

Decision Report

Pioneer Energy Limited

RM18.004

Application to Change Consent Conditions
to
Otago Regional Council

11 July 2022

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Appendix 1 Changed consent conditions

1 Introduction

[001] In January 2018 Pioneer Energy Limited (PEL or Applicant) applied to change conditions on two existing water permits (Water Permit 2001.475 and Water Permit 2001.476.V3) associated with Lake Onslow for the damming, taking and use of water. The principal change proposed at that time was an increase in the allowable seven-day lake level draw down from 0.2 metres to 0.4 metres.

[002] I discuss subsequent amendments to the changed conditions in section 3.3 and 6 of this Decision.

The application is granted for the reasons herein.

2 Appointment

[003] The Otago Regional Council (ORC), acting under s34A of the Resource Management Act 1991, appointed independent hearing commissioner Rob van Voorthuysen¹ to decide the application.

3 Process Issues

3.1 Notification, written approvals, pre-hearing meetings, hearing and site visit

[004] The application was processed on a limited notified basis to:

- Teviot Angling Club;
- Otago Fish and Game Council;
- Aukaha on behalf of Te Runanga o Otakou; and
- Department of Conservation on behalf of the Director General of Conservation.

[005] Submissions in opposition were received from the Teviot Angling Club and Otago Fish and Game Council. Both submitters wished to be heard. The submissions were summarised in the ORC Section 42A Report² authored by Natasha Pritchard, an ORC Principal Consents Planner. I adopt that summary but do not repeat it here. I record that I read each submission in full.

[006] No written approvals were provided and no pre-hearing meeting was held.

[007] At the request of the ORC, the Applicant provided a great deal of further information over the period January 2018 to May 2022. The nature of that information is set out in the Section 42A Report³ and the evidence of William Nicolson⁴ and while I do not document it here, I record that I was provided with copies of relevant information.

¹ Commissioner van Voorthuysen is an experienced independent commissioner, having sat on over 365 hearings throughout New Zealand since 1998. He has qualifications in natural resources engineering and public policy. In 2020 he was appointed as a Freshwater Commissioner by the Minister for the Environment under Clause 65 of Schedule 1 to the RMA.

² Table 3 titled "Summary of Submissions".

³ Section 2.5 titled "Application Documents".

⁴ EIC Nicolson, paragraphs 17, 18 and 22.

[008] The Section 42A Report,⁵ the Applicant's evidence⁶ and legal submissions⁷ and the submitters evidence⁸ were pre-circulated in accordance with a procedural Minute that I issued. Statements of evidence were tabled by Fish and Game⁹ and the Teviot Angling Club¹⁰ at the hearing. I do not summarise that material here, but refer to it or quote from it in subsequent parts of this Decision. Copies of all the material are held by the ORC.

[009] I undertook a site visit on Tuesday 5 July 2022 accompanied by Daniel Druce (ORC Senior Consents Planner). I viewed the dam, the huts (cribs), the concrete boat ramp and the Lake foreshore in the vicinity of those features. The Lake level appeared to be quite low as large tracts of lakeshore mudflats were exposed. At the hearing Mr Jack advised that on the afternoon of my site visit the Lake was 3.2 m below the dam crest.

[010] I held a hearing in Alexandra on the morning of Wednesday 6 July 2022. The Applicant's Reply submissions were provided verbally at the hearing. I closed the hearing that same afternoon, having concluded that I required no further information from any of the participants.

3.2 Officer's recommendation

[011] Ms Pritchard recommended that the consent change application be granted.

3.3 Description of the Activity

[012] The nature of the application was described in the application document,¹¹ the Section 42A Report¹² and the evidence of Anthony Jack. I adopt those descriptions, but by way of overview some of the more salient points are:

- The Teviot River Scheme is a combined hydroelectric power generation¹³ and irrigation scheme located on the Teviot River, east of Roxburgh. Lake Onslow is a man-made lake located at the head of the river and was initially created in ≈1890 by damming an area of land called Dismal Swamp. A new dam was constructed in 1982 by the Otago Central Electric Power Board that increased the storage level of the lake by 5 metres;
- PEL sought and obtained resource consents from the ORC in 2006 for the take, damming and discharge of water at Lake Onslow;
- The minimum operating level of the lake is 679.9 masl¹⁴ which allows for an operating range of ≈5.2 m below the crest of the dam. No change is proposed to those limits, nor to the allowable rate of take from the Lake;

⁵ The Section 42A Report was supported by technical reviews on ecology, compliance, amenity, and the lake level model. Those reviews are listed in (a second) Section 2.5 of the Report titled "ORC Technical Audits and Evidence". The Report also appended legal advice from counsel for ORC.

⁶ Anthony Jack (Civil Engineer at Pioneer Energy Limited), Ross Dungey (freshwater aquatic ecologist and Director of Ross Dungey Consulting Limited), William Nicolson (a planner and environmental scientist at Landpro Limited).

⁷ Bridget Irving (Galloway Cook Allan lawyers).

⁸ Jayde Couper (Fish and Game Officer / ecologist).

⁹ Nigel Paragreen, Fish and Game Environmental Officer.

¹⁰ Graeme Rae, Club Captain

¹¹ Application for Replacement of Water Permit 2001.487 V2 on behalf of Pioneer Generation Limited and Teviot Irrigation Company Limited, Supporting Information, WSP Opus, November 2019, section 1 Introduction, section 2 Background, section 3 Application to take water and section 4 Use of Water.

