BEFORE THE INDEPENDENT COMMISSIONERS

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF the Proposed Waikato Regional Plan Change 1

STATEMENT OF EVIDENCE OF ROBERT VAN DUIVENBODEN ON BEHALF OF LANDCORP FARMING LIMITED

Submitter 83313

April 2019

INTRODUCTION

1. My name is Robert van Duivenboden. I am the Environment Manager (Taupō) for Landcorp Farming Limited (Pāmu), a role I have held for 3.5 years. I present non-expert evidence on aspects of Pāmu's submission dated 8 March 2017.

2. I hold a Master of Science from Massey University. Prior to my current role, I have held positions within the E.S.R (a Crown Research Institute), as a Water Quality Scientist with a regional council, a water quality planner with the UK Environment Agency and I have more than ten years' experience in discharge consent evaluations and assessments within RMA processes nationally.

3. I confirm that I have authority to give evidence on behalf of Pāmu. This evidence relates to the topics of the termed "Block 1" hearing issues.

BACKGROUND

4. Pāmu is a State Owned Enterprise (SOE), owned by the NZ Government. Pāmu employs about 700 people on over 100 farms around New Zealand. Twenty seven of those farms are within the Waikato and Waipa catchments.

5. Pāmu is a sheep, beef cattle, dairy and deer farmer, selling to most of New Zealand's largest national food processors along with smaller regional producers. Pāmu also markets premium products under the Pāmu brand around the world. Pāmu's strategy is to:

    (a) Continue to be the best farmers we can be which includes:

        (i) High standards of animals for welfare and farming performance; and

        (ii) Being an effective steward of the natural resources we farm and reducing the impact on waterways:

    (b) Embrace technology, science and proven systems to drive on-farm performance;

    (c) Develop and take to scale unique high margin food and fibre with a provenance story and lower environmental footprint (such as sheep milk) to niche markets.

6. Pāmu is one of few large scale entities with significant livestock (beef, sheep and deer) (7 farms) and dairy (bovine and ovine) operations (20 farms) in the catchment.

7. This spread and scale of commercial interests means Pāmu will be subject to the cross-sector implications and effects of Proposed Waikato Regional Plan Change 1 and Variation 1 ("**PC1**"), as well as a party to the benefits as a member of the catchment community.

8. PC1 was notified on 26 October 2016. Pāmu made a submission on 8 March 2017 and a further submission on 17 September 2018.

9. Pāmu supports the effective and efficient attainment of the Vision and Strategy for the awa (water quality improvement), however it believes that there are significant issues with the proposed objectives, and thus the means and methods PC1 proposes for achieving the Vision & Strategy.

SCOPE OF EVIDENCE

10. My evidence will address the following issues:

    (a) The use of the Overseer model in regulation

    (b) The proposed Nitrogen Reference Point approach

    (c) Omitted pollution sources and Point sources

    (d) Farm Environment Plans

    (e) Riparian fencing

    (f) Definition of Enterprise

    (g) Direct discharges of dairy effluent to waterways; and

    (h) Policy 6: Restricting Land Use change.

11. Pāmu anticipates providing evidence at the Block 2 and 3 hearings. The purpose of this non-expert evidence during Block 1 is to raise, at a high level, what Pāmu believes are critical issues that will need to be considered in more detail in subsequent Blocks, but are critical to PC1 and the Block 1 hearing. In particular, whether PC1 in light of these issues and as presently drafted, is the right approach and methodology for meeting the Vision & Strategy.

12. In making this submission, Pāmu believes it is important that while the issues of concern are addressed in PC1, progress continues to made in improving farm environmental performance by encouraging improved practice and use of technologies.

EXECUTIVE SUMMARY

13. Pāmu supports the Vision & Strategy and seeks a plan change which promotes sustainable management while being fair and equitable (including across generations) to all those who live and work in the catchment. Pāmu believes that to be successful, the management of the Waikato and Waipa rivers under Plan Change 1 must:

    (a) Be enduring, effective; and support community wishes and Iwi aspirations for the river.

    (b) Take a holistic and integrated approach to the entire catchment and all factors contributing to the current condition and future of the catchment; and

    (c) Minimise disruption to businesses and communities by ensuring outcomes are robustly identified, justified and applied.

