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.

STATEMENT OF EVIDENCE OF SHANE RALPH LODGE FOR OCEANIA DAIRY LIMITED

28th May 2020

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INTRODUCTION

1 My full name is Shane Ralph Lodge. I hold a Bachelor of Agricultural Science from Lincoln University

2 I hold 38 years' experience in the dairy industry working in both Government departments (MAF – now MPI) and dairy processing companies.

3 I confirm that my current role is the Supply and Environment Manager for Oceania Dairies Limited (ODL). The role performed by me and my team is to manage the farm supplier base, and the quality of milk received at the plant. My role is to also ensure regulatory compliance across the supplier and processing plant – assisting farmers to meet their on-farm environmental targets and the milk quality requirements for the receipt of raw product at the Glenavy site.

4 I have also been responsible for regulatory compliance at Oceania. That role has been in co-ordinating regulatory compliance with the three main Councils which we deal with, Waimate, Otago Regional Council and ECan – as well as managing new consent processes – such as this one – in order to ensure that ODL is able to meet environmental compliance as the milk volume and product type continues to grow.

5 I confirm that I am authorised to present this statement on behalf of the company and to respond to any questions regarding the plant's operation.

6 I confirm also that I have directed the preparation of the drone footage which is being presented to this hearing – and the -subtitles on the footage to better inform the hearing of the various aspects of the current wastewater operations. I did not fly the drone, so there is a separate statement from Greg Clarkson as to the technical details of the flights. However, on any issues requiring clarification, I am happy to answer any questions.

7 In broad terms the drone footage falls into 4 primary categories:

7.1 Firstly, there is a general flyover of the current dairy processing plant on Cooneys Road. This footage was prepared weeks ago and forwarded to the Commissioners for their general approval of drone footage; and

7.2 Secondly, the drone flies over the current land based waste water discharge fields and it outlines the position of the various pivots that discharge water from the plant – it also presents a visual outline of the extent of the land which is provided for in the current discharge consent.

7.3 Thirdly , there are four footages, that make up the route proposed for the new ocean outfall to the Pacific Coast. Sequentially these start from the processing plant

following Cooneys and Archibald Roads and end with the footage at the end of Archibalds Road from the foreshore; and

7.4 Lastly the last drone flyover is of the Coastline and it shows the view back to the coast in approximate terms from the point of discharge.

7.5 I confirm that the drone footage has not been digitally modified in any way other the addition of subtitles and being put into drop boxes so that it is more easily viewed by those participating in this hearing. It is simply produced as an aid to the various diagrams and images that accompany the AEE and Oceania's evidence to this hearing.

PRELIMINARY INTRODUCTION TO THE APPLICANT AND THE PURPOSE OF THIS APPLICATION FOR CONSENT

8 ODL is a New Zealand Company that is fully owned by YiLi - which as I indicate below is China's largest dairy supplier, with its head office based in Hohhot, Inner Mongolia.

9 ODL fits into the Yili supply chain, in tandem with Westland Dairy Products, to assist with supply primarily into the Chinese markets.

10 It operates here as a New Zealand managed operation with a leadership team based at Glenavy,

11 Its aspirations are for a fully functional and compliant processing plant, which adopts the highest standards to manage year-round milk production at its Glenavy site.

12 The long-term predictions are for continued supply growth and product development and diversification.

13 These aspirations are the impetus for this suite of consents to establish an ocean outfall for the site, as an addition to land-based wastewater disposal for the plant. While some dairy processing plants are located inland, a large number have facilities connected to ocean outfalls, to ensure year-round discharge capability – whatever the onshore conditions are. Oceania want to make it clear, that they do not want to relinquish their land-based consents but want to increase capacity and the overall resilience of the wastewater operations to ensure year-round viability.

14 Importantly the plant's relative isolation from any townships or major centres makes the ocean outfall a feasible option provided environmental safeguards are put in place to protect the water quality parameters of the discharge.

15 For this reason, the application for ocean outfall comes in tandem with greater on-site treatment of the wastewater prior to discharge.

16 It is also important for ODL to be a good community citizen, and to this end the ocean outfall will eliminate some dissatisfaction with current operations resulting from odour, particularly when a pipeline to an irrigation unit has not been used for some time.