¹² Section 2.2, Description of Application and section 4 titled "background and Description of the Environment".

¹³ The Teviot River hydro generation is a significant portion, approximately 45% of PEL owned generation portfolio. EIC Anthony Jack, paragraph 11.

¹⁴ Metres above sea level.

- The Lake is generally operated so that it is full (70-90%) for most of the year with the storage being most valuable in late summer for supplementing low flows in the Teviot River when there is high electricity demand and irrigation demand is highest and;
- The water discharged from Lake Onslow is consented at a maximum rate of 6 cubic metres per second (m³/s), but in practice it varies between 1.4 m³/s and 5.7 m³/s;
- The Lake draw down rate is variable throughout the year and is influenced by electricity and irrigation demand and rainfall. PEL say that the current draw down rate limits use of storage from 1m below the crest as the average rate ('sustained' rate) of take in a seven day period is constrained. The draw down rate becomes the primary restriction during dry years when Lake levels are already low due to low inflows;
- PEL contends that the current allowable rate of draw down restricts the amount of electricity that can be generated using water stored in Lake Onslow. The increased draw down rate is sought to provide more flexibility to react to relatively short periods of high demand, which often occurs when the Lake is at lower levels and which tends to coincide with late summer and autumn;
- PEL estimate that the increased rate of draw down will only occur in two out of every five years for a period of up to 10 weeks (approximately 2-3 months) and is most likely to occur during low rainfall years; and
- The estimated additional draw down (compared to the status quo) over that 10-week period is estimated to be 0.6 m.

[013] The original application¹⁵ was to amend Condition 2 of each permit as follows:

The rate at which the lake shall be drawn down shall not exceed ~~0.2~~ 0.4 metres over any period of seven days

[014] Following the Applicant's consultation with potentially affected parties (Director General of Conservation, Otago Fish and Game, and Aukaha), the original application was amended in June 2021 to seek the imposition of six lengthy additional conditions (along with several defined terms) that would introduce an adaptive management regime. That regime would include extensive monitoring and reporting to verify that the ecological effects associated with the increased rate of draw down were in fact minor as was anticipated by PEL, with a requirement to revert to the currently consented draw down rate if the monitoring revealed evidence to the contrary.

[015] The adaptive management regime conditions were set out in the Section 42A Report¹⁶ and I do not repeat them here for the sake of brevity, but I discuss them in section 5.6 of this Decision.

4 Consent category

[016] As set out in RMA section 127(3), applications to change conditions of consent are to be assessed as if they were an application for a discretionary activity.

[017] In this case the proposal relates to changing one element of the Lake operating regime, namely the rate of draw down. Ms Pritchard considered that the effects associated with the change were not materially different from those that were considered for the original application, namely the conditions sought to be changed do not relate to a

¹⁵ The original variation application was for 0.5 m over any period of seven days. An amendment to the Application in June 2021 formally changed this to 0.4 m over any period of seven days to address concerns raised by the Otago Fish and Game Council.

¹⁶ Section 2.1 titled "Amendment to the Application", pages 6 to 9.

fundamentally different activity. I agree that the application can be progressed under section 127 and does not occasion the need a new consent.

[018] It is well established that I am only able to consider the effects of the changed conditions and not the underlying consented activity. Having said that, I note that the Section 42A Report outlined the background to the draw down condition originally imposed on Water Permits 2001.475 and 2001.476.V3 in 2006.¹⁷

5 Section 104 and 104B matters

5.1 Effects Assessment

[019] I preface my discussion on the potential effects of the proposed change in conditions by noting that Lake Onslow is not a natural lake. It is primarily a hydroelectricity storage reservoir. By their very design the water levels in such reservoirs fluctuate as water is drawn from them to generate electricity. The fact that the reservoir supports a brown trout fishery is therefore a fortuitous occurrence not linked to its primary purpose. In that regard I note and agree with the statement of Mr Nicolson¹⁸ that “... *the sports fishery (based on brown trout, which are an introduced species) within the catchment would be severely reduced were the PEL dam (which was constructed for the purpose of hydroelectricity generation and irrigation, not recreation) not in place or operable.*”

[020] On that same theme, in her tabled ‘Speaking Notes’ Ms Coates said:¹⁹

“The lake is an artificial environment, creating habitat that would not be present without a manmade structure. The habitat is best suited to an introduced, exotic species that predated on native fish.”

[021] Counsel for PEL²⁰ put it this way:

Lake Onslow, as it is today, was formed for hydroelectricity generation purposes. It would not exist otherwise. The values of the Lake for scenic, recreation and trout habitat purposes are a fortunate side-benefit arising from the core purpose of the water allocation under the existing resource consent. In other words, as the operator of the Lake, Pioneer’s first obligation is to maximise the efficient use of the allocated water resource for the purpose that it was allocated.

[022] I agree with Mr Nicolson, Ms Coates and Ms Irving.

[023] Having said that, I acknowledge that under section 7(h) of the RMA I must have particular regard to “*the protection of the habitat of trout.*” I note that an obligation to “*have regard to*” requires “*a decision maker to give genuine attention and thought to particular matters, but they do not necessarily have to accept them.*”²¹ The fact that Lake Onslow is a hydroelectricity storage reservoir is arguably relevant to the weight that might be assigned to s7(h) matters in this case.