14. Pāmu submits that:

    (a) Overseer (and potentially other models) in its present form is unsuitable for providing the basis for the regulatory approach proposed in PC1. Pāmu's extensive experience with on-farm application of the tool within the catchment, together with the findings of PCE Report (Dec 2018), affirms Overseer is simply too uncertain for farm (enterprise) specific and refined limit setting approaches and, as such, it is unlikely to efficiently achieve the desired objectives and policies without considerable improvement.

    (b) The basis in PC1 for setting Nitrogen Reference Points is problematic and may fail to meet the objectives of PC1.

    (c) A robust and integrated plan necessitates consideration of all significant discharge sources. The different types of discharges (diffuse and direct, rural and urban) cannot be easily separated in terms of water quality impact and resolution, as well as when determining impacts on social, cultural and economic wellbeing.

(d) Farm Environment Plans are an effective mechanism for improved on-farm performance.

(e) Further consideration needs to be given to riparian planting and stock water exclusion rules.

(f) Clarity is required on key terms used in the plan (such as “Enterprise”) to ensure certainty for all affected.

(g) Better outcomes will be achieved by forcing the tail of poor practice to lift by prohibiting the direct discharge of dairy effluent into waterways.

(h) Policy 6 can only be effective if there are adequate means to accurately measure all the contaminants of concern (Phosphate, Sediment, Microbes and Nitrogen).

OVERSEER IN REGULATORY APPROACHES

15. PC1 is based on the use of Overseer to set the appropriate regulatory approach for nitrogen under the plan. In addition, it then attempts to accommodate other agri-models in some sections and rules of the plan. There are significant challenges and issues in using Overseer as the basis for regulation.

16. Pāmu's position is that the current science behind Overseer, and the uncertainties and inconsistencies with its use, raise significant issues with its application as an allocation tool within PC1. Claims that the model is “just what NZ uses” and “the best we’ve got” need to be carefully considered in determining a regulatory regime considering the implications the regime will have on all those affected.

17. Pāmu acknowledges the challenges in nutrient leaching measurement and supports Overseer’s use for risk based assessments (e.g. identifying and understanding ‘hot-spots’ and high risk areas). However, using Overseer (without addressing its deficiencies) as the basis for such significant reform with far-reaching financial and other implications for land owners and land managers is questionable. Pāmu would like to see confirmation that the necessary improvements can be made to Overseer in a timely manner or is even the correct tool, to be used as the basis to meet PC1’s objectives. The challenges of Overseer and alternative options and solutions to its use will be canvassed at the Block 2 and 3 hearings. In the meantime Pāmu

considers that the principle of use of Overseer must be carefully considered in the context of Block 1.

18. The notified PC1 proposes, and the S.42A report currently supports the use of the Overseer model to:

    (a) derive an NRP,

    (b) later assess progress toward NRP attainment, and

    (c) be used in compliance matters.

19. The promulgation of a Plan, based on Overseer-informed "grand-parenting", may lead to unfair and inequitable (including across generations) outcomes based on non-robust (or at least unreliable and constantly subject to change) methods. In particular, there are problems associated with Overseer errors being compounded into subsequent models, model cascades and water quality/economic models significantly affecting the validity and robustness of policy decisions. Moreover, "grand-parenting" penalises those with low NRPs (including many who are exemplars in sustainable farming practices) and rewards those with high NRPs.

20. The issues of using Overseer in regulation and as an allocation tool were assessed by the Parliamentary Commissioner for the Environment in his 2018 report (PCE Report Dec 2018) on the matter. Importantly, he noted (page 64) that: ***"Ultimately, this means Overseer's uncertainty cannot be fully acknowledged, quantified and carried through into risk analysis when councils are developing plans***." The PCE went on to recommend a raft of fundamental changes to Overseer before it would be suitable for use in a regulatory regime, as PC1 intends. The Panel must take these into consideration before determining whether Overseer is an appropriate allocation tool.

21. In addition, Pāmu wishes to draw the Panel's attention to a paper by Etheridge *et al.*, which highlights the uncertainty in using Overseer as the basis for regulation (in this case, in Canterbury). [1]

[1] Etheridge, Z., Fietje L., Metherell A., Lilburne L., Mojsilovich O., Robson M., Steel K., Hanson M. 2018. Collaborative expert judgement analysis of uncertainty associated with catchment-scale nitrogen load modelling with OVERSEER®. In: *Farm environmental planning – Science, policy and practice*. (Eds L. D. Currie and C. L. Christensen). http://flrc.massey.ac.nz/publications.html. Occasional Report No. 31. Fertilizer and Lime Research Centre, Massey University, Palmerston North, New Zealand. 14 pages.

