

**BEFORE AN EXPERT PANEL  
SOUTHLAND WIND FARM PROJECT**

Under the **FAST-TRACK APPROVALS ACT 2024**

In the matter of an application for resource consents, a concession, wildlife approvals, an archaeological authority and approvals relating to complex freshwater fisheries activities in relation to the Southland Wind Farm project

By **CONTACT ENERGY LIMITED**

Applicant

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**JOINT STATEMENT OF EXPERTS: EARTHWORKS**

**16 February 2026**

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## **INTRODUCTION**

1. Minute 6 of the Expert Panel dated 23 January 2026 directed that a conference with earthworks experts be convened. The Expert Panel recorded that:

*[5] Three minor matters are to be addressed with the primary purpose of the expert conference being to determine how these matters are considered and addressed in the conditions of consent.*

2. The three relevant matters, set out in paragraphs 7 – 19 of Minute 6, are:

*Topic 1: Staging of earthworks.*

*Topic 2: Water quality standards.*

*Topic 3: Response to monitoring.*

3. The Panel subsequently issued Minute 6A outlining the Panel's provisional view of the application of the water quality standards applying to the discharge from the earthworks sediment control devices.
4. This Joint Witness Statement has been prepared by the following experts:
  - (a) Luke Gordon (LG) (Riley Consultants; for the Applicant);
  - (b) Claire Hunter (CH) (Mitchell Daysh; for the Applicant);
  - (c) Megan Hankey (MH) (Mitchell Daysh; for the Applicant);
  - (d) Bruce Halligan (BH) (Environment Southland); and
  - (e) Ciaran Thayer (CT) (Environment Southland).

## **CODE OF CONDUCT**

5. The experts confirm that we have read the Environment Court Code of Conduct 2023 and agree to comply with it. The experts confirm that the issues addressed in this Joint Statement are within our area of expertise, unless stated otherwise.

## **JOINT STATEMENT ON MATTERS IDENTIFIED IN MINUTE 6**

6. The experts' views on the three relevant topics / matters are addressed in turn below.

## Topic 1: Staging of earthworks

7. The Panel considers that the proposed staging requirements for earthworks activities are not clearly set out in the draft condition set and requested a set of specific staging and stabilisation conditions.
8. CH, MH and LG note that stabilisation is addressed in the conditions as follows:
  - (a) The Earthworks Management Plan will include details of ground stabilisation measures (CM3(f)) and measures to ensure all disturbed worked areas are progressively rehabilitated and revegetated as soon as practicable following earthworks (CM3(h));
  - (b) The site or activity-specific management plans will include details of any temporary and/or permanent stabilisation (CM4(h));
  - (c) CM5(d) and (e) outline the stabilisation timeframes for exposed areas; and
  - (d) CM7(d) requires areas of earth worked surfaces, vegetation clearance and land disturbance within the Project Site to be progressively stabilised as soon as practicable in accordance with the Terrestrial and Wetland Ecological Management Plan.
9. The conditions as drafted therefore set out a series of requirements relating to stabilisation of earthworks that must be complied with during construction of the Project. This includes timing requirements and progressive rehabilitation of exposed areas.
10. Further, CH, MH and LG note the intention of the site or activity-specific management plans is to ensure that construction management measures are appropriate for the different areas across the site where works will occur. This includes the specific erosion and sediment control measures that will be applied to each stage of earthworks within the relevant area of the Project Site and details of stabilisation measures.
11. In addition, all earthworks activities must comply with the stabilisation timeframes set out in proposed conditions CM5(d) and (e). CH, MH and LG note that the intention of these two conditions is that these stabilisation timeframes apply to earthworks activities, and consider amending the

wording from referring to the completion of 'establishment works' to 'earthworks formation' may be more appropriate to clarify this.

12. We have also reviewed the conditions set for other large-scale infrastructure development projects, such as wind farms and road construction. It appears from this review that it is unusual for conditions to impose open area limits. A more typical approach is to manage the sequencing of earthworks through management plans, site erosion and sediment control plans, along with water quality monitoring and limits for downstream turbidity, clarity, and/or Total Suspended Sediment (TSS) volumes.
13. It is important to note that the management plans proposed for this Project must be certified by Environment Southland and the Southland District Council before construction begins. This includes a certification process for the Site or Activity Specific Management Plans (SSMP) associated with this activity (condition CM4). These plans require detailed site-specific (or zoomed-in) layouts for each construction or earthworks activity focus area, along with specific information on various matters including:
  - (a) The specific erosion and sediment control measures that will be applied to each stage of earthworks, including location(s), dimension(s) and capacity of any control structure(s), all designed in accordance with condition CM5;
  - (b) Details of the water quality monitoring that shall be completed throughout the construction works;
  - (c) Supporting calculations and design drawings of all stormwater and sediment control structures;
  - (d) Catchment boundaries and landforms contours; and
  - (e) Location(s) of stabilised entranceway(s).
14. This provides additional certainty that the management plans will be fit for purpose and address the requirements of the conditions.
15. Considering the above, and to address the Panels' comments regarding stabilisation, to provide additional certainty in the conditions that earthworked areas will not be left exposed for long periods of time, we

consider it is appropriate to amend condition CM7(d) to specify a stabilisation timeframe. We propose to amend the condition as follows:

