Wellington Registry **ENV-WLG-2024-001**
Te Whanganui-a-Tara Rohe

In the Environment Court
I Mua I Te Kōti Taiao O Aotearoa

Under the Resource Management Act 1991

and in the matter of the direct referral of an application for resource consents by Meridian Energy Limited in respect of the proposed Mt Munro wind farm under section 87G of the Resource Management Act 1991 (**RMA**).

Meridian Energy Limited
Applicant

and

Tararua District Council, Masterton District Council, Manawatū-Whanganui Regional Council and Greater Wellington Regional Council (**Councils**)
Consent Authorities

and

s 274 Parties

Statement of Rebuttal Evidence of Graeme Ridley on behalf of Meridian Energy Limited

6 September 2024

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INTRODUCTION

1. My full name is Graeme Ridley. My statement of evidence in chief dated 24 May 2024 addresses erosion and sediment control in relation to the proposed Mt Munro Wind Farm. My qualifications and experience are set out in that statement of evidence, and I reaffirm my commitment to comply with the code of conduct for expert witnesses.

2. The purpose of this rebuttal evidence is to address the remaining outstanding matters following expert conferencing, and to respond to matters relevant to erosion and sediment control that have been raised in the section 274 evidence.

3. I confirm that Mr Kerry Pearce and I participated in expert conferencing in relation to erosion and sediment control, and reached agreement on most matters, as is reflected in the Joint Statement of Erosion and Sediment Control Experts (the **ESC JWS**). There are two outstanding issues recorded in the evidence of Mr Pearce and I address these items below.

4. There is also a matter I wish to clarify relating to the rainfall figures used within the application assessment, which has been noted in the Joint Statement of Stormwater and Hydrology Experts (**SW JWS**), in the evidence of Mr Andres Roa Concha, and was also raised in the evidence of the section 274 parties. I address this item below.

RESPONSE TO COUNCIL STORMWATER AND HYDROLOGY EVIDENCE

5. Mr Andres Roa Concha notes in his evidence that:[1]

> *…submitters have continued to highlight concerns relating to rainfall figures provided in the application. The experts agreed in the Operational Stormwater JWS that the rainfall referred to in the Meridian application documentation is not appropriate for the Project site. As noted in my s 87F report, I consider the rainfall data given in HIRDS Version 4 RCP8.5 (for the period*

[1] Paragraph 12 of the Evidence of Mr Andres Roa Concha

*2081-2100) (**HIRDS V4**) to be more appropriate for the purposes of the design*.

6. I assume that Mr Roa Concha refers to the HIRDS Version 4 RCP8.5 for the purpose of operational stormwater design and not for the construction earthworks.

7. Mr Roa Concha refers to the evidence of Mrs Janet McIlraith, Mr Robin Olliver, Mr John Maxwell and the Hastwell Mount Munro Protection Society Inc (**the s 274 evidence**). I have reviewed this evidence and note that all references are to the use of the rainfall figures in the context of construction activities and not operational stormwater or hydrology. There appears to be no reference to operational stormwater considerations in the context of the s274 evidence.

8. I confirm that Mr Pearce, the Council's construction erosion and sediment control expert, did not identify the rainfall figures as an issue or concern during the expert conferencing in relation to erosion and sediment control.

9. As noted within my statement of evidence I confirm[2] that "*To assist with identification of higher risk periods, such as during rainfall events, the Project will utilise on site manual rainfall gauges to provide data for the Project relating to rainfall quantities and intensities which will assist with confirming adequacy of the ESC measures and methodologies*."

10. Within my evidence I further confirmed that[3] "*within the CWMR I have referred to Masterton rainfall figures to illustrate the annual rainfall pattern. This will not reflect exact site conditions. However, through the construction process, and in particular through the SSESCPs process, specific design of controls will be based on local data. In addition, weather forecasting is required and will continue to inform construction staging, sequencing and programme*".

11. I consider that Mr Roa Concha appears to misinterpret the s274 evidence in relation to rainfall, and he has not acknowledged that the

[2] Paragraph 80 of the Evidence in Chief of Graeme Ridley

[3] Paragraph 116 of the Evidence in Chief Graeme Ridley

rationale for using this dataset was addressed in my evidence in chief above.

12. I confirm that the rainfall figures used in my assessment were for construction activity, and were not intended to be used to design the operational stormwater system, which is outside my area of expertise. I consider that the proposed approach as detailed within my assessment to factoring in actual site rainfall when designing controls to manage construction related effects is appropriate and robust.

RESPONSE TO COUNCIL EROSION AND SEDIMENT CONTROL EVIDENCE

13. Following review of Mr Pearce's statement of evidence and the August Proposed Conditions attached to Mr McGahan's evidence, I consider that there are only two key points which need addressing in relation to erosion and sediment control. These are:

    (a) The use of discharge performance targets rather than discharge standards; and

    (b) The extent of monitoring of ESC devices.

Performance target vs standards

14. Through the expert conferencing Mr Pearce and I discussed whether the terminology of discharge performance targets or discharge performance standards should be used.

15. Importantly, we agreed that no reference to standards should be included in the proposed consent conditions related to erosion and sediment control, and that performance targets should instead be used.

16. This was a specific point on the agenda (Items 6 and 7), and in the signed ESC JWS, which attached recommended conditions with any reference to a 'standard' amended in tracked changes to refer to a 'target' instead.

17. Discharge targets were agreed as appropriate by both Mr Pearce and I at this conferencing, and discharge standards are not preferred due to

their “absolute nature” and the fact that there may well be times, even with best practice implementation, where such standards could not be achieved.