SCOPE OF EVIDENCE

17 My evidence will cover the following matters:

17.1 A history of ODL at Glenavy;

17.2 Factory processes and products made on-site;

17.3 Future plans;

17.4 The current land discharge system;

17.5 Background to the ocean outfall option;

17.6 Benefits of the ocean outfall;

17.7 Consultation ODL has undertaken; and

17.8 Positive effects of the project.

18 I now turn to provide evidence on these individual topics.

A history of ODL at Glenavy

19 Oceania Dairy Limited was incorporated in 2008 by a group of businessmen planning to set up a dairy processing plant manufacturing milk powders for export. The Company had an agreement to purchase 38ha of land at Cooney's Road Glenavy and obtained several core Resource Consents granted in 2010 relating to the operation of a dairy plant. Initial plans were for wastewater storage and irrigation – the storage option was discounted due to local objections and concerns around negative environmental impacts

20 The planned build did not eventuate.

20.1 In 2012 the Inner Mongolia Yili Industrial Group Company Limited (Yili) China's largest dairy company; decided to purchase the Company and complete the land purchase. This Yili's first investment in New Zealand; was made to consolidate access to New Zealand's dairy products and to allow for the development of products that are part of a Yili chain from" pasture to plate". Yili remains a large customer of products from

other NZ manufacturers such as Fonterra, Open Country and Synlait as the demand for NZ dairy products continues to grow.

20.2 The purchase was subject to OIO approval which was applied for on 20 November 2012 and was granted on 28 March 2013.The purchase was completed after the OIO decision was announced.

20.3 While this consent relates solely to the discharge of wastewater streams it is probably worth summarising some of the attributes of the overall site.

20.4 It is located in the farming community north of Glenavy in a relatively sparsely populated area of South Canterbury.

20.5 It has immediate access to State Highway 1 and the main trunk line, and, for the purposes of this application, is located very close to the Coast, about 7kms via Cooneys and Archibalds Road.

20.6 ODL is very much in a mid-catchment position for its supplier base. Large areas of flat land adjacent to the Waitaki and Waihao Rivers have been developed for dairy farming over the last two decades – with suppliers extending to areas in the Duntroon area to the west, Otipua in the north, Waianakarua to the South (50km radius Supply area) . ODL has followed the establishment of irrigation schemes in the lower Waitaki and the Morven Glenavy scheme.

20.7 Obviously, the plant provides regional employment opportunities – and the servicing and technical support for the plant provides sustained local employment and the service industries which benefit from the plant's infrastructure and employee base.

20.8 There is a plentiful supply of bore water available for processing and an off take from the Morven Glenavy scheme.

20.9 Accordingly, there are a number of physical factors that make the establishment of dairy processing plant desirable at this location, and more sustainable, in overall terms to have milk processing as close as possible to the supplier base.

CONSTRUCTION

21 Babbage was contracted by Yili to manage the project including the build, installation of equipment and the application for resource consents to enable the operation of a milk processing plant.

22 The following consents were obtained from Environment Canterbury (ECAN) in 2013 and 2014 to allow for the ongoing operation of a milk processing plant:

- CRC141964 To discharge contaminants in industrial wastewater to land

- CRC141966 To discharge stormwater to land
- CRC141967 To discharge contaminants to land (domestic wastewater)
- CRC141965 To discharge contaminants to air
- CRC146249 To take and use water

23 Construction of Stage 1 was completed in August 2014 with first milk being received in site on 4th August and first powder manufactured on 5th August 2014.

24 Yili have always planned to develop the site in several stages over time.

25 Stage 1 – the construction of:

- 10MT/ hour dryer, producing whole milk powder and different specifications of nutritional powders. The dryer was commissioned in 2014 and first product was made in August 2014.
- Coal fired boiler and control room, water treatment plant and Dissolved Air Flotation (DAF) wastewater treatment plant and wastewater tanks.
- Drystore, Admin offices and Laboratory

26 Stage Two was the building of the

- UHT plant which produces 250ml and 1 litre packs of UHT milk on two separate lines, this was commissioned in 2018. A second 250ml line was added and commissioned in 2019.
- Canning and Blending plant producing 800g ang 900g cans of infant formula was commissioned in 2018. A smaller second Canning and Blending plant has been added which was commissioned in 2020, which is producing smaller 130,180 and 405gram cans.
- An extension of the dry store to enable the storage of product and packaging materials.
- An increase in wastewater treatment capacity by the addition of a second DAF plant.