*CM7(d): Areas of earth worked surfaces, vegetation clearance and land disturbance within the Project Site shall be progressively stabilised as soon as practicable in accordance with the TEMP so that sediment retention measures can be removed, and pre-existing stormwater pathways can be restored. If an area is not subject to earthworks activity (including cut and fill batters) for a period of 14 days, or a time otherwise specified within a SSMP, the area shall be stabilised;...*

16. All experts agree this amendment provides greater certainty as to the stabilisation timeframes for all earthworks stages and is consistent with similar conditions for other large-scale infrastructure projects that involve high volumes of earthworks.

## **Topic 2: Water quality standards**

17. The Applicant proposed to align the water quality monitoring standards in the consent conditions with the standards set out in Appendix E of the Proposed Southland Water and Land Plan (SWLP), including the exception for 'natural causes'. This approach was adopted following feedback from Greg Ryder as the Applicant's freshwater ecologist advisor. CH and MH are also aware that compliance with the standards set out in Appendix E of the SWLP is consistent with other conditions issued in Southland for wind farm construction (earthworks) and the management of downstream water quality (see Kaiwera Downs Wind Farm consents, AUTH-20233412-01 and 05).
18. Following consideration of the Panel's comments, CH, MH and LG consider it is appropriate to amend condition CM5(g) to remove the reference to 'natural causes' and instead specify the conditions of a heavy rainfall event to inform when the relevant water quality standards are not required to be met (as they would not be achievable due to the increased sediment load following a heavy rainfall event). It is proposed to link this to a 2-year Average Recurrence Interval (ARI) event as this aligns with the expected period over which the earthworks associated with the construction of the wind farm will occur.
19. In regard to the methodology to follow to identify the 2-year ARI, LG proposes the use of the NIWA's (now Earth Sciences New Zealand) rainfall

modelling tool, HIRDS (High Intensity Rainfall Design System). HIRDS produces rainfall estimates at any location for a range of return periods and event durations, by interpolating rainfall records from nearby rain gauges and applying corrections for elevation. It produces depth-duration-frequency (DDF) tables which can be used for design storm assessment.

20. The benefit of using HIRDS, compared with the alternative, of using just the nearest long term rainfall record (Environment Southland's Mokoreta at Mt Alexander), is that HIRDS uses multiple rainfall records in proximity to the location being 'tested' and extrapolates from these multiple data sources to calculate rainfall intensities at any given location. This is deemed preferable to using the site Mokoreta at Mt Alexander, as this is over 3km from the area of closest earthworks and almost 20km from the area of furthest earthworks, and located at a significantly lower elevation than most of the wind farm site.
21. As such, the proposed approach following a rain event, where discharges from a sediment control device (or devices) exceed the relevant water quality standards outlined in the conditions, an assessment will be undertaken to determine whether the event met, or exceeded, the definition of a 2-year ARI at the specific location. This will be done by following the following steps;
  - (a) HIRDS will be used to calculate the 2-year ARI at the location of the nearest rainfall recording station to the subject earthworks site, noting that during construction there may be multiple rainfall monitoring devices established on the site.
  - (b) This will be compared to the actual rainfall recorded at that station.
  - (c) If the rainfall recorded on site exceeds that which is calculated by HIRDS for the 2-year ARI (for any intensity/period in the HIRDS output) then the event will be considered a 'heavy rainfall event' and the discharges that exceeded the water quality standards outlined in the conditions will not be treated as a breach of such standards.
22. LG notes that HIRDS produces rainfall estimates for a range of durations, including 10 minute, 20 minute, 30 minute, 1hr, 2hr, 6hr, 12hr, 24hr, 48hr, 72hr, 96hr and 120hr durations and considers all durations are relevant for the assessment of whether a rainfall event is 'heavy' or not (i.e. for

determining compliance or non-compliance with the relevant water quality standards).