22. Of particular relevance to the Panel's decision on the use of Overseer model and all policies stemming from it, is Etheridge's Table 1 (below) and conclusion that they were 90% confident the true leaching fell somewhere between the 5th and 95th percentile of the Overseer output figure.

Table 1 Summary N loss uncertainty statistics for soil/land use groups

Class	5th	Median	95th
Dairy/Light	-32%	5%	49%
Dairy/Medium	-34%	0%	32%
Dairy/PD	-35%	6%	62%
Forest/DOC/Tussock	-54%	-11%	32%
Lifestyle	-46%	0%	40%
Sheep/Beef/Deer ex-hill/F	-34%	7%	48%
Sheep/Beef/Deer ex-hill/Light	-42%	1%	43%
Sheep/Beef/Deer hill/S	-50%	4%	61%

23. The research indicated that for dairy farming on light soils, any Overseer output integer quoted has a significant margin of error of a range between 30% below the relevant integer and 50% above it, and moreover, only has a 90% certainty of being within that broad range. This is expressed as:

$$-30\%_{X}{}^{+50\%}$$

24. Applying this methodology to a hypothetical example of a N loss of 40 (KgN/Ha/Yr), it is 90% certain that the N loss will be between: 28 and 60 (28 being 30% below 40KgN and 60, 50% above). Furthermore, there is a 10% chance the true figure is outside of that range again.

25. That is, a quoted figure of say 40 is best recognised as being a range:

28 - 40 - 60

The single integer is often used for all intents and purposes as the default value at the expense of the real range of potential leaching. The 32 kg range estimate intrinsic to an NRP derivation is concerning, and raises significant challenges for business planning, but also obviously for both compliance and especially for enforcement.

26. Table 1 above indicates similar concerns apply to Overseer outputs from hill country Sheep, Beef Cattle and Deer operations also expressed as single figures.

27. The Etheridge *et al.* paper is reasonably transferable because error analyses are not entirely locality dependent. No similar study is known to have been undertaken in the Waikato, before the promulgation of PC1. Given the significant error margins, the implications of using simple Overseer output integers in further models, and complex plan provisions, is concerning. This is therefore problematic to PC1's fundaments of allocation, temporal targets, all the cost-benefit estimates, RMA Part 2 attainment and consequential compliance/enforcement. These are the reasons why Pāmu questions Overseer's appropriateness for meeting Part 2 tests of the RMA, the stated objectives and policies or provide an appropriate balance of cost impacts and outcomes required to achieve the Vision & Strategy.

28. Pāmu's own experience with Overseer within and outside the catchment also demonstrates the challenges of using a tool which is constantly evolving, within an environment which is subject to multiple factors which influence the true leaching results. Pāmu will present additional evidence to illustrate this issue in Block 2.

NITROGEN REFERENCE POINT

29. In addition to the significant concerns noted above about the use of Overseer, Pāmu is concerned about the concept of a Nitrogen Reference Point ("NRP"). The proposed NRP approach captures specific climatic conditions of two years and the business responses to that weather and circumstance over the NRP period. Those are then entrenched within a 5 year rolling average, until some other future Plan becomes operative.

30. In addition, further clarity is still required in PC1 around:

    (a) which model can be used in the definition of the NRP; and

    (b) the discretion to a Certified Nutrient Management Advisor (CNMA) to determine the NRP timeframe for Rule 3.11.5.7 processes (newly intensified land) in Schedule B(a).

31. PC1, being based only on annual averaging of nutrient impacts, fails to meet the test of sustainable management as it misdirects regulation towards some sources, while failing to adequately address others. PC1 is likely to fail to achieve the Objectives proposed and wrongly prioritises contaminant sources, for rapid water quality improvements.

32. PC1 fails to adequately address the current threat to river quality (human and ecosystem health) when it matters most, over the summer months and shoulder periods. This failure stems from the use of annual average data to inform the promulgation of PC1 (river WQ data and further economics assessments, final policy direction setting and S.32 analyses), including the council's adoption of an 80 year Vision & Strategy achievement and a chosen focus on a 10 year period.