18. We, as experts, agreed that ‘targets’ are preferred given the comprehensive further conditions requiring a series of actions if such targets are not achieved. These actions act as a “backup” and include investigation, and development and implementation of a response plan. The intention is that an adaptive response is taken.

19. Mr Pearce appears in his evidence to have varied from the position within the JWS ESC, and he interchangeably uses the terms discharge targets and discharge standards. Mr Pearce notes that the August Proposed Conditions reflect the recommendations he has made in his evidence. This set has changed the proposed wording in the ESC conditions back to ‘standards’. The rationale for this is not explained in Mr Pearce’s evidence.

20. I note that in the evidence of Ms Lauren Edwards[4] she confirms that the use of discharge standards is preferred rather than a discharge target, as they are intended to be thresholds to be met.

21. I remain of the view that with the support of the “back up” conditions that a discharge target is a more appropriate approach than a discharge standard. Given the recommended conditions, the same management response will follow regardless of whether a target or a standard is set. However, a ‘target’ focuses more appropriately, in my view, on the proper management of discharges, rather than on opportunities to penalise exceedances.

22. The proposed consent conditions require the project to design, implement and maintain sediment control devices as per best practice guidelines. On a national basis, and as part of best practice design, it is recognised that the treatment of suspended solids and turbidity of water in discharge from sediment control devices is not solely dependent on volume alone and it is critical that other features of the design are recognised to optimise treatment. Both soil particle size analysis and

[4] Paragraph 65 of Ms Lauren Edwards Evidence

the hydrology of the catchment contributing to the sediment control devices are both critical factors. This results in the adoption of a best practice approach that is based on a volume of water that achieves a very high efficiency for smaller more frequent rain events and much reduced efficiency for large rain events.

23. If the project experiences a large rain event which exceeds the design capacity of the devices, it would not be appropriate to be subject to non-compliance with the consent conditions. The appropriate response is to implement actions as specified within Condition E3 (g) to (j)[5]. Any failure to undertake these actions is a non-compliance which will then be considered further by Council.

24. Overall, it is important to recognise that the project, like all earthwork projects, cannot design sediment control measures to account for all conceivable rain events and a best practice approach must apply. It is important, however, that where targets are specified, and are not achieved, then a clear set of follow up actions is put in place. This is reflected within the condition framework as proposed.

Extent of monitoring of ESC devices

25. Mr Pearce has confirmed his view in evidence that all sediment control devices should be monitored to ensure that they are operating effectively and minimising the potential environmental impacts.[6]

26. Mr Pearce has referred to the monitoring of all sediment retention devices being standard practice for larger projects he has been involved with.[7]

27. I consider that quantitative monitoring of sediment retention ponds alone is adequate for this project and consistent with standard practice. The extent of monitoring of other sediment retention devices needs to be considered in the context of the overall and comprehensive monitoring regime which is outlined within the Construction Water Management Report and also confirmed through the consent

[5] Conditions as attached to Mr McGahan Evidence

[6] Paragraph 13 of the Evidence of Mr Kerry Pearce

[7] Paragraph 15 of the Evidence of Mr Kerry Pearce

conditions which were agreed at conferencing. This regime would include:

- Ongoing weather forecast monitoring;
- Weekly inspections of all devices;
- Inspection of all devices within 24hrs of a rain event;
- Retaining monitoring records;
- Specific monitoring detail to be provided for within the SSESCPs; and
- Flocculation management plans that require monitoring (including pH) systems.

28. Erosion and sediment control measures are all required to be designed, implemented and maintained to a specific guideline and SSESCP criteria and I assess there is no technical reason to further monitor each and every sediment retention device to determine effectiveness, beyond these robust requirements.

29. I consider that the monitoring package as a whole is comprehensive, reflects best practice, and will quickly determine any specific issues or items of concern, which in turn will result in the necessary actions and response.

30. Finally, I confirm that in my experience on large earthwork projects that the monitoring regime implemented should be reflective of the extent of earthworks proposed, construction methodologies and the associated risk. Monitoring programmes for earthworks and erosion and sediment control should and will vary dependent upon these factors.

31. My assessment remains that the overall monitoring package is comprehensive and the monitoring of discharges from sediment retention ponds (as the main sediment control devices to be implemented) is appropriate for this project. Extending this requirement to all devices is excessive and unnecessary.

RESPONSE TO SECTION 274 EVIDENCE

32. I have reviewed the s 274 evidence, and agree with Mr Pearce that there are no new issues to be addressed in relation to erosion and sediment control.

CONDITIONS

33. I have reviewed the set of erosion and sediment control conditions attached to the reply evidence of Mr Anderson and confirm that I consider these are appropriate (**6 September Proposed Conditions**).

34. The August Proposed Conditions attached to the evidence of Mr McGahan generally reflect those conditions which were agreed in the ESC JWS, except as already discussed above in relation to:

    a) the change back to performance ‘standards’ rather than ‘targets’; and

    b) the appropriate extent of monitoring of ESC devices.

CONCLUSIONS

35. I confirm that Mr Pearce and I agreed at expert conferencing that the proposed approach to construction water management is reflective of best practice, and is reflected in consent conditions proposed. The process of development of an updated ESCP and subsequent SSESCPs in accordance with consent conditions is an appropriate and effective process. The two matters discussed above remain the only matters outstanding.

G.J. Ridley

Graeme Ridley

6 September 2024