23. To ensure that HIRDS is an appropriate tool to use, Riley undertook an analysis of the complete Mokoreta at Mt Alexander rainfall record (1978 - 2026) and calculated the 2-year ARI over different durations and compared these to the output from HIRDS for the same location. The results of this analysis are tabulated below. LG notes that the HIRDS-calculated rainfall depths correlate closely with the measured records and are therefore appropriate for use in the above analysis, especially in consideration of the ability to use HIRDS to calculate the 10 minute to 120 hour rainfall intensities/depths at *any* location on the Project Site. This is deemed more accurate/appropriate than comparing rain events on the site to the 2-year ARI results using just the Mokoreta at Mt Alexander site, which could be as much as 20km from the site where an event occurs.

**50% AEP (2-year ARI) rainfall depths**

Duration (hr)	Mt Alexander	HIRDS at Mt Alexander
1	10.5 mm*	11.4 mm
6	30.5 mm	27.6 mm
12	40.5 mm	38.2 mm
24	51.0 mm	52.0 mm
48	64.0 mm	68.7 mm

\* Might be underestimated by 10-20%, as estimate was derived from an hourly dataset.

24. In addition, we agree with the Panel’s comments on the applicability of several of the standards listed in proposed conditions CM7A and CM7B. Again, the listed standards in the conditions follow the SWLP, but it would be appropriate to refine that list to more specifically relate to factors most relevant to the Project.
25. In response, we propose deleting conditions CM7A and CM7B and replacing them with a single condition outlining receiving water quality standards relevant to any discharge that may occur during construction of the Project, and that apply to all watercourses within the Project Site. We have therefore identified the parameters that relate to the potential discharge of sediment given this is the most likely contaminant to be discharged during construction. This will ensure that the conditions are fit for purpose and water quality monitoring undertaken is targeted and relevant to the effects of the Project.

26. We appreciate the Panel's further comments on the water quality standards included in Minute 6A in response to the draft Joint Witness Statement prepared by the experts. Following the receipt of Minute 6A from the Panel, we have given further consideration to whether the refined water quality standards listed in proposed condition CM7A should apply at all times, or to include an exception for a 2-year ARI event or greater, as proposed for condition CM5(g) discussed above.
27. We note the Panel's view in Paragraph 3 of Minute 6A that the water quality standard in proposed condition CM7A(a) should have an exception for a 48 hour period following a 2-year ARI event or greater (i.e. should *not* apply for 48 hours following a 2-year ARI event or greater), but that the standard in condition CM7A(b) *should* apply at all times (i.e. no exception) as it relates to a relative change in receiving water colour and clarity measured upstream of the discharge point, which would be expected to be turbid as a result of storm induced runoff anyway.
28. All experts listed on this JWS have had a further discussion on the Panel's preliminary view outlined in Minute 6A.
29. We note that the water quality monitoring will be undertaken at monthly intervals in accordance with Condition CM7(e) and this monitoring will be used to inform compliance with the proposed water quality standards listed in CM7A during construction of the Project.
30. The buildup of fine sediment on the bed is more a measure of cumulative effects on the substrate of a stream bed over time as a result of the potential discharges. Undertaking monthly monitoring will be used to determine whether any build-up of fine sediment downstream of the discharge point results from the Project's construction or from natural causes. Taking this into account, we are of the view that an ARI event exception is not applicable to Condition CM7A(a).
31. In contrast, we consider it would be logical that the water quality standard listed in Condition CM7A(b) should have the 2-year ARI (or greater) exclusion (i.e. not apply for 48 hours following a 2-year ARI (or greater) rainfall event). This is because this parameter may be more difficult to achieve following a high rainfall event. Whilst the water quality and clarity measured downstream of the discharge point are considered relative to the upstream point, we note that following a high rainfall event, sediment inputs into waterways may become spatially variable. High rainfall events can

result in highly unpredictable sediment pulses from earthworks catchments, particularly if preceded by wet weather periods when sediment devices are already at or near capacity. In turn, this may result in higher variability in water clarity upstream and downstream of the discharge point, compared with during more 'typical'/ frequent rainfall events that can be accommodated by the sediment controls. For these reasons, we consider it is appropriate for the standard in condition CM7A(b) not to apply following a 2-year ARI event or greater.

32. We also discussed how long the exclusion period should apply for, noting that in some instances it may take some time for sediment downstream to settle following events. It was agreed, however, that 48 hours was a reasonable period, so no further changes were made.
33. For completeness, we note we agree with the Panel's view that the standard listed in condition CM5(g) should not apply for 48 hours following a 2-year ARI event, as discussed above.
34. CH, MH and LG also note that in accordance with condition CM3(p), the Earthworks Management Plan will include an adverse weather response and contingency measures which will be implemented by the Applicant in response to any high rainfall event.
35. The proposed updates to the conditions addressed above are set out in the table in Appendix 1. It is noted consequential changes will also be required to proposed conditions CM7(e) to reflect these changes.