27 Currently under construction is a new Laboratory to enable all testing of product to be conducted on site. This will employ an additional 25 staff.

28 Investment so far by Yili on site is in excess of $476 million dollars

29 The diversification of product lines during stage 2 has meant that the year-round capability of the plant has altered from a purely whole milk powder plant operation when it was initially established.

30 Stage 3 will include an additional processing plant (a dryer) – yet to be confirmed and an increase in wastewater treatment and disposal capacity. The application for this consent is the preparatory work for Stage 3.

31 ODL already holds the land use consents from the Waimate District Council for the additional dryer – but this consent would be necessary for full capacity operation of the second dryer. However, given the significant capital expenditure, involved in an ocean outfall, the design supporting this application, extends to provide plant capability beyond Stage 3. This will be subject to further investment from Yili on the site – but given their global presence, it is reasonable to assume that over the life of the resource consent, the capability will be required.

WATER REDUCTION PROJECTS AT ODL

32 Over the last 4 years ODL has invested in a number of water reduction projects that have reduced the water requirements of the site and reduced the levels of wastewater per tonne of product produced. These include minimisation of both water usage and wastewater volumes. Both a current and ongoing priorities for ODL. Currently installed initiatives saving an average of 120,000 litres per day include:

- recovering RO retentate,
- recovering caustic cleaning solutions,
- recovering final cleaning rinse flushes

33 Current investment in a cow water recovery programme will reduce the amount of cow water that is irrigated to land by 90% (a reduction of approx. 140 million litres per year) The current Chemical Reuse Project will save an additional 100,000 litres of wastewater per day.

34 While these projects aim to produce savings in an overall water budget, it is important for plant resilience that the ocean outfall is of sufficient capacity to cope with future milk intakes and product mix.

SUPPLIERS AND STAFF

35 ODL collects milk from 73 farmer Suppliers all within a 50 km radius of the site. In 2014 there were 49 suppliers rising to 64 supplies in 2015, 67 suppliers in 2016 and to the current 73

suppliers in 2017. Future growth at ODL will not be due to dairy conversions. ODL offers an option to Fonterra Suppliers. We have expressions of interest from enough Fonterra suppliers to fill a new dryer without any further dairy conversion. Growth from existing ODL suppliers will also require additional processing capacity.

36 ODL operated with a maximum of 70 staff in its first year of production. Current full-time staffing sits at 351; made up of 316 ODL staff, 27 Hilton Haulage milk transport staff, 7 contracted electricians and automation staff, and 1 solid waste management staff member. In addition, up 45 temporary staff are employed at any given time depending on what product is being made.

37 ODL is a significant employer in the South Canterbury/North Otago area. The economic effect in the local area is significant with a payroll in excess of $23 million dollars. Payments to farmers for milk in the 2018-19 dairy season exceeded $143 million and is projected to be in excess of $161 million in the 2019-20 season. 40% of staff live in Oamaru, 38% in Timaru and 22% in Waimate and district.

38 Where possible ODL utilises local contractors and services increasing the economic impact on the local community.

39 ODL sponsors a range of local community initiatives -primarily focussing on education, children and the environment. It also sponsors a top performing student from a high school servicing our Supply area annually. The scholarship is for 3 years of tertiary study and includes $3000.00 per year and a guaranteed job at the site for all varsity holidays during this period. 2 of the scholarship students in the last 6 years have taken full time jobs on site.

FACTORY PROCESSES AND PRODUCTS MADE ON-SITE

40 ODL is registered by the NZ Government as a Dairy Exporter and operates under 2 MPI registered Risk Management Programmes – one for Dairy Processing and one for Farm Dairy milk harvesting and storage.