[024] Regarding the PEL application more generally, issues considered to be in contention were set out in the Section 42A Report and the evidence of the Applicant and submitters. Having reviewed that material I consider that the potential effects on the environment that require assessment are limited to the matters addressed in sections

¹⁷ Section 2.4.1 titled “Decision on the Original Application”.

¹⁸ EIC William Nicolson, paragraph 32.

¹⁹ Paragraph 13.

²⁰ Opening Submissions of Counsel for the Applicant, 1 July 2022, paragraph 3.

²¹ *Foodstuffs (South Island) Ltd v Christchurch City Council* [1999] NZRMA 481 at p9.

5.1.1 to 5.1.6 below. In saying that, I note again that no submission was received from Aukaha on behalf of Te Runanga o Ōtākou.

5.1.1 *The 'existing environment'*

- [025] The first issue to be addressed is what existing environment the proposed change in consent conditions should be assessed against. As counsel for ORC correctly noted²² *"When processing an application under section 127 to change the conditions of a resource consent, the usual resource consent process applies, except that the only relevant effects are the effects of the change or cancellation of the condition. Therefore, the existing condition is used as a starting point."*
- [026] Counsel went on to submit that *"the existing condition"* means the existing allowable Lake draw down condition exercised to its fullest extent, even if that has not occurred historically. As counsel noted *"The [existing] water permit could be used to its fullest extent at any point."* Relevantly in that regard, the existing PEL water permits do not expire until 2041. The existing condition exercised to its fullest extent as described by counsel (which has been termed Scenario B) is the 'existing environment' against which the proposed changed conditions should be assessed, again assuming that the changed conditions are exercised to their fullest extent (which has been termed Scenario C). Ms Pritchard²³ was of the same opinion as her counsel.
- [027] Counsel for PEL agreed with ORC's counsel regarding the appropriate 'existing environment', adding *"This effectively means that it is a comparison of Scenario B and C that are the legally relevant considerations"*.²⁴ Mr Nicolson also concurred²⁵ and he put it this way (correctly in my view), saying *"Any assessment of the effects of the proposal on the environment must therefore compare the existing consented baseline with the proposed changes to consent conditions, as if the resultant varied consents will also be exercised to their fullest extent."*
- [028] Having said that, I accept Ms Pritchard's comment that *"... historical lake levels since the consent was implemented (i.e. since November 2006) do not represent what the lake levels would have been like if the consents had been exercised to their fullest extent during this period."*
- [029] I note that Otago Fish and Game held a different view. They did not present legal submissions but their representative Nigel Paragreen suggested that the historical operation of the Lake (called Scenario A) should be essentially 'rerun' (or perhaps projected forwards for the remaining duration of consent) with the increased 7-day draw down rate in place (called Scenario D) and that Scenario D should then be compared to Scenario A. All parties appeared to agree that would be difficult if not impossible to model.
- [030] I can appreciate Mr Paragreen's perspective, but his view was not supported by either counsel for ORC or PEL or by the planning witnesses for those parties. Taking on board Mr Paragreen's view, I asked Ms Pritchard if the s128 review condition on Consent 2001.475 (including as it is recommended to be amended by herself) would enable ORC to review the conditions of consent should unforeseen significant adverse effects on angling or recreational use of the Lake arise in the future. She confirmed that it would. That may give Fish and Game some comfort.

²² Section 42A Report, Appendix 5, comprising legal advice from Michelle Mehlhopt and Kate Dickson at the firm Wynn Williams.

²³ Section 42A Report, section 6.1.1 titled "Receiving Environment for Effects Assessment".

²⁴ Opening Submissions, paragraphs 7 and 8.

²⁵ EIC William Nicolson, paragraphs 8, 34 and 35.

- [031] There are two Regionally Significant Wetlands located adjacent to the Lake (Fortification Creek Wetland Management Area and Middle Swamp). The hydraulics of those wetlands are controlled by rainfall and upstream inflows and not the Lake level itself. For the wetlands to be affected the Lake water levels would need to rise significantly, which does not form part of the Applicant's proposal. I do not consider effects on those wetlands to be a relevant matter.
- [032] For completeness I note Ms Pritchard's advice that there are no registered historic places associated with Lake Onslow or the Teviot River. Any existing heritage values would be unaffected as no change is proposed to the Lake's area of inundation or its minimum operating level.²⁶

5.1.2 Lake Level Model

- [033] PEL have developed a hydrological numerical (spreadsheet) daily time step mass balance lake level model (the Model) that enables an assessment of the effects of the proposed change in lake level draw down against the 'relevant existing environment' outlined above. The Model is based on the maximum allowable discharge (6 m³/s), the maximum operating level (5.2 m below the dam crest) and a variable draw down rate.
- [034] ORC had the Model peer reviewed by Babbage Consultants Limited and their Memorandum advice was attached as Appendix 6 to the Section 42A Report. Babbage noted that the Model has limitations, including:
- lake level variation depends on modelled inflow²⁷ from the catchment (based on a scaled time series data set for the Taieri River at Canadian Flat²⁸ measured by NIWA and provided to PEL by MBIE) and the water taken from the Lake take as determined by the draw down limit or maximum outflow. No other hydrological factors such as precipitation, evaporation, or groundwater flows are used. It is not possible to fully calibrate and validate the Model;
 - the Model checks for the weekly draw down limits on a daily basis so it could underestimate how quickly lake levels could fall, resulting in an overestimation of lake levels;²⁹
 - the Model does not consider any draw down exceeding ≈5.2 m below the dam crest. This may result in an overestimate of the time the Lake stays at the minimum level by disregarding cumulative daily inflows when the Lake is at the lowest level; and
 - based on PEL's validation of inflows over a limited period of time (June and July 2013), Babbage consider that a correction factor of 0.688 should be applied to the inflow data series to reduce the Model's margin of error.
- [035] Importantly, PEL agree that the application of a 0.688 correction factor is reflective of the likely actual inflows into Lake Onslow.³⁰

