

**In the matter** of the Resource Management Act 1991

**And**

**In the matter** of an application for Resource Consents by Oceania Dairy Limited to construct and operate a pipeline to discharge treated wastewater into the ocean.

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**STATEMENT OF EVIDENCE OF ROBERT JAMES GREENAWAY  
FOR OCEANIA DAIRY LIMITED**

**28 May 2020**

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## INTRODUCTION

- 1 My full name is Robert James Greenaway.
- 2 I hold a Diploma in Parks and Recreation Management (with Distinction) obtained from Lincoln University in 1987.
- 3 I am a Director of Rob Greenaway & Associates (R&R Consulting (NZ) Ltd) and have been since 1997. Prior to this, I was a Recreation and Tourism Consultant for Boffa Miskell Limited, from 1995 until 1997, and before that I held the same position at Tourism Resource Consultants, from 1990 until 1995.
- 4 I have comprehensive experience in undertaking recreation and reserve management planning assessments and have completed more than 500 recreation and tourism planning projects nationally and internationally. I have presented evidence at more than 80 hearings, many for marine and coastal developments; including several marine treated wastewater discharges (Whareroa for Fonterra and the South Taranaki District Council, Waimakariri for Alliance Farms, Nelson for Nelson City Council, Studholme for Fonterra, and I am currently working on assessment for the Porirua and Seaview wastewater discharges for Wellington Water), marina proposals (Waikawa, Lyttelton, Bayswater, Waiheke Island), port dredging and development (Lyttelton, Whangarei), marine mining (Taranaki), marine mining (Trans Tasman Resources in Taranaki), marine farming (King Salmon, Port Gore, Kaipara Harbour, Port Levy, Mercury Bay) and the wreck of the Rena. I have worked on many other marine recreation assessments throughout New Zealand for water supply, transport projects and reclamations.
- 5 I am an accredited Recreation Professional with Recreation Aotearoa (the New Zealand Recreation Association). I am also a past executive member of the National Executive of Recreation Aotearoa, and I am a member of the Recreation Aotearoa Board of Accreditation (and previous chair). In 2013 I was awarded the position of Fellow of Recreation Aotearoa. I am the Deputy Chair of the Nelson Marina Advisory Committee to the Nelson City Council. I am an experienced coastal sailor and own a 31ft keeler based in the Nelson Marina (and sailed solo around the North Island last year), and am a PADI certified scuba diver (since 1983). My last scuba dive was on the wreck of the Rena in 2016.

## CODE OF CONDUCT

- 6 While this is a Council Hearing, I acknowledge that I have read and am familiar with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014, and agree to comply with it. I confirm that this evidence is within my area of expertise, except where I state that this evidence is given in reliance on another person's evidence. I have considered all material facts that are known to me that might alter or detract from the opinions I express in this evidence.

## SCOPE OF EVIDENCE

- 7 My evidence considers the potential effects of the ocean outfall on coastal recreation. I prepared a relevant assessment in August 2019 which was attached to the consent application and which was summarised in section 7.8 of the AEE. My review was based on:
- (a) A site visit;
  - (b) Literature review and interviews with local fishers;
  - (c) Communication with Oceania Dairy and its consultants with regard to outfall design, construction and operation;
  - (d) Review of the reports on – particularly – potential human health risks (see the evidence of Mr Lobo Coutinho) and effects on marine ecology (see the evidence of Ms Annabelle Coates).

## EXECUTIVE SUMMARY

- 8 The study area – spanning the coast from Morven Beach Road in the north to the Waitaki River mouth in the south – has, in the main, very low levels of recreational use, with the exception of the Waitaki River mouth (**Error! Reference source not found.**). The Waitaki River mouth is a nationally significant recreation setting associated with salmon angling, jet boating and trout fishing. The remainder of the study area is of local significance only, with a focus at Morven Beach Road. There is very little public use of any other part of the study area, including the proposed discharge site at Archibald Road, which has no provisions for public access, although it features a road reserve connecting it with the formed road 750m to the west.
- 9 Several potential adverse effects on recreation have been identified. These are:
- (a) Potential adverse health effects resulting from direct exposure to contaminants and pathogens in the discharge via windborne sea spray or direct contact,