41 All products manufactured at ODL are exported from NZ. The majority of products made go the parent company in China. A small but growing number of products go to a range of other countries.

42 The processing capacity on site is:

- a dryer capable of making 10 tonne of whole milk powder per hour. It also produces infant formula complex base powder for use in the canning and blending plants, infant formula base powder for further processing offshore and other nutritional powders;

- A small AMF (anhydrous milk fat) plant that can process surplus cream that packages AMF into 210 litre drums (3000 litres AMF per hour). In this season surplus cream has been shipped to Westland Milk Products the other Yili owned dairy processor in NZ.

- a canning and blending plant for 800 and 900g cans of infant formula. ODL is registered to produce 2 infant formula by the Chinese Government. This plant is also used to can whole milk powder for the Chinese market;

- A UHT (ultra-high temperature) plant with 2 250ml pack lines and 1 1 litre pack line. This plant operates throughout the year and ODL has winter milk contracts with 9 dairy farmers who calve part of their dairy herd in the autumn who supply milk all year around.

- A canning and blending plant designed to can infant formula into 130 and 180g cans.

FUTURE

43 When purchasing the ODL company and site Yili made a commitment to maintaining and growing their investment.in South Canterbury. They are in it for the long term. There are further stages planned for ODL Stage 3 expansion is in the planning stage. The application for this consent is part of the preparatory planning for an increase in processing capacity. The option proposed is supported as it complements the current wastewater disposal system and improves long term sustainability. Oceania's ability to satisfactorily discharge wastewater sustainably will also determine what the future stages will be.

THE CURRENT LAND DISCHARGE SYSTEM

44 The wastewater streams that require treatment from the ODL processing plant are primarily the rinse water and washing solutions used in the milk drying, AMF and UHT processes and cleaning of the processing environment. The canning and blending plants do not use water.

45 Water evaporated from milk (Cow water or condensate) is not further treated but disposed to land with or separately from the treated wastewater. Uncontaminated storm water runoff from the roofs and hard surfaces of the site are disposed of through a number of infiltration basins around the site.

46 The treatment system used at the ODL site to treat the wastewater streams is a DAF processing plant this involves:

- Storage and buffering of raw wastewater
- DAF treatment for the removal of fats and protein residues

- Lime dosing to return the wastewater pH and sodium to a level suitable for irrigation to land
- Followed by discharge to land.

47 Under the current consent there is 412 ha consented for wastewater disposal. The total land area on the initial irrigation area comprises 316.316 ha of which 272ha are under pivots available for discharge to land. This was the initial area calculated to be required for the plant, at capacity. The difference in the area is made up of areas not covered by the pivots and areas not currently being irrigated such as corner areas.

48 All of this is on the "home property" owned by the Van Leeuwen Group Limited. I attach an aerial photo of this property showing its location in relation to the Oceania Dairies Processing plant.

49 There is a further 6 ha under a fixed grid irrigation – this strip of land runs along the State Highway and it is used solely for Cow Water/Clean water disposal.

50 A further 90 hectares on a separate block is consented but not irrigated due to the timing of M Bovis and its effects on the landowner's overall operations.

51 The balance area (44 ha)to make up the overall consented area, is made up of land not covered by pivots due to paddock shape, comprising dryland grassed areas, dryland Lucerne and borderdyke. Farm races, irrigation races and dairy farm working areas cover the balance.

52 Wastewater from the factory is pumped into a holding tank then processed through 2 DAF (Dissolved Air Flotation) plants removing suspended solids (fat and protein) from the wastewater.

53 Wastewater is then pH adjusted and pumped into a holding tank and discharged to land through the 6 centre pivot irrigators. There is storage for approximately 48 hours".

54 'Clean' wastewater from the evaporation of water from the milk is discharged through fixed grid irrigators on land which is leased from the Waimate District Council. There are 6 hectares on this section of land called "the Zones". This area is immediately adjacent to the plant and is visible in the first footage.

55 The irrigation of wastewater and cow water through the irrigation system is measured with automatic recording of dates, times, volumes, rates of liquid irrigated on the areas. The central pivot irrigators are fitted with Variable Rate Irrigation (VRI) technology to allow the rate of irrigation to vary across and around a pivoted area.