²⁶ Section 42A Report, section 6.1.10.3 titled "Other values: (natural character, other users, heritage, cultural values)"

²⁷ There are no monitoring sites recording the inflows into Lake Onslow.

²⁸ Approximately 10km east of Lake Onslow in the adjacent catchment.

²⁹ In his 'Speaking Notes' (paragraph 8) Mr Coutinho suggested that "*The Model should limit draw down on a rolling 7 days total against the consent limit instead of a daily average of that value. In this way draw down would be better calculated, particularly after strong inflow periods.*" This may be something that PEL considers for the future but I did not consider it necessary for the purposes of this Decision.

³⁰ EIC Anthony Jack, paragraph 29.

- [036] I note that Fish and Game were somewhat critical of the model.³¹ Having considered the issues they raised, I am comfortable that its use as an assessment tool remains appropriate, albeit that its primary utility is as a tool for undertaking a comparative assessment between Scenario B and Scenario C. In that regard Mr Nicolson³² (correctly in my view) advised that “... *the model is not able to provide a truly accurate representation of what lake levels would look like under different scenarios – rather, it should be used to compare outcomes under the existing consented baseline (Scenario B) and the proposal (Scenario C).*” Ms Pritchard³³ agreed, stating “*I understand from Mr Jack and Mr Nicholson that they are seeking no further improvements to the model primarily because it is to be used as a relative tool to compare differences between Scenario B and C. I agree that this is one of the primary purposes of the model and that the model is best suited to this.*”
- [037] Utilising the model as a ‘comparative assessment’ tool, Babbage estimated that if the 0.688 correction factor is applied then the Model predicts that during the period June 2007 to June 2021:
- the Lake would have been at (or below) the minimum level for 154 days for the 0.2 m per seven days draw down Scenario B, and for 167 days for the 0.4 m per seven days draw down Scenario C;
 - on an annual basis, the Lake would have been at (or below) the minimum level for 26 days for Scenario B and for 27 days for Scenario C;
 - there would have been no change to the amount of time that the Lake level was between 2.5 m and 5.2 m below the dam crest for the entire year (it would have been below 2.5 m below the dam crest in all years);
 - regarding the time that the Lake was between 3 m and 5.2 m below the dam crest for an entire year, the Lake levels would be under 3 m below the dam crest for the entire year every year except for 2015 for both Scenarios; and
 - there would be no change in the maximum drop in Lake level that could occur over a seven day period as that is constrained by the maximum take limit of 6 m³/s.
- [038] The above results indicate that the proposed change in consents conditions will have only a minor effect on lake levels.
- [039] However, it goes without saying that the proposed change to the draw down rate will mean that the minimum Lake level is able to be reached quicker. The Applicant notes that while theoretically it will take 26 weeks to draw the Lake down from full to 5.2m below the dam crest under Scenario B and 13 weeks under Scenario C, because the Lake seldom fills and will have a different ‘starting’ depth each time it transitions from a filling period to a draining period, it is not possible to state the relative time to reach the minimum lake level.
- [040] Ms Pritchard suggested³⁴ that I may wish to seek an updated model that includes additional input³⁵ and lake discharge data (along with other Model refinements) if I considered there was sufficient uncertainty regarding the outputs of the Model. I do not consider that to be necessary and prefer instead to take the approach dictated by section 1.6(2) of the NPSFM 2020, which is (paraphrased by me) in the absence of complete and scientifically robust data, to use the best information available from modelling while taking all practicable steps to reduce modelling uncertainty. I

³¹ EIC Jayde Couper.

³² Supplementary Evidence, William Nicolson, paragraph 5.

³³ Speaking Notes from Natasha Maree Pritchard, 6 July 2022, paragraph 1.d.

³⁴ Bullet points in Section 6.1.3 titled “the Model”.

³⁵ Such as precipitation, evaporation and groundwater flows.

consider that using the Babbage ‘correction factor’ results set out above achieve the intent of that provision. I also note that, as pointed out by Counsel for PEL,³⁶ that *“None of the other witnesses have promoted alternative information or data that is better, or more reliable.”*

5.1.3 Lake Onslow ecology and water quality

[041] The ecology and hydrology of the Lake were summarised in the Section 42A Report³⁷ and the evidence of Ross Dungey for PEL. Key matters include:

- the Lake provides habitat for adult brown trout, waikōura, common bully and invertebrates. Trout habitat (adult, juvenile and spawning grounds) and riparian vegetation of significance to aquatic habitats are listed in Schedule 1A of the Regional Plan: Water for Otago (RPW);
- as noted earlier, the Lake is a hydroelectricity and irrigation storage reservoir and the trout fishery is a fortunate addition and not the primary reason for the reservoir’s existence;
- macro-invertebrate presence and abundance is likely to be similar to other South Island high alpine lakes;
- the Lake provides habitat for macrophytes in a limited band around the Lake margins in water less than 2.5 m deep. The lake bed substrate, wave action and light penetration limit the available macrophyte habitat; and
- the current state of water quality in Lake Onslow is ‘average’. Sediment sources are mostly mud and silt.