- (b) Potential adverse health effects from consumption of fish which have been exposed to contaminants and pathogens in the discharge,
  - (c) Effects of the discharge on the availability of fish species targeted for recreation (marine ecology),
  - (d) Interference with access and activity due to the location of new infrastructure in the recreation setting, and
  - (e) Temporary disruption of recreation activities during the construction period.
- 10 The operation of the outfall is indicated by Mr Coutinho and Ms Coates to have little or no potential for adverse effects on human health or marine ecology respectively. There is no potential for effects on any freshwater settings, including the popular Waitaki River mouth fishery. The only potential adverse effect from the operation of the pipeline is for entanglement of fishing gear, which is highly unlikely considering the poor access and rare use of the setting by anglers; and would only result if any new structure on the seafloor provided habitat for fish, and ipso facto, fishing.
- 11 There is no reason for a recreational vessel to ever be anchored near the outfall and therefore no restriction on local boating activity. Liaison will be required with the regional council harbourmaster over the requirement for a pipe marker beacon (white triangle Top Mark) to indicate the presence of the pipe to mariners, and, if one is required, the communication of its location to Land Information New Zealand (LINZ) for addition to marine charts. Notifying LINZ is a statutory requirement under the Maritime Transport Act.
- 12 Construction effects on recreation are unlikely due to the low level of use of the setting and the numerous proximate alternative beach access sites to similarly low-use settings. Closure of any part of the construction footprint during any season is unlikely to have any adverse effects on recreation.
- 13 There are no areas of public land – besides formed and unformed road and the seashore – where access will be affected during construction.
- 14 The net effect of the proposal on recreation is likely to be negligible.

## EVIDENCE

### Recreation setting description

- 15 In my assessment I have considered a study area extending from the Morven Beach Road in the north to Waitaki Huts in the south, a distance along the coast of almost 12km. This includes all the road reserves ('legal' or 'paper' roads) in this area – formed and unformed – which, at least theoretically, provide for public access to the coast. A legal road runs the length of the coast in the study area, with some sections of esplanade reserve, but all have almost entirely eroded into the sea or the beach and there is very little legal public access above the beach cliffs between each road end.
- 16 The coastal access sites are shown in my **Figure 1** in my **Attachment 1** (which includes all my figures). This shows the road locations on a topographical map, with the locations lettered as per my list below. **Figure 2** shows the legal access opportunities along the coast in the form of, in the main legal roads (formed and unformed) with the data sourced from the Walking Access Commission's online public access map<sup>1</sup>:
- (a) **Morven Beach Road.** This is the main formed public access point to the coast north of Waitaki Huts with unmaintained vehicle track to the coast along a road reserve, ending at a small car parking area. Quad bike access is possible onto the beach, and south along a grassed area above the beach – although this is on private land, with the coastal road reserve eroded into the sea and beach. The coastal cliffs are relatively low here, and gain height moving south. Dumping of soil, concrete, metal and wire is obvious.
  - (b) **Morris Road.** This site also features unmaintained vehicle access to the coast via road reserve. An esplanade reserve extends south along the coast inland from the coastal road reserve, but both are now beyond the coastal cliffs. The Morris Road Morven Glenavy Ikawai Irrigation (MGI) Lateral 11 outfall race periodically discharges unused water onto the beach, and vehicle access appears to have been formed to service this asset.
  - (c) **McLeays Road.** Although road reserve extends to the coast at the photo point, the formed road ends 1km from the coast and there is no apparent means of public access (a formed road continues to the south but is on private land). The McLeays Road MGI race outfall discharges at the coast (see Appendix 1).

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<sup>1</sup> The Walking Access Commission's online public access map includes many errors and omissions, but in this case it appears accurate for the coastal settings.