56 Automatic sampling of treated wastewater being irrigated is taken over 24-hour periods. Samples are sent to Hills Laboratory every 10 days for measurement o fa range of parameters required by the consent. These results are used to calculate the amounts of nitrogen, phosphorus applied to land in 3 and 12months periods as required under the consent. A sample of the test results during peak season is attached to my evidence as Appendix A.

57 Also carried out as part of the wastewater treatment system are groundwater samples and neighbouring farmer bore samples to monitor any effects that the irrigation may have on the ground water.

58 These are reported to ECAN in an annual report prepared in June (after the end of the processing season). Wastewater test results are also reported monthly.

59 ODL operates within the conditions of its consent. There are periods after heavy or prolonged rainfall when irrigation, purely from a farming perspective is not to best practice although nitrogen, phosphorus and groundwater parameters are not affected. The ocean outfall option was recommended by ODL management as it will allow management of wastewater disposal to so that irrigation best practice will be able to be met consistently.

60 I am emphasising consistent irrigation best practice here because while consent conditions are fully complied with, the plant's operations do not always dovetail with the maize cropping on the wastewater disposal area.

61 There are times obviously during harvest and ground preparation, for example where the full irrigation capability is not available to us. In addition, there is a period following sowing through germination where no irrigation water can be discharged through some of the pivots. Accordingly, it requires a high degree of co-ordination between farmer and ODL to streamline current irrigation availability.

62 We accept that for any land-based system where we are working in with a farmer's crop cycles, that there will be times of the year where irrigation is not ideal, but still within consent parameters,

63 This forms a strong part of the reasoning as to why this consent is being applied for.

64 Any complaints relating to the irrigation of wastewater are recorded in the company's Complaints Register. In the last 2months there have been 4 complaints re: irrigation practice, and 2 odour complaints. Complaints are logged followed up and actions taken.

BACKGROUND TO THE OCEAN OUTFALL OPTION

65 It was always planned that wastewater disposal would need to be reviewed and options for increase identified as part of Stage 3 development

66 To consider any future processing development at the ODL site a treatment and disposal proposal that will mitigate the existing challenges of land disposal of wastewater is required. The option proposed by Babbage that best does this is the current ocean outfall proposal. This is the most suitable and reliable option not affected by seasonal rainfall and plant growth variations.

67 The ocean outfall option requires further processing of the wastewater to meet the conditions of the proposed consent and meet the standards outlined in the Assessment of Environmental Affects documentation.

68 The ocean outfall option proposed by Babbage was supported by ODL as it allows better management of the current wastewater irrigation system.

69 Land based disposal of wastewater comes with several challenges. It is difficult to manage through the late autumn, winter and early spring due to low plant growth rates and saturated soils.

70 It is now becoming more difficult to obtain resource consent to discharge wastewater to land due to farms having already made changes to irrigation infrastructure from border dyke to spray in response to the changing terms of the irrigation scheme resource consents This dramatically diminishes the pool of land available for land disposal. While the current irrigation block is cut and carry with the resource consent requiring that the land cannot by grazed by animals nor used to feed out to animals; other land in the area is predominantly stocked. Additional land irrigation while one of the preferred options is not feasible and unlikely to be consented.

71 There are several reasons for this:

71.1 I have already outlined that irrigation water is unlikely to be attractive to neighbouring farmers during winter and shoulder seasons;

71.2 It also imbalances any farmer's current nutrient budget allowance that they either report through individually to Ecan or as part of the Morven Glenavy Scheme budget.

71.3 Our advice from experts is that it will be preferable in the long run to have capability for land based and ocean outfall to manage optimally our need to discharge wastewater on a year round basis.

72

BENEFITS OF THE OCEAN OUTFALL

73 The benefits of the ocean outfall include the better management of wastewater and sustainable irrigation. A mix of disposal options i.e. ocean outfall and land-based disposal

would create a more sustainable disposal system. In practise this could mean irrigating to land over the summer. During the cooler wetter months or at times of soil moisture surplus using the ocean outfall adds the flexibility needed.

74 The work has been done that shows that the effects of the construction and operation of the ocean outfall are short term, minimal or less than minor.