[042] ORC obtained a technical report from Annabelle Coates³⁸ regarding the likely effects of the proposed change to the Lake draw down rate. Ms Pritchard³⁹ summarised Ms Coates’ conclusions which included:

- adult macroinvertebrates will continue to repopulate the aquatic environment if there is aquatic habitat available. Disturbance and variability in the Lake level created by the increased draw down rate will create new habitat and may actually enhance macroinvertebrate productivity. Overall, effects on macroinvertebrates would be negligible to low;
- the Lake’s macrophyte community has no ability to migrate and would die off as the Lake levels drop, but would recolonise dry areas in suitable conditions that would occur under both the current and proposed rate of draw down. The proposed change to the draw down rate is unlikely to significantly change macrophyte composition and abundance compared to what could occur under the current consent conditions;
- there would not be a significant adverse effect on the abundance and diversity of trout or trout productivity as a result of any changes to macrophyte beds or the macroinvertebrates (which provide food for trout) that live in them;
- there would be no significant adverse effects on indigenous bully communities or brown trout habitat as fish will move with the water as the Lake level drops;
- the increased rate of draw down will not alter the Lake’s habitat enough to make it more suitable for trout, which might otherwise be to the detriment of indigenous species (bullies and waikoura) as trout predate those species; and

³⁶ Opening Submissions, paragraph 17.

³⁷ Section 4.2 titled “Description of the Environment”.

³⁸ Ecologist with Babbage Consultants Limited.

³⁹ Section 42A Report, section 6.1.10.1 titled “Ecological Effects”

- there would be no impact on the incidence of cicadas over the Lake (a valued food source for trout), because lower lake levels are most likely to be exacerbated from what could currently occur between March and June, which is outside of the end of January to end of February cicada hatch period.

[043] In her tabled 'Speaking Notes', largely responding to the evidence of Mr Couper, Ms Coates advised:⁴⁰

"Trout do not spawn in the lake. They require clean gravels with a continuous flow of cool, well oxygenated water to spawn successfully. This occurs in the tributaries to Lake Onslow and will not be affected by the proposal."

"I see no reason for the trout fishery to be any less productive under Scenario B, compared to A, it will just be smaller. I would expect the same population structure, just less individuals."

[044] Ms Pritchard concluded that the overall effects on the ecology of Lake Onslow would be negligible to low from the proposed change of consent conditions. I understand from my questions that both Ms Coates and Ms Pritchard equate that to a 'less than minor' adverse effect.

[045] For PEL Ross Dungey largely endorsed Ms Coates' conclusions as outlined above and he could not identify any likely significant adverse effect on lake ecology (which includes the trout population) that might result from the increased in draw down rate.

[046] For Fish and Game Mr Couper similarly concluded⁴¹ *"... I cannot identify any likely significant adverse effect on the lake ecology (which includes the trout population) resulting from an increase in draw down rate up to 400mm/week when using Scenario B as the baseline."*

[047] On the evidence I find that the potential adverse effects of the proposed change of consent conditions on Lake Onslow aquatic ecology and water quality will be no more than minor.

5.1.4 Teviot River ecology and water quality

[048] The ecology and hydrology of Teviot River were summarised in the Section 42A Report.⁴² Key matters include:

- the Teviot River is listed in RPW Schedule 1A with the main natural values ascribed being the presence of trout,⁴³ which I note is not an indigenous species. There are no Schedule 1B takes or 1C sites in close proximity. In Schedule 1D the Teviot River is listed as having mahika kai value, but I understand that it has a very depauperate indigenous fishery; and
- the river below the Lake Onslow outlet comprises a series of pools and drops and the steep gradient would be difficult for most fish to negotiate. Invertebrate fauna are moderate to abundant. There are no sites where the river flow is not continuous.

[049] Ms Pritchard⁴⁴ summarised Ms Coates' conclusions regarding likely effects on the Teviot River which include:

⁴⁰ Paragraphs 9 and 10.

⁴¹ EIC Jayde Couper, paragraph 70.

⁴² Section 4.2 titled "Description of the Environment".

⁴³ This trout population has been derived from original releases in the upper Teviot/Lake Onslow.

⁴⁴ Section 42A Report, section 6.1.10.1 titled "Ecological Effects".

- higher flows during summer (the natural low flow period) will have positive benefits for the River's habitat;
- using the relevant existing environment against which the effects of the proposed change in conditions must be assessed, the modelling results indicate that the discharge from the Lake will be at the residual flow (345 L/s) around 20 to 25% more of the time. Such 'flat lining' of low flows in the Teviot River that can promote increased algal growth, but that can be managed by existing consent conditions that require flushing flows if certain triggers are met;
- any increased fluctuation in river flows is not expected to be detrimental to fish habitat due to the incised 'U' shaped nature of the river which results in very little change to its wetted area;
- increased rates of discharge are unlikely to erode or create additional sedimentation effects in the river when compared with flooding and flushing flow effects that can occur naturally or are currently consented; and
- should the increased rate of draw down exacerbate lake shore erosion (which is unlikely given the limited erosion that has occurred to date) then that would have limited effects on river water quality due to the fine nature of the sediment generated and the large water volumes in Lake Onslow and the Teviot River.