### **Topic 3: Response to monitoring**

36. We note the Panel's comments regarding more regular monitoring and reporting for water quality and wetland monitoring. We consider that the water quality monitoring and wetland monitoring are largely two separate matters and should be addressed independently, noting the water quality monitoring is largely to address effects during construction, namely the discharge of sediment into waterways, whilst the wetland monitoring is primarily a post-construction monitoring measure to confirm effects of the Project on wetlands do not exceed what is anticipated.

#### *Water Quality Monitoring*

37. Regarding an adaptive management response to water quality monitoring, Condition CM7(e) requires continuous monthly monitoring during

construction of the Project. Condition CM7(f) notes that if there is evidence of the relevant water quality standards downstream of the site not being met (as revised above) then Contact must immediately undertake any necessary maintenance of sediment control features, measures, or take other appropriate measures in order to ensure the ongoing and future effectiveness of water quality controls onsite. Therefore, we consider that the conditions as drafted appropriately provide for an adaptive management response in the event that the water quality monitoring shows the relevant standards are not being met.

38. CH, MH and LG note however the use of 'continuous' in proposed condition CM7(e) may imply the water quality monitoring occurs continuously throughout the month, which is not the intention of the condition. As such, CH, MH and LG propose to remove the word 'continuous' from this condition.

#### *Wetland Monitoring*

39. Condition EC11B is proposed to confirm that there are no additional effects on the wetlands on the Jedburgh Plateau beyond what is anticipated by the technical assessments, specifically the terrestrial and wetland ecology effects assessment and the conceptual hydrological design, and to confirm compliance with the consent conditions, in particular proposed condition EC8 which requires a maximum 2.5ha cap on wetland loss.
40. CH, MH and LG note the expert advice the Applicant has received is that with the implementation of the relevant management measures proposed, including the water management system on the Jedburgh Plateau and best practice construction measures, such as installing a low permeability clay bund in works within, or near, wetlands, the Project will not result in loss of wetland extent beyond what is permitted by the conditions. In other words, the proposed monitoring was intended to confirm an anticipated outcome, not to support an adaptive management regime, or to further investigate cause and effect in this instance.
41. CH and MH note as the conditions are currently drafted, in the unlikely event the results of this wetland monitoring identify that the Project has resulted in unanticipated loss of wetland extent, the Regional Council may review the conditions of the consent to address this effect in accordance with proposed condition G11 and section 128 of the Resource Management Act 1991.

42. We accept that amendments to the conditions could provide further detail on the response in the event the wetland monitoring identifies any adverse effects on the wetlands on the Jedburgh Plateau beyond what is anticipated by the conditions. We consider it is appropriate to include a clause in condition EC11B that requires further investigation by a Suitably Qualified and Experienced Person to confirm the extent of the effect of the Project on the wetlands to determine the appropriate management response to address the effect identified. We anticipate this will likely result in Contact adapting its water management system, potentially installing additional clay bunds/culverts or, where the effect cannot be completely avoided, remedied or mitigated, implementing additional compensation to ensure no net loss of wetland extent as a result of the Project.
43. We also note that linking the reporting requirements of the wetland monitoring to Condition CM27 may no longer be appropriate following the proposed amendments to Conditions EC11B in the Applicant's response to the section 53 comments. This is because the amended monitoring timeframes (extending to every year for 3 years following completion of construction and subsequently at years 8 and 13 following the completion of construction) no longer align with the reporting requirements required by CM27 (annually during construction, for the first five years of the operation of the wind farm and every five years thereafter). Therefore, we propose to amend the reporting requirements of proposed Condition EC11B to remove the link to CM27 and require Contact to provide the results of the monitoring to the Councils within three months of the completion of the monitoring.

### **Updates to Conditions**

44. The updates to the draft resource consent conditions proposed by the experts as an outcome of the conferencing are set out in the table in Appendix 1.
45. The updates to the conditions are agreed between the experts / where there is a difference in opinion in respect of condition updates, that is indicated in the table.