33. PC1 also does not adequately account for land and seasonal differences - this could lead to inequitable outcomes. For example, one suggestion made at a public meeting, was amending the rules for Nitrogen from livestock farms (while retaining provisions addressing P, TSS and bacteria). This would recognise N losses and impacts from steep land operations being intrinsically lower than dairy due to the volume, timing and impact of hill country nitrogen (only) emissions. This difference is especially so over summer, when rivers react sensitively to changes in nutrient inflows and N loss is low on such land due to reduce rainfall and therefore leaching from the soil.

34. Finally, the S.42A report has not clarified the apparent circularity in NRP as raised in Pāmu's submission, regarding Schedule B(b). In short, notwithstanding the concerns with the NRP concept outlined above, the following matters need further consideration and explanation:

    (a) The NRP period is not fixed for Non-Complying processes. Who decides that period, and how, lacks sufficient clarity.

    (b) Schedule B(c) does not appear to apply the conditions of (d) to any of the other models potentially available.

    (c) There is inconsistency in the NRP period between (b) and (f), and (a)(for 3.11.5.7.processes).

POINT SOURCE DISCHARGES, URBAN SEWAGE CROSS-CONNECTIONS AND UNSEALED ROAD RUN-OFF

35. A Plan must achieve the purposes of sustainable management and take an integrated and holistic approach to the issue. PC1 has a higher chance of achieving its objectives if it addresses **all** key sources of pollutants in an integrated manner. As drafted, several major pollutant sources are conspicuously absent, for example:

(a) Point source discharges to river effects.

(b) Unsealed road run-off, and

(c) Urban cross-connections of sewage to stormwater.

In order to meet the Objectives, the pollutant omissions should be addressed in this Plan (that is, it should be comprehensive).

36. The lack of seasonal risk-to-river analysis, when considering how to produce a tangible improvement in river water quality, has led to an underestimation of the importance of other major pollutant sources.

37. Furthermore, as PC1 attempts to address all four contaminants with equal vigour, it is not understood how the following approaches best achieve the purposes of the Act or the objectives:

(a) effectively grandparenting the nutrient contributions of Point Sources; and

(b) failure to address sediment (and P) from 6,822 km (source: NZTA 2007) of Waikato rural road run-off.

38. Policies 9 and 10 (protecting point source discharges) need to be amended to include these point source discharges within the scope of PC1.

39. That oversight goes to the heart of the Part 2 assessment of the PC1 and its very purpose. It is therefore a Block 1 high level issue and it is considered that such omissions undermine (and may prevent) PC1 achieving its Objectives 4, 2 and 3.

40. PC1 envisages a 10 year increment toward attaining the Vision and Strategy. Arbitrary division of Point Source versus Non-Point Source considerations in the drafting of PC1, has led to a narrow focus of Policies and Rules on rural activities without due consideration to the other concurrent sources (eg processing/urban related discharges, road run-off).

41. With respect to Objective 3 (short term improvements), water quality improvements would be better achieved by considering Point Source discharges AND sediment from roads AND urban cross-connections together with non-Point Source/Agricultural emission initiatives. An inappropriately narrow focus on Non-Point Source emissions over the short term will lead to a disproportionate burden of cost falling onto rural areas as

well as failing to achieve Objectives 3 (short term improvements) and 4 (People and Community Resilience). Inclusion of these other pollution sources will help meet Objective 2 (Social, economic and cultural wellbeing maintained) and Objective 5 (Protection and restoring tangata whenua values).

FARM ENVIRONMENT PLANS

42. Pāmu supports Farm Environment Plans ("**FEPs**") as a mechanism for improving on-farm performance and water quality outcomes, however, more resource must be dedicated to the implementation, monitoring and enforcement of FEPs for them to be effective. Convincing the non-agricultural sector that they are effective, timely, independent and adequately enforced, will be difficult, as will be discussed in more detail in the context of the Block 3 hearings.

43. FEPs are integral to producing a positive effect on river quality. Therefore their efficacy is considered critical to enabling PC1, or any other plan, to meet the proposed Objectives 1- 4.

RIPARIAN FENCING AND EXCLUSIONS

44. The proposed Policies and Rules in PC1 set an arbitrary riparian fencing setback, implementation time and slope criteria. Industry's risk is that of sunk capital, while the community's risk is that of less-than-anticipated environmental returns.

45. A corollary to stock exclusion is alternatives for stockwater provision. The positive fiscal case for stock water reticulation has been made in a report prepared for the Ministry of Primary Industries and Beef + Lamb New Zealand entitled "Economic Evaluation of Stock Water Reticulation on Hill Country" attached in Appendix A. An additional metric in that report, entitled "Farmer well-being", also pointed to positive intangible benefits not included in the purely fiscal analysis reported.