[050] Ms Pritchard concluded that the overall effects on the ecology of the Teviot River would be negligible to low from the proposed change to the rate of draw down.

[051] For PEL Mr Nicolson⁴⁵ noted that "... *the potential increase in discharge from Lake Onslow Dam (within consented limits) due to the increased draw down is expected to have a positive effect on fish in the Teviot River, by reducing low-flow induced barriers to fish productivity in late summer and moderating temperature fluctuations.*"

[052] For Fish and Game Mr Couper concluded⁴⁶ "...*I would expect the Teviot River would look almost exactly the same under Scenario B and C.*"

[053] On the evidence I find that the potential adverse effects of the proposed change in consent conditions on Teviot River ecology and water quality will be no more than minor.

5.1.5 Lake Onslow angling and recreational use

[054] The amenity and recreational values of the Lake were summarised in the Section 42A Report⁴⁷ and the evidence of Mr Nicolson. Key matters include:

- the Lake is a regionally significant, year-round brown trout angling resource for locals, domestic tourists and international tourists. December through to March are the peak angling months, although the Lake is reportedly most valued in late January and February during the cicada hatch period;
- much of the outer extent of Lake Onslow is owned by PEL, including the majority of the existing shoreline when the Lake is comparatively full. Most of the land adjoining the shoreline is privately owned and access is provided at the discretion of PEL and other private landowners;
- consequently, public access is limited to 20-25% of the Lake's shoreline. Fishing is undertaken from the shore, in boats or by using a boat to access the shore around the Lake;

⁴⁵ EIC William Nicolson, paragraph 18.

⁴⁶ EIC Jayde Couper, paragraph 79.

⁴⁷ Section 4.2 titled "Description of the Environment".

- boat access is primarily via two boat ramps. A concrete boat ramp near the fishing huts (or cribs) is operational until the Lake level drops to around 3.2 m below the dam crest and a schist boat ramp near North Bay is operational to approximately 2.5 m below the dam crest; and
- Boating is typically associated with fishing only. The well-known variable morphology of the lake bed makes it challenging to navigate.

[055] Using the relevant existing environmental (Scenario B) against which the effects of the proposed change in conditions must be assessed, the modelling results indicate that:

- existing boat ramp access would have not been possible nearly all of the time. If there was boat ramp access available, it would most likely have been during winter or spring;
- more lake bed would be exposed in a 7-day period than would currently occur. While this has not been quantified for any specific lake level, there will be no change to the maximum extent of lake bed exposure;
- there would be a similar pattern of fluctuation in lake levels, but there would be no change to the months of highest lake levels (July to January) or lower lake levels (March to June). However, lower levels would be reached earlier in the season;
- there would be no change to the maximum drop in lake level that could occur over a 7-day period as that is constrained by the maximum take limit of 6 m³/s; and
- there are no changes proposed to the consented minimum lake level and so fish migration to and from spawning grounds is unlikely to be affected. For Fish and Game Mr Couper agreed that was the case.

[056] ORC obtained a technical report from Kay Booth⁴⁸ regarding the likely effects of the proposed change to conditions. Ms Pritchard⁴⁹ summarised (and at times amended them based on the use of the corrected Model results that were advised by Babbage) Ms Booth's conclusions which included:

- mudflats become a hindrance to public access to the Lake around the 2.5 to 2.7 m below the dam crest. The proposed change to consent conditions will not increase the period of time that the Lake is below that level and the Lake would nearly always be below these levels. Consequently, there would be no change to initial mudflat presence;
- any increase in the area of mudflats would not cause a significant adverse effect as mudflat presence is already significant and the proposed change in the draw down rate would only increase that slightly;
- longer periods of lower lake levels would allow the lakeshore mud to harden, thereby better enabling foot access around the Lake (a positive effect);
- the period of time that the boat ramps would be inoperable would not change;⁵⁰
- the Lake being at a lower level for longer meant that challenging boat passage conditions could occur for a longer period and this could result in increased boat standings. However, it is not possible to quantify that effect and the risk of stranding would already be high under Scenario B whereby the Lake is below 3 m below the dam crest for 99% of the time. Also, if the Lake is at a lower level more

⁴⁸ Consultant recreation planner and the Director of Lindis Consulting Limited.

⁴⁹ Section 42A Report, section 6.1.10.1 titled "Ecological Effects".

⁵⁰ In her tabled 'Speaking Notes' (paragraph 5) Ms Booth advised "... the proposal is likely to have little effect upon the level of boat activity on Lake Onslow."

regularly, then navigation risks may be more apparent and understood by boat users;

- there may be a marginal increase in adverse effects on visual amenity resulting from the Lake being at the lowest level (most dewatered and exposed) for longer; and
- as noted in section 5.1.3 above, there would be no impact on the cicadas landing on the Lake.

[057] Ms Pritchard concluded that the overall effects on amenity values (namely angling and recreational use) were not significant.