- (d) **Archibald Road.** This is the proposed outfall site. Road reserve extends to the coast for 750m from the formed road, but public access is not apparent, with farm signs and a gate suggesting private land (a formed road continues to the south but is on private land). Walking access to the coast follows the overflow terminus of a Morven Glenavy Ikawai Irrigation race. There is no formed track or evidence of frequent use, and walkers need to pick their way carefully at the top of the eroded gully leading to the beach. Dumped broken concrete is evident.
  - (e) **Mairos Road.** The formed part of Mairos Road ceases almost 1km from the coast, although road reserve carries on for this distance. There is no apparent form of easy public access to the coast, with farming activities suggesting private land.
  - (f) **Correls Road.** Correls and Mairos Roads are linked in the east by a road running parallel to the coast. Road reserve extends to the coast where this road forms an oblique corner, but there is no apparent opportunity for public access, with almost 700m of pasture and shelterbelt separating the coast and the formed road.
  - (g) **Andrews Road.** Access to the Waitaki River lagoon is possible via an unmaintained vehicle track on road reserve extending from the formed section of Andrews Road to the lagoon. Walking access from the end of the vehicle track is a scramble over rough ground, weeds and some dumped concrete. Access to the coast – without swimming or a boat – is prevented by cliffs to the north and south, and the lagoon to the east.
  - (h) **Waitaki Huts / Glenavy Fishing Camp.** This area provides significant walking and boating access opportunities for the lower Waitaki River and the river mouth lagoon. Access to the coast requires a boat. The Glenavy Fishing Camp is owned and regulated by a society incorporated in 1958 (Glenavy Fishing Camp Inc) which provides for individual ownership of 59 baches on sites leased by members of the society on collectively-held land.
- 17 There is an esplanade reserve running south from Morris Road to Archibald road immediately inland of the legal road which runs the length of the coast in the study area, but neither it nor the roads provide for practical public access due to coastal erosion.
- 18 The Department of Conservation manages two conservation areas near the study area. The Wainono Lagoon and Wainono Lagoon Foreshore Conservation Area (which includes the 'Waihao Box Government Purpose Reserve Wildlife Management' extending for 3.3 km north of the Waihao Box beside the coast), 10 km

north of the proposed outfall, is identified in the 2016 Canterbury Conservation Management Strategy as a Stewardship Area and as 'priority ecosystem' (Vol 2 map table 7.23 p92). Various Conservation Areas at the mouth of the Waitaki River are 7 km south of the proposed outfall.

- 19 The Waimate District Council District Plan 2014 identifies the Waihao Box, 10km north of the proposed outfall, as a Significant Natural Feature for the purpose of 'wildlife and wetlands' (Plan maps 23 and 24). The Recreation Reserves at the Waihao Box have designations for the purpose of recreation. There are no similar designations further south.
- 20 The Waihao Mātaitai Reserve for customary fishing is located 10km north of the study area.
- 21 The Regional Coastal Environment Plan (RCEP) for the Canterbury Region (2005 amended 20 Sept 2012)) identifies the Wainono to Waihao River Mouth area and the coast between the Waitaki River mouth and Carrolls Road (200m from MHWS) as Significant Natural Areas, but does not describe those coastal setting as areas with minimum water quality class management requirements for contact recreation or for shellfish gathering (Schedules 4 and 5 of the RCEP) (the nearest Water Quality Areas are just south of Timaru at Tuhawaiki Point and Normanby).
- 22 Water quality classes are established to "set water quality standards and control the discharge of contaminants and water within the parts of the Coastal Marine Area defined in Schedule 5 that contain areas of degraded water quality or which need classifications to reflect existing or potential uses of the areas" (Policy 7.2).
- 23 The Waihao Box and the outlet from the Waihao River and the Wainono Lagoon are identified as "Protected Recreational, Cultural or Historic Structures" (Schedule 5.12). There are no other such sites further south.
- 24 The Central South Island Fish & Game Council is responsible for managing gamebird hunting on public and private land in the study area. The CSI Fish & Game Council owns freehold land to the south of Wainono Lagoon and there are no balloted hunting areas in the study area.

## Recreation use

- 25 Interviews with three local anglers<sup>2</sup> suggest the following use patterns of the study area:
- (a) The main angler and beach access points near Archibald Road are Morven Beach Road and the Waitaki River Mouth, although a few local anglers might use some of the road-ends in between.
  - (b) Quad bikes can access the northern seaward end of the Waitaki River mouth via Morven Beach Road and travelling south past Archibald Rd, or via Andrews Rd (immediately north of Glenavy) and down 'Andrews Gully'. Access onto the beach at each point can be tricky depending on recent erosion events.
  - (c) There is nothing remarkable about the angling setting between Morven Beach Rd and the Waitaki River mouth, although elephant fish and rig – the main local species – can be caught at most sites where there is good depth. Hook Beach (north Wainono Lagoon) is popular – and the site of an annual fishing competition – since the beach shelves quite rapidly and there is good water close to casting distance. In other areas, and at Hook Beach, motorised kontikis can be used to take lines more than 1km offshore.
  - (d) It generally takes a fortnight of north-easterly winds to create a southward near-shore current at the Waitaki River mouth.
  - (e) White baiting, salmon and trout fishing at the Waitaki mouth are the main recreation activities near the study area.
- 26 **Figure 3** shows the inshore marine setting in the study area has not been surveyed, like much of inshore Canterbury Bight beyond port areas. The note referred to in the LINZ marine chart NZ64 (2003 updated to 2014) states, "Due to the exposed nature of the coast, certain inshore areas remain unsurveyed." Other areas of surveyed coast to the north and south show the sea bed reaching 10 m depth just over 1500 m from the shore.
- 27 The various marine and freshwater fishing guide publications that I referred to in my recreation assessment attached to the consent application described the nearest fishing locations at the Waitaki River Mouth to the south (trout, salmon, whitebait, kahawai) and at the Waihao Box to the north (surfcasting off the beach, but also freshwater fishing in the Waihao River).

