phosphorus mitigation measures.
Within one year of providing the updated phosphorus mitigation measures required by condition 31(b)	34	Provide report to Consent Authority from Certified Nutrient Management Advisor describing implementation of phosphorus mitigation measures.