46. Pāmu wishes to draw the Panel's attention to technology solutions to stock exclusion and contaminant loss mitigation (Bacteria, Sediment, P and N). Such solutions have the potential to achieve compliance at a lower cost and higher benefit to traditional (8-wire post and batten) fences. Pāmu has significant Livestock grazing operations where solar electric fencing is successfully used to address production and exclusion management. Pāmu is also engaged in an R&D virtual fencing project (solar powered

GPS cattle collars remotely controlling the exclusion of animals from waterways).

47. The setback distances in Schedule C are 1m minima. It is unclear if this will be either effective or cost efficient. Useful purpose-specific riparian distances for stock exclusion, covered in the document ARC TP 350[2], should be taken into account by the Council in determining setback distances.

48. Use of the wetland RMA definition in Schedule C means protection is tighter for wetland associations, than streams, because the former includes margins and plants and ephemeral wetlands. Whereas waterbodies listed in Schedule C "continually contain water", i.e. are perennial.

49. That leaves an ecological gap in the rules, where ephemeral streams are unprotected leading to ephemeral wetlands which must be protected. Northland Regional Council has this problem too.

50. We are cognisant of fiscal imperatives, versus the clear directive[3], that WQ improvements will not chiefly be observed until ephemeral waterbodies are also protected. It is understood that no National Environmental Standard on stock exclusion is in effect at this time, or imminent.

MEANING OF "ENTERPRISE"

51. Glossary definitions are fundamental to understanding potential for effects and benefits and are relevant to PC1 as a whole. Pāmu understands glossary definitions to be a Block 1 matter, however to the extent they are more relevant to Blocks 2 and/or 3 Pāmu wishes to be heard in those hearings. Pāmu's submission identified the glossary definition of Enterprise as unclear.

52. The definition of **Enterprise** is crucial to business and RMA risk assessment of the proposed Rules. But, the definition is insufficient to cover the combinations and permutations of land occupation and use in response to the proposed rules. The s42A report does not address this issue. Clarity is required; Pāmu submits that the definition needs to include contiguous or fragmented blocks within the same catchment where a

[2] Parkyn, S.; Shaw, W.; Eades, P. (2000). Review of information on riparian buffer widths necessary to support sustainable vegetation and meet aquatic functions. Prepared by NIWA for Auckland Regional Council. Auckland Regional Council Technical Publication Number 350, 38 pages

[3] R.W. McDowell, N. Cox, T.H. Snelder (2017) Assessing the yield and load of contaminants with stream order: Would policy requiring livestock to be fenced out of high-order streams decrease catchment contaminant loads?. J. Environ. Qual. 46: 1038-1047(2017).

landowner can reasonably obtain better overall solutions rather than managing blocks in isolation.

53. Because "purposes of management" is not a defined term within PC1, it is not clear at this time if Pāmu should elect to run its portfolio based on tenure, combined total assets, per property, or a mixed approach.

54. Without clarity, the implications for Pāmu (or other businesses) cannot be easily assessed. Similarly, the community and regulators will not easily risk-assess for unintended work-arounds. This links to whether the proposed Plan can meet Objectives 1-4.

PROHIBITING BAD AGRICULTURAL PRACTICE

55. PC1, as proposed, seeks to improve on-farm processes to decrease losses of the four contaminants. It is envisaged to achieve that, via FEPs. Concurrent initiatives in the proposed plan seek to restrict N losses via NRP adherence, and clawbacks from high emitters.

56. It seems that many aspects of FEP processes are seeking to ensure that the bad agricultural practices are brought to an end. However, Overseer's methodology assumes a level of base practice including (often incorrectly) that critical leaching sources and connectivity to waterbodies have already been mitigated.

57. Such issues include farm race run-off, bridge approaches and surfaces, culvert crossing approaches, lined effluent ponds, no direct connectivity to receiving waters, and no discharges from under passes or direct crop run-off or paddock underdrainage. FEPs should not be used to mitigate practices that the NRP derivation has already credited a property for.

58. As an alternative to improvements over time via FEPs and Overseer based regulation, Council should consider prohibiting high emission activities in the plan. In January 2018, the WRC provided information (attached as Appendix B) that around 50 consents for direct discharges of agricultural effluent to waterways were active in the region.