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<sup>2</sup> Opinions given were personal and not representative of the agencies to which they belong: Ken Barker: Management committee member, Hook Beach Fishing Competition; Linn Koevoet, Waitaki Riparian Enhancement Society; Craig Rowley, Waimate Anglers Club



- 28 The Canterbury Regional Council monitors recreational water quality for popular marine and freshwater swimming sites throughout the region. Near the study area, the closest monitored marine swimming site is at Timaru in the north (by ECan), and at Hampden Beach (near Moeraki) in the south (by the Otago Regional Council).<sup>3</sup>
- 29 The Central South Island Fish & Game Council web information for local hunting options are confined to Lake Wainono and the Wainono Wetlands:<sup>4</sup> Hunting will occur throughout the study area and on both private and public land, focused around bodies of water for ducks and pasture for shelducks.
- 30 In summary, The study area is, in the main, a very infrequently used setting for fishing – primarily surf casting and the use of kontikis – although there is nothing in the majority of the setting that would attract activity, besides the availability of access at a few points. Some low levels of coastal walking at beach access points is likely, particularly Morven Beach Road. The exception is the Waitaki River Mouth, which is nationally significant for salmon fishing, and with some of that fishing occurring in the surf near the mouth. Whitebaiting is popular. Kahawai and sea-run brown trout are also taken. There does not appear to be any swimming (which would be unwise due to sea and beach conditions) or other forms of water-contact recreation in the study area.
- 31 The outfall site at Archibald Road has poor provisions for public access and very low levels of recreational use.

### Effects assessment

- 32 I have identified several potential adverse effects on recreation. These are:
- (a) Potential adverse health effects resulting from direct exposure to contaminants and pathogens in the discharge via windborne sea spray or direct contact,
  - (b) Potential adverse health effects from consumption of fish which have been exposed to contaminants and pathogens in the discharge,
  - (c) Effects of the discharge on the availability of fish species targeted for recreation (marine ecology),
  - (d) Interference with access and activity due to the location of new infrastructure in the recreation setting, and
  - (e) Temporary disruption of recreation activities during the construction period.

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<sup>3</sup> <https://www.lawa.org.nz/explore-data/canterbury-region/swimming/mid-caroline-bay/swimsite> and <https://www.lawa.org.nz/explore-data/otago-region/swimming/hampden-beach-at-campground/swimsite>

<sup>4</sup> <http://centralsouthisland.fishandgame.org.nz/local-hunting-regulations-5>

33 I address of these potential adverse effects is below.

### **Contaminants and pathogens**

34 Mr Coutinho, in his evidence, considers the coastal access areas that I have identified, and reviews the rate of dilution of treated wastewater near the discharge point, along the coast and out to sea. A dilution of at least 300x was identified within 50m (the mixing zone) of the discharge in all modelled wind and wave conditions, apart from when completely calm, which is a rare event occurring approximately 2% of the time, and persisting for more than 6 hours approximately once every 2 years, and for more than 12 hours once every 4 years. In those very calm conditions, dilution rates at the shore immediately adjacent to the outfall are above 600x, and decline to more than 750x at points 1600m north and south (at McLeays Road and Mairors Road respectively). In any windy condition, these dilution rates at the shore are more than doubled.

35 The potential for effects on human health from contact with the wastewater in the discharge is also considered by Mr Coutinho. His assessment correctly identifies that there is very little potential for people to come in direct contact with the wastewater considering the absence of water-contact recreation in the affected area; and an absence of shellfish gathering. A conservative dilution level of 300x was used in the health assessment (ie, that modelled within 50m of the discharge), and the ability of any pathogens to become airborne via breaking surf on the beach (aerosolisation). The assessment also considered the existing wastewater discharges from the dairy factory rather than that which would result from the increased level of treatment proposed.