## SIGNATURES OF EXPERTS



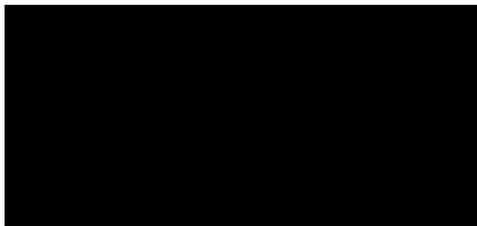
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Luke Gordon



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Claire Hunter



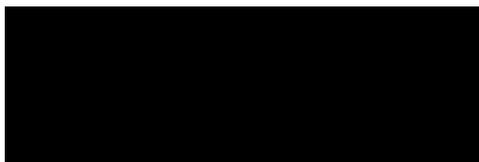
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Bruce Halligan



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Megan Hankey



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Ciaran Thayer

## Appendix 1: Proposed updates to draft resource consent conditions

Updates shown as tracked, with the Applicant's 'response to comments' version as the base

Condition	Proposed update
CM7(d)	<p>Areas of earth worked surfaces, vegetation clearance and land disturbance within the Project Site shall be progressively stabilised as soon as practicable in accordance with the TEMP so that sediment retention measures can be removed, and pre-existing stormwater pathways can be restored. <u>If an area is not subject to earthworks activity (including cut and fill batters) for a period of 14 days, or a time otherwise specified within a SSMP, the area shall be stabilised;</u></p>
CM5	<p>Erosion and sediment control measures implemented during the construction of the Southland Wind Farm shall meet the following performance standards:</p> <p>...</p> <p>(g) Sediment retention devices or measures must be designed, operated and maintained to achieve, when tested, clarity in the discharge of no less than 100mm as measured by secchi disc, clarity tube or equivalent. This performance standard shall not apply <del>where due to natural causes, this standard cannot be met,</del> <u>for 48 hours following a 2-year ARI event or greater, as defined by NIWA's High Intensity Rainfall Design System.</u></p>
CM7A	Delete condition
CM7B	Delete condition
New CM7A	<p><u>Water quality monitoring shall ensure that, for watercourses within the Project Site, the Project does not contribute to a breach of any of the following water quality standards:</u></p> <p>a) <u>The fine sediment (&lt;2mm diameter) bed cover, when measured as a percentage at the downstream edge of the reasonable mixing zone, must not increase by more than 10 percentage points from that measured immediately upstream of the discharge; and</u></p> <p>b) <u>There shall be no more than a 20% change in clarity or colour at the edge of the reasonable mixing zone, relative to the clarity or colour upstream of the discharge point.</u></p>

	<u>The standard listed in (b) shall not apply for 48 hours following a 2-year ARI event or greater, as defined by NIWA's High Intensity Rainfall Design System.</u>
CM7	<p>To minimise the adverse effects arising from the Southland Wind Farm construction on existing stormwater runoff patterns and water quality within the existing receiving surface water bodies, the following controls and measures shall be constructed and maintained by the Consent Holder:</p> <p>...</p> <p>e) Undertake <del>continuous</del> monitoring, with data collected at monthly intervals during construction in order to confirm that <del>'Mataura 3' (Mimihau Stream and Mokoreta River catchment) or 'Lowland Soft Bed' (Kaiwera Stream catchment) receiving quality</del> <u>the</u> water <u>quality</u> standards <u>listed in Condition CM7A</u> are being met; ...</p>
CM11B	<p>The Consent Holder shall engage a Suitably Qualified and Experienced Person to undertake monitoring of wetlands near to the Project Footprint prior to construction, during construction and post construction in accordance with the following:</p> <p>...</p> <p>d) Wetland monitoring shall occur as follows:</p> <ol style="list-style-type: none"> <li>i. Prior to the commencement of construction of the Southland Wind Farm;</li> <li>ii. Annually, for three (3) years following the completion of the construction of the Southland Wind Farm; and</li> <li>iii. Subsequently, at years eight (8) and thirteen (13) following the completion of the construction of the Southland Wind Farm.</li> </ol> <p>e) The results of this monitoring shall be provided to the Regional Council <del>with the annual reporting required by Condition CM27</del> <u>within three (3) months of the completion of each of the wetland monitoring periods outlined in EC11B(d) above.</u></p> <p><u>f) In the event the wetland monitoring determines the Project has resulted in a loss of wetland extent that exceeds the limit outlined in Condition EC8, the Consent Holder shall engage a Suitably Qualified and Experienced Person to undertake an investigation to confirm the extent of the effect of the Project on the wetlands, its likely cause and, where necessary, recommend measures to avoid, remedy, mitigate, or where required, offset and compensate for, the effects of the Project on wetlands where these are confirmed as a result of this reporting. The report shall be prepared in consultation with Te Ao Marama Incorporated.</u></p>

	<p><u>(on behalf of Ngāi Tahu ki Murihiku) and Southland Regional Council and be submitted to the Southland Regional Council within three months of the identification of the effect. The Consent Holder shall implement the recommendations of the report.</u></p>
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