[058] Evidence from the Teviot Angling Club was presented by Graeme Rae. He helpfully advised:

- he spent 10 to 12 days a year fishing at the Lake, but that was atypically frequent as he was 'an extensive camper';
- on a typical summer weekend there might be no more than 3 or 4 boats on the Lake; and
- his concern (and presumably that of the Teviot Angling Club whom he was representing) was not that the Lake might be held at lower levels for longer (he said a lower Lake level was acceptable), but rather the increased rate of draw down would reduce the amount of food available for the trout.

[059] I note that Mr Rae's concern regarding food available for trout was not supported by the expert ecological evidence of either Mr Dungey or Ms Coates (as referenced in section 5.1.3 of this Decision).

[060] Regarding the issue of 'boat safety', I firstly note from the evidence of Mr Rae that the Lake does not seem to be heavily populated with boats at any one time.

[061] For the Applicant, Ross Dungey advised that the stranding of boats on Lake Onslow as a result of a receding water level would be a most unlikely occurrence, because even a sustained period of draw down at 0.4 m/week would only equate to a 28.6mm drop in water level over 12 hours. Mr Nicolson advised that the Lake is relatively shallow regardless of its level below the dam crest and the risk of stranding was always present. Furthermore, there are obstacles just below the surface of the Lake when it is full or close to full (namely above 2.5 m below crest) and it may be that lowering the Lake in fact exposes these hazards, limiting their impediment to navigation.⁵¹ Their opinions on those matters seem sensible to me.

[062] Regarding the concrete boat ramp that is located adjacent to the fishing huts on the foreshore near the dam, Ms Pritchard advised⁵² "... the boat ramp extends to 3.5 m below the [dam] crest ..." and "... the lake would be below 3.5 m below crest 2% more of the time when comparing Scenario C to Scenario B. I consider this to be minimal and any additional time to not have any real impact on boat users." I agree.

[063] For Fish and Game, Mr Couper agreed with Ms Coates' assessment that low lake levels during cicada hatches were unlikely to result in significant adverse effects ecologically. However, he nevertheless considered that⁵³ " *there is likely to be a large decline in angling activity and satisfaction as anglers miss out on the excellent fishing that abundant cicadas provide.*" I asked him about the basis for that conclusion and

⁵¹ EIC William Nicolson, paragraph 40(vi).

⁵² Speaking Notes from Natasha Maree Pritchard, 6 July 2022, paragraph 3(c).

⁵³ EIC Jayde Couper, paragraph 59.

he eventually agreed that it was a subjective opinion that did not have an evidential basis.

[064] I prefer the evidence of Ms Pritchard⁵⁴ on that matter and she stated “*Effects to angling during the cicada hatch period could already be realised through the existing consent (i.e. low lake levels, no boat ramp access, mudflats).*” Namely, any such effects are not exacerbated by the proposed change in consent conditions.

[065] On the evidence, and having regard to the context of Lake Onslow set out in section 5.1 of this Decision, I find that potential adverse effects of the proposed change in consent conditions on Lake Onslow angling and recreational use are not of sufficient significance as to weigh against a grant of the PEL application to change conditions of consent.

5.1.6 Positive effects

[066] As noted by Ms Pritchard, based on information provided by PEL, granting the consent change application will have positive effects including:

- an ability for more efficient use of the water resource when generating hydroelectricity;
- increasing the generation output of the Lake Onslow/Teviot hydroelectricity system by enabling more flexibility in the timing and management of outflows;
- potential cumulative positive impacts on local and regional renewable energy generation output and the achievement of national targets for renewable electricity generation; and
- higher flows in the Teviot River during natural low flow periods would provide increased habitat for aquatic species

[067] I accept those positive effects would result from a granting of the application.

5.2 National environmental standards and other regulations

[068] The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-FW) are potentially relevant. However, Ms Pritchard advised that as the change to consent conditions did not include any vegetation clearance; earthworks or land disturbance; taking, use, damming or discharge of water; or drainage of water from a natural wetland or within a 10-100 m setback of a natural wetland; the provisions of the NES-FW did not apply and no further consents were required under those Regulations. I agree.

[069] The National Environmental Standard for Sources of Human Drinking Water are potentially relevant. However, Ms Pritchard advised that there are no registered drinking water supplies at Lake Onslow or on the Teviot River.

5.3 National policy statements

[070] The New Zealand Coastal Policy Statement is not relevant.

[071] Relevant national policy statements are:

- National Policy Statement for Renewable Electricity Generation 2011 (NPSREG); and
- National Policy Statement for Freshwater Management 2020 (NPSFM)

⁵⁴ Speaking Notes from Natasha Maree Pritchard, 6 July 2022, Final Comments.