59. There is a tail of non-compliance and poor practice in the agriculture industry that reflects badly on the industry as a whole, and on those making an effort to do the "right thing". PC1 should prohibit the discharge of treated or untreated dairy effluent direct to waterways (and ensure adequate means are put in place for monitoring and enforcement). Non-complying status

fails to send a clear enough message, or results in poor regulatory execution and consents being let.

POLICY 6 RESTRICTING LAND USE CHANGE

60. Proposed Policy 6 seeks to restrict land intensification and directly affects the likelihood of attainment of Plan Objectives 1 - 5.

61. Policy 6 makes a generalised statement of policy direction. How that is to be judged to avoid implementation failure is important. Applications will be judged for "clear and enduring decreases" in all four contaminants. Presumably N is to be 'objectively' assessed via Overseer, or similar. However, phosphorus, sediment and bacteria lack such quasi-objective assessment under the Plan. That critically weakens the ability to achieve Policy 6 and the Objectives.

62. It may be that P is of ascending importance in the PC1 catchment. The following example demonstrates the issue:

    (a) P loss from one of our dairy farms within the catchment is estimated by Overseer (V6.2.3) to be 2.3 kg P/ Ha/ year (confidence intervals unknown).

    (b) Pāmu has recently modelled the same farm with "MitAgator" model. The P loss is predicted to be 1.19 kg P/ Ha/ Year.

63. For the same farm and on-farm operations, the difference is marked. Both models are understood to already assume no connectivity between sources and waterbodies.

64. For Policy 6 to be effective, there must be an appropriate method for quantifying P loss. Currently, there are no industry used models for Bacteria which are calibrated on-farm. Similarly, for Sediment. Policy 6 as drafted and presently managed is unlikely to support the attainment of Objectives 2,3.

Appendix A.

https://www.mpi.govt.nz/dmsdocument/15478/loggedIn

Appendix B.

WRC supplied discharges of animal effluents to waterways (see below)