36 While very low levels of some pathogens were detected in the existing wastewater discharge – potentially the result of growths within conveyances – the existing wastewater – if discharged via the pipeline proposed, was considered to have ‘negligible’ potential to create a public health risk.

### **Marine ecology**

37 Ms Coates, in her evidence, identifies that the quality of the discharge has very limited potential to have an effect on the habitat of fish species along the local coastline, largely due to the quality of the discharge, the natural sparseness of habitat and the natural mobility of fish species. The affected area is described as of ‘low’ ecological value for fish, which reflects the low level of angler interest in the area. There is no identified breeding area for fish in the outfall area due to the inhospitable nature of the seabed (fine sand over a sand and gravel mix). Ms Coates notes that the affected area is prone to natural changes in salinity and water clarity due to the discharge of the Waitaki River 7.5km to the south, and while fish species may avoid a discharge plume of freshwater, the area affected is very confined (tens of metres),

and depending on the final structure installed (such as an exposed pipe or diffuser on the seabed) it may create habitat of interest to fish. Either way, Bioreserches find the potential for adverse effects on fish species to be low. There are no sufficiently local freshwater habitats which could be affected by the discharge.

### **New infrastructure**

- 38 The proposed outfall pipe will follow Archibald Road north and then east from the dairy factory, and then extend for 500m into the sea from the end of Archibald Road. The part of the outfall on land will either be within Waimate District Council road reserve, or within easements owned by the Morven Glenavy Ikawai Irrigation Scheme. There will be no effect on public access onshore considering that the pipe is to be buried.
- 39 There is no reason for a recreational vessel to ever be anchored near the outfall and therefore no restriction on local boating activity. Liaison will be required with the regional council harbourmaster over the requirement for a pipe marker beacon (white triangle Top Mark) to indicate the presence of the pipe to mariners, and, if one is required, the communication of its location to Land Information New Zealand (LINZ) for addition to marine charts.
- 40 Ms Coates, in her evidence, notes that the structure of the local fish population may change slightly as a result of the introduction of a hard substrate if the outfall remains exposed on the seabed, as new habitat will be available. There could therefore be increased interest in fishing near the outfall pipe if it is an exposed structure, with the concomitant potential for snagging fishing gear. This is an angler's normal trade-off. If the outfall is buried or drilled, there is expected to be no change to the fish community once construction is complete.

### **Construction**

- 41 The Archibald Road area is rarely used as a recreation setting, and there are multiple nearby beach access opportunities north and south. There is very little potential for recreational visitors to be displaced from coastal recreation during the construction period, regardless of the duration or season.
- 42 Ms Coates indicates little potential for adverse effects on marine biota and rapid recovery from the small amount of necessary disturbance of the sea floor.

## **MITIGATIONS AND CONDITIONS**

- 43 There are no effects on recreation which require mitigation. The Regional Council Harbour Master will need to decide if a pipe marker beacon on the shore will be required to indicate the location of the pipe and outfall to mariners. Notifying LINZ is a

statutory requirement under the Maritime Transport Act and does not need to form part of a consent condition.

44 The proposed conditions are therefore suitable to the application.

## **SUMMARY AND CONCLUSION**

45 The operation of the outfall is indicated by Ms Coates and Mr Coutinho, in their evidence, to have little or no potential for adverse effects on human health or marine ecology respectively. There is no potential for effects on any freshwater settings, including the popular Waitaki River Mouth fishery. The only potential adverse effect from the operation of the pipeline is for entanglement of fishing gear, which is highly unlikely considering the poor access and rare use of the setting by anglers; and would only result if any new structure on the seafloor provided habitat for fish, and ipso facto, fishing.

46 Construction effects on recreation are unlikely due to the low level of use of the setting and the numerous proximate alternative beach access sites to similarly low-use settings. Closure of any part of the construction footprint during any season is unlikely to have any adverse effects on recreation.

47 There are no areas of public land – besides formed and unformed road and the seashore – where access will be affected during construction.

48 The net effect of the proposal on recreation is likely to be negligible.

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Robert Greenaway

28 May 2020

## Attachment 1: Figures

Figure 1: Study area with identified access points and proposed outfall location



Figure 2: Public access – WAMS output



Figure 3: NZ 64 chart detail for study area (LINZ)