75 The benefits outlined to local community of expansion of the ODL site and consistent management of land irrigation are considerable.

MANAGEMENT BETWEEN THE LAND-BASED IRRIGATION CONSENT AND THE OCEAN OUTFALL

76 I have already indicated in this evidence that the ocean outfall will provide resilience to the overall plant operations.

77 As Mr Duder in his evidence explains the diversion to ocean outfall requires further treatment, after DAF treatment at the plant.

78 From an operational perspective, this will be managed by our on-site control centre, and will effectively be the “flick of a switch” to divert water destined for irrigation use, through to the additional treatment, for ocean outfall.

79 I do not consider that this will be micromanaged. My evidence identifies distinct times of the year when ocean outfall will be preferred, and I envisage that it will be operated continuously during that period. These are the winter and shoulder periods. However, there needs to be a system of flexibility in the system to accommodate our farmer preferences – particularly at times when there are autumn and winter droughts or low spring rainfall.

80 I have also indicated that there are times where the maize fields are being cultivated, planted, germinated, and harvested, when land based irrigation over the maize fields is unsuitable.

81 At other times of the year irrigation maintenance or ocean outfall maintenance will dictate our pattern of use for the ocean outfall.

82 I do not want one system to be a preferential system over the other – but rather the need is for both systems to be fully operative in tandem. We have a working relationship with Van Leeuwen Farms and that relationship needs to be maintained so that we can accommodate the farm’s irrigation preferences – where conditions are suitable.

83 Where our wastewater can be accommodated within that system, the preference for Oceania is to be a good neighbour and provide water for irrigation purposes. But there are many factors which dictate which preference will be adopted - and those factors need to be

evaluated in the round before determining which mode of waste water is selected. I list these factors as follows, in no particular order:

Climatic
Sea conditions
Soil temperatures
Soil Saturation levels
Maintenance of either system
Crop cycles
Plant shut down
Lower level production periods
On site storage availability (48 hours)
Plant development and implementation periods
Seasonal production fluctuations
Other on-farm preferences where works on farm are being undertaken
The operation of the irrigation scheme

84 All of these factors will be taken into account in terms of the plant's operational management plan to determine the most appropriate outcome for wastewater management.

CONSULTATION ODL HAS UNDERTAKEN

85 ODL and Babbage have consulted with the local community on this proposal.

86 Neighbours have been visited and the proposal discussed,

87 A number of visits have been made to the local marae to discuss the proposal and seek feedback,

88 There has been a visit to the ODL site, proposed pipeline route and coastal outfall with Te Rununga O Waihoa consultants Aukaha,

89 A similar site visit with local and Christchurch based ECAN staff has also been undertaken.

90 A public meeting /information evening was held in Waimate at the Events Centre for the local community. This was followed by a presentation to the local Councillors.

POSITIVE EFFECTS OF THE PROJECT

91 The positive effects of the proposal as outlined above are:

- Expansion of the processing capacity of the site is enabled;
- Increase employment opportunities;
- Flow on regional economic benefits;
- Sustainable land-based wastewater disposal

SUMMARY AND CONCLUSION

92 Oceania Dairy Limited was developed by owner Yili with a long-term strategy of growth to meet the expanding Chinese demand for premium NZ dairy products. Their ability to market products as being in a controlled supply chain from farm to customer is a cornerstone of this investment.

93 Their investment to date of $650million dollars has produced a plant capable of manufacturing a range of milk powders, nutritional powders, UHT, AMF and infant formulas. The local community benefits from a payroll of +$23million and payments to farmers in the current season of an estimated $161 million. High quality premium dairy products are exported primarily to China and support New Zealand's reputation for quality and safe food products in the Chinese market.

94 For further expansion on the site an update to the wastewater treatment and disposal system is required after 6 years of growth. After investigating many options additional treatment and an ocean outfall to supplement the current land disposal system has been identified as the best solution. This decision was made only after science and technical review confirmed the minimal environmental impact of the proposal.

95 The ocean outfall not only allows for further expansion but also ensures the long-term sustainability of the current land disposal wastewater system.

Shane Lodge
28 May 2020