IRIS ID	Activity Type	Activity Subtype	Authorisation Name	Description	Commence Date	Expiry Date	Auth Status
AUTH138743.01.01	Discharge Permit	Water - animal	To discharge up to 8.5 cubic metres per day of treated farm dairy effluent to an unnamed tributary o	To discharge up to 8.5 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Waiharakeke West Stream.	17/10/2017	17/10/2018	Current
AUTH138507.01.01	Discharge Permit	Water - animal	To discharge up to 7.5 cubic metres per day of treated farm dairy effluent	To discharge up to 7.5 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Waikeria Stream	09/10/2017	09/10/2019	Current
AUTH138106.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge up to 10 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Mangapiko Stream	31/05/2017	31/05/2019	Current
AUTH138183.01.01	Discharge Permit	Water - animal	Discharge up to 27 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of	Discharge up to 27 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of the Waiomou Stream	02/05/2017	02/05/2018	Current
AUTH137780.01.01	Discharge Permit	Water - animal	Discharge 13.25 cubic metres/day of treated dairy effluent	Discharge 13.25 cubic metres/day of treated dairy effluent to a tributary of the Mangaotama Stream	21/03/2017	21/03/2019	Current
AUTH137876.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge of up to 14 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of the Mangapiko Stream, near Te Awamutu	23/02/2017	24/04/2018	Current
AUTH137358.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge up to 7.5 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of the Waihamea Stream	19/10/2016	28/02/2018	Current
AUTH135620.03.01	Discharge Permit	Water - animal	Water - Animal	Discharge wastewater to the Waikato River	12/10/2016	01/12/2040	Current
AUTH137217.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 12.75 cubic metres of treated dairy effluent to an unnamed tributary of the Waitoa River	04/10/2016	03/10/2018	Current
AUTH137142.01.01	Discharge Permit	Water - animal	Water - animal	To discharge of up to 11.75 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of the Puniu River	04/10/2016	04/10/2018	Current
AUTH136765.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 8.5 cubic metres of treated farm dairy effluent per day to an un-named tributary of the Waiomu Stream	04/10/2016	30/09/2018	Current
AUTH137108.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 17 cubic metres per day of treated animal effluent to an unnamed tributary of the Whakapatawaha Stream	15/08/2016	01/06/2018	Current
AUTH137056.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge up to 13.5 cubic metres of treated farm dairy wastewater to an unnamed tributary of the Matapouri Stream	08/08/2016	31/07/2018	Current
AUTH137021.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge up to 11.5 cubic metres per day of treated farm dairy wastewater into an unnamed tributary of the Mangapiko Stream	22/07/2016	31/07/2018	Current
AUTH136815.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 10 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Tauhei Stream.	10/06/2016	31/12/2018	Current
AUTH136378.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 11 cubic metres of treated dairy effluent per day to an un-named tributary of Lake Ngarotoiti	31/05/2016	31/05/2018	Current
AUTH136520.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 11.25 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Puniu River.	19/05/2016	15/05/2018	Current
AUTH136733.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 12.5m3 per day of treated farm dairy wastewater to an unnamed tributary of the Puniu River.	17/05/2016	30/06/2018	Current
AUTH136675.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge up to 21.25 cubic metres per day of treated dairy shed effluent to an unnamed tributary of the Waihou River	16/05/2016	31/05/2018	Current
AUTH136430.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 13 cubic metres per day of treated farm dairy wastewater to an un-named tributary of the Rapurapu Stream	12/04/2016	08/04/2018	Current
AUTH136607.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 13 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of the Waimata Stream	11/04/2016	31/07/2018	Current
AUTH136570.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge of up to 15 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of the Topehaehae Stream	18/03/2016	31/03/2018	Current
AUTH135960.01.01	Discharge Permit	Water - animal	To discharge up to 11.5 cubic metres per day of treated dairy effluent	To discharge up to 11.5 cubic metres per day of treated dairy effluent to an unnamed tribuatry of the Mangaorongo Stream.	16/03/2016	01/06/2019	Current
AUTH136525.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 7.5 cubic metres per day of treated farm dairy wastewater to a tributary of the Toenepi Stream.	15/03/2016	31/03/2018	Current
AUTH136478.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 17 cubic metres per day of treated dairy effluent to the Waitakaruru Stream.	14/03/2016	31/05/2018	Current
AUTH136083.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 17 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Waihou River.	16/02/2016	15/02/2018	Current
AUTH136439.01.01	Discharge Permit	Water - animal	Discharge of treated animal effluent to water	To discharge up to 9.5 cubic metres of treated dairy effluent per day to an unnamed tributary of the Mangatawhiri Stream	09/02/2016	15/02/2018	Current
AUTH136065.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 12.9 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Paeroa Stream.	27/01/2016	01/03/2018	Current
AUTH135590.01.01	Discharge Permit	Water - animal	Water - Animal	To discharge up to 13.5 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Mangawara River	31/12/2015	30/06/2018	Current
AUTH135835.01.01	Discharge Permit	Water - animal	Water - animal	To discharge up to 8.5 cubic metres per day of treated farm dairy effluent to an unnamed tributary of the Waiharakeke West Stream.	25/09/2015	25/09/2017	Current
AUTH135799.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge up to 12.5 m3/day of treated dairy effluent to a tributary of the Waikeria Stream.	23/09/2015	25/09/2017	Current
AUTH135687.01.01	Discharge Permit	Water - animal	Water - Animal	Discharge up to 12.5 cubic metres per day of treated farm dairy wastewater to an unnamed tributary of the Komata River	04/09/2015	04/03/2018	Current
AUTH135444.01.01	Discharge Permit	Water - animal	Discharge to water	To discharge up to 11.5 cubic metres of treated farm dairy effluent to an unnamed tributary of the Mangawhero River	29/07/2015	31/07/2018	Current
AUTH134843.01.01	Discharge Permit	Water - animal	Discharge 12m3 treated dairy effluent	Discharge 12m3 treated dairy effluent to an unnamed tributary of the Mangaorino River	18/02/2015	18/02/2018	Current
AUTH134754.01.01	Discharge Permit	Water - animal	Discharge to land	Discharge wastewater from a homekill operation to land	21/01/2015	01/02/2040	Current
AUTH132222.01.01	Discharge Permit	Water - animal	Discharge to land	Discharge of treated dog kennel wastewater to land in association with the operation of boarding kennels	29/05/2014	29/05/2034	Current
AUTH131234.01.01	Discharge Permit	Water - animal	Discharge of treated animal effluent to water	Discharge up to 20 cubic metres per day of treated farm dairy wastewater to a tributary of the Waitoa River	24/01/2014	24/01/2019	Current
	Discharge Permit	Water - animal	Water - Animal	Discharge wastewater from a dairy goat milking operation via subsurface irrigation	30/08/2013	31/07/2033	Current