

IN THE ENVIRONMENT COURT OF NEW ZEALAND  
WELLINGTON REGISTRY

I MUA I TE KŌTI TAIAO O AOTEAROA  
TE WHANGANUI-Ā-TARA ROHE

ENV-2024-WLG-000001

|                  |   |
|------------------|---|
| Under the        | <b>RESOURCE MANAGEMENT ACT 1991</b>   |
| In the matter of | the direct referral of applications for resource consents under section 87G of the Act for the Mt Munro Wind Farm |
| By               | <b>MERIDIAN ENERGY LIMITED</b><br>Applicant   |

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**JOINT STATEMENT OF THE STORMWATER AND HYDROLOGY  
EXPERTS**

5 August 2024

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## **INTRODUCTION**

1. This joint expert witness statement relates to the direct referral application lodged by Meridian Energy Limited for resource consents to construct, operate and maintain a windfarm on Mt Munro, Eketāhuna.
2. The stormwater and hydrology experts attending the conference were:
  - (a) Andrés Roa (**AR**) for the Consent Authorities (Manawatū-Whanganui Regional Council, Wellington Regional Council, Tararua District Council, and Masterton District Council)
  - (b) Sue Ira (**SI**) for the Consent Authorities (Manawatū-Whanganui Regional Council, Wellington Regional Council, Tararua District Council, and Masterton District Council)
  - (c) Maurice Mills (**MM**) for Meridian Energy Limited (**MEL**).
3. The initial conference took place remotely via Microsoft Teams on 1 August 2024.
4. A further conference took place remotely via Microsoft Teams on 5 August 2024.

## **AGREED AGENDA**

5. The agenda for discussion is set out below in Annexure A.

## **CODE OF CONDUCT**

6. This joint witness statement is prepared in accordance with section 9 of the Environment Court Practice Note 2023.
7. We confirm that we have read the Environment Court Practice Note 2023 and agree to abide by it.

## **PURPOSE AND SCOPE OF CONFERENCING**

8. The purpose of this further expert conferencing was to update Annexure A of the initial joint witness statement dated 1 August 2024, as further discussions were required following the initial conference. A copy of the previous statement is at Annexure B.

## AGREED ISSUES

9. Refer to the updated Annexure A.

## DISAGREEMENT AND REASONS

10. Refer to the updated Annexure A.

Date: 5 August 2024

Andres Roa

Digitally signed by Andres Roa  
DN: C=NZ,  
E=Andres.Roa@arassociates.co.nz,  
O=AR & Associates, OU=AR &  
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Date: 2024.08.06 17:29:11+12'00'

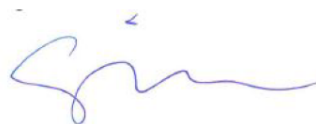
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Andrés Roa



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Sue Ira



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Maurice Mills

## ANNEXURE A - UPDATED

In the matter of the Mt Munro windfarm application

Expert conferencing – Stormwater and Hydrology – AR, SI, and MM

| Issue   | Agreed position with reasons  | Disagreements with reasons |
|---|---|----------------------------|
| <b>Topic: Methodology</b>   |   |                            |
| 1. Appropriateness of methodology and assessment of likely effects.   | We are all agreed that water quality and quantity design requirements will be in accordance with the GWRC and Horizons RC design guidelines documents (and the associated documents we have referred to in our s87F reports). |                            |
| <b>Topic: Assessment and Design</b>   |   |                            |
| 2. How rainfall intensity and duration are factored into the design of stormwater management systems, and culverts during both construction and operation phases.<br><br>Note: it is a concern of s 274 parties that Masterton rainfall data used could significantly understate the circumstances at Mt Munro, and a further concern of the effect of rainfall at Mt Munro on the construction season. | In agreement that the rainfall referred to in the Ridley Dunphy report in Masterton is not appropriate for this site.   |                            |
| <b>Topic: Effects</b>   |   |                            |
| 3. Clarify the potential effects on water quality, and security of supply. In particular, consider whether watercourse levels will be maintained.   | Sue Ira - From a water quality perspective and based on the agreed conditions in this joint statement, I consider that the stormwater management approach is best practice.   |                            |

| Issue   | Agreed position with reasons   | Disagreements with reasons |
|---|--|----------------------------|
|   | <p>Issues around security of supply and watercourse levels are outside my area of expertise.</p> <p>Andres Roa - From a water quantity perspective and based on the agreed conditions in this joint statement, I consider that the stormwater management approach is best practice. Issues around security of supply is outside my area of expertise.</p> <p>Maurice Mills agrees with these statements.</p>     |                            |
| <b>Topic: Conditions</b>  |  |                            |
| 4. Confirm the appropriate RCP value to incorporate into the condition set.                             | All agreed that RCP8.5 2130 Climate Change Horizon is appropriate for the design of the stormwater system.   |                            |
| 5. Requirement to incorporate Water Sensitive Design practices and requirement for the 75% TSS removal. | <p>We agreed that:</p> <ul style="list-style-type: none"> <li>• should be a condition requiring a standard of 75% total suspended solids removal over a long term average basis for the treatment of operational stormwater.</li> <li>• Should be a condition which requires consideration of water sensitive design where practical (as per the Auckland Council GD04 WSD guideline document, 2015).</li> </ul> |                            |
| 6. Requirement to incorporate suitable stormwater operation and maintenance plan                        | All agreed that a condition requiring the development of an operation and maintenance plan should be included in the consents.   |                            |
| 7. Requirements associated with fill disposal areas   | Agreed that there should be a requirement for fill disposal areas to be located clear of any flood plains, flood prone areas or overland flow paths. This requirement could be included as part of proposed condition EW2f.  |                            |

| Issue  | Agreed position with reasons   | Disagreements with reasons |
|--|--|----------------------------|
|  | It is agreed that the definition of an overland flow path is an area with a minimum catchment size of 4,000m <sup>2</sup> .  |                            |
| 8. Requirement for work to be subject to approval of detailed design documentation | <p>Agreed that there should be a requirement that the work be subject to approval of detailed design documentation showing that the stormwater quantity and quality objectives are satisfied, including adequate sizing of primary and secondary stormwater infrastructure, management of scour, erosion and flood risks, and protection of waterways.</p> <ul style="list-style-type: none"> <li>• We recommend that condition CM1(a)(iii) should be updated to be made more specific as discussed here.</li> </ul> |                            |

We note that condition WC1 (requirement to provide as-builts) was not included in the list of conditions circulated for this conference but confirm it does still apply to the operational stormwater management expert discussion and should be included in the final set of conditions.

The agreed requirements should be included in any proffered conditions.

## ANNEXURE B

| Issue  | Agreed position with reasons  | Disagreements with reasons   |
|--|---|--|
| <b>Topic: Methodology</b>  |   |  |
| 1. Appropriateness of methodology and assessment of likely effects.  | We are all agreed that water quality and quantity design requirements will be in accordance with the GWRC and Horizons RC design guidelines documents (and the associated documents we have referred to in our s87F reports). |  |
| <b>Topic: Assessment and Design</b>  |   |  |
| <p>2. How rainfall intensity and duration are factored into the design of stormwater management systems, and culverts during both construction and operation phases.</p> <p>Note: it is a concern of s 274 parties that Masterton rainfall data used could significantly understate the circumstances at Mt Munro, and a further concern of the effect of rainfall at Mt Munro on the construction season.</p> | In agreement that the rainfall referred to in the Ridley Dunphy report in Masterton is not appropriate for this site.   | <p>Climate change:</p> <p>Understanding and agreement that Horizons RC do not have a specific standard relating to RCP for climate change so there needs to be a discussion on what the most appropriate RCP would be for this site.</p> <ul style="list-style-type: none"> <li>Andrés: RCP needs to be stipulated in the consent conditions and should be set at RCP8.5 2130.</li> <li>Maurice: To be put into the conditions that this is a matter for discussion and agreement with the relevant consent authority at the time of detailed design.</li> </ul> <p>ACTION:</p> <ul style="list-style-type: none"> <li>Maurice and Andrés to confer with the respective parties and meet within a week to further discuss this issue.</li> </ul> |
| <b>Topic: Effects</b>  |   |  |
| 3. Clarify the potential effects on water quality, and security of supply. In particular, consider whether watercourse levels will be maintained.  | Not discussed as we are not familiar with this topic/ issue.  |  |

| Issue   | Agreed position with reasons   | Disagreements with reasons   |
|---|--|--|
| <b>Topic: Conditions</b>  |  |  |
| 4. Confirm the appropriate RCP value to incorporate into the condition set.                             |  | Further discussions to be held and then Maurice and Andrés will meet within a week to discuss (see point 2). |
| 5. Requirement to incorporate Water Sensitive Design practices and requirement for the 75% TSS removal. | <p>We agreed that:</p> <ul style="list-style-type: none"> <li>• should be a condition requiring a standard of 75% total suspended solids removal over a long term average basis for the treatment of operational stormwater.</li> <li>• Should be a condition which requires consideration of water sensitive design where practical (as per the Auckland Council GD04 WSD guideline document, 2015).</li> </ul> |  |
| 6. Requirement to incorporate suitable stormwater operation and maintenance plan                        | All agreed that a condition requiring the development of an operation and maintenance plan should be included in the consents.   |  |
| 7. Requirements associated with fill disposal areas   | <p>Agreed that there should be a requirement for fill disposal areas to be located clear of any flood plains, flood prone areas or overland flow paths. This requirement could be included as part of proposed condition EW2f.</p> <p>It is agreed that the definition of an overland flow path is an area with a minimum catchment size of 4,000m<sup>2</sup>.</p>  |  |
| 8. Requirement for work to be subject to approval of detailed design documentation                      | Agreed that there should be a requirement that the work be subject to approval of detailed design documentation showing that the stormwater quantity and quality objectives are satisfied, including adequate sizing of primary and secondary stormwater infrastructure, management of scour, erosion and flood risks, and protection of waterways.  |  |



| Issue | Agreed position with reasons  | Disagreements with reasons |
|-------|---|----------------------------|
|       | <ul style="list-style-type: none"> <li>We recommend that condition CM1(a)(iii) should be updated to be made more specific as discussed here.</li> </ul> |                            |

We note that condition WC1 (requirement to provide as-builts) was not included in the list of conditions circulated for this conference but confirm it does still apply to the operational stormwater management expert discussion and should be included in the final set of conditions.