- [072] The single objective of the NPSREG is “*To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities ...*”. Ms Pritchard⁵⁵ considered that the PEL proposal “... *could be considered an ‘upgrade’ to the renewable generation activity*”. I agree.
- [073] Policy A of the NPSREG requires me to recognise and provide for the national significance of renewable electricity generation activities, including the national, regional and local benefits relevant to renewable electricity generation. Policy B(a) requires me to have particular regard to the maintenance of the generation output of existing renewable electricity generation activities which in turn can require protection of the continued availability of the renewable energy resource, namely in this case the water abstracted from Lake Onslow.
- [074] For PEL, Mr Nicolson addressed the NPSREG at length⁵⁶ and I understand that he considered the PEL proposal to be consistent with it. Interestingly, he considered that Lake Onslow is an existing renewable electricity asset that is not being utilised to its full potential, implying that declining the PEL proposal (which is aimed at addressing that matter) “*will be very much inconsistent with*” Policy B of the NPSREG. I agree.
- [075] Clearly, as discussed in section 5.1.6 of this Decision, allowing the PEL proposal would give effect to the NPSREG and that weighs strongly in favour of granting the application.
- [076] The single objective of the NPSFM is:
- The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:*
- (a) first, the health and well-being of water bodies and freshwater ecosystems*
 - (b) second, the health needs of people (such as drinking water)*
 - (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future*
- [077] The PEL application is consistent with Objective 2.1(c) insofar as it would enable the Applicant to better provide for their economic well-being, as discussed in section 5.1.6 of this Decision. Objective 2.1(c) is also relevant to the social well-being of the angler interests represented by the Teviot Angling Club and Otago Fish and Game. I have already found that potential adverse effects on those interests (namely angling and recreational use) do not weigh against a grant of the application.
- [078] In order to grant the application, I must first be assured that it also gives effect to Objective 2.1(a), which in this case is the health and well-being of Lake Onslow and the Teviot River. On the basis of my findings in sections 5.1.3 and 5.1.4 of this Decision I am satisfied that is the case.
- [079] I note that Ms Pritchard assessed NPSFM Policies 1, 2, 4, 5, 6, 7, 8, 9, 10 and 15. I adopt her assessment and record that having done so I find that having regard to the NPSFM does not weigh against a grant of consent. I note that for PEL, Mr Nicolson also adopted Ms Pritchard’s NPSFM assessment.⁵⁷ and counsel for PEL⁵⁸ concluded

⁵⁵ Speaking Notes from Natasha Maree Pritchard, 6 July 2022, paragraph 3(f).

⁵⁶ EIC William Nicolson, paragraphs 41 to 50.

⁵⁷ EIC William Nicolson, paragraph 42. He also provided a separate assessment (paragraphs 51 to 57 of his EIC) that I had regard to.

⁵⁸ Opening submissions, paragraph 26.

that “... *that there are no barriers created by the NPSFM to granting the variation*”. I agree.

- [080] Counsel⁵⁹ also drew my attention to Policy 4 of the NPSFM which reads “*Freshwater is managed as part of New Zealand’s integrated response to climate change.*” I asked Ms Irving about that and she advised that New Zealand’s integrated response to climate change is founded on moving away from the use of fossil fuels. The existing primary alternative is electricity, particularly electricity generated from renewable sources such is the case here. Consequently, enabling PEL to maximise the generation of electricity gives effect to Policy 4. Ms Irving submitted that a desire from the submitters to avoid any adverse effects on the existing angling amenity should not override that. I agree.

5.4 Regional policy statements

- [081] The Regional Policy Statement for Otago (RPS) 1998 has been revoked and the Partially Operative Regional Policy Statement for Otago (PORPS) was made partially operative on 15 March 2021. The Proposed Regional Policy Statement 2021 (PRPS21) has yet to proceed to a hearing of submissions and is subject to High Court Declaratory proceedings.⁶⁰ I have therefore given little weight to the PRPS21 provisions, although I note that of relevance to the PEL application, the PRPS21 provisions generally mirror the provisions of the NPSFM and PORPS. Having said that, I record that I confirmed with both Ms Prichard and Ms Irving that the PRP2021 did not establish a markedly different policy regime relevant to this consent change application such that I should give it more weight than outlined above

- [082] Ms Pritchard assessed what she considered to be the relevant provisions⁶¹ of the PORPS, concluding the proposal was in accordance with them.⁶² I adopt and agree with her assessment.

5.5 Regional plan

- [083] The relevant regional plan is the Regional Plan: Water for Otago (RPW). Ms Pritchard assessed what she considered to be the relevant provisions⁶³ of the RPW, concluding that the PEL proposal was generally consistent with them.⁶⁴ I adopt and agree with her assessment.

- [084] In particular, I note that the change in consent conditions will have little if any adverse effects on the natural values of Lake Onslow and the Teviot River that are identified in Schedule 1A to the RPW. Nor will the natural character of Lake Onslow be adversely affected due to it being an artificial lake.

- [085] Regarding the RPW, for the Applicant Mr Nicolson considered⁶⁵ (amongst other matters) that:

⁵⁹ Opening submissions, paragraph 21.

⁶⁰ I was advised hearings are currently scheduled for September but they may be further postponed.

⁶¹ Policies 1.1.1, 1.1.2, 1.2.1, 2.1.2, 2.2.2, 2.2.3, 3.1.1, 3.2.13, 3.2.14, 3.2.15, 3.2.16, 4.4.3 and 5.4.2.

⁶² Section 42A Report, section 6.3.6.1 titled “Partially Operative Regional Policy Statement.”

⁶³ Objective 5.3.4, 5.3.5, 6.5.3, 6.5.2 and Policies 5.4.2, 5.4.3, 5.4.9, 6.5.2 and 6.5.3. I have omitted provisions relating to heritage values, natural character and Kai Tahu values (given the absence of a submission from Te Runanga o Ōtākou even though they were directly notified) as I do not find it necessary to assign those matters significant weight in this case, as outlined in the body of this Decision.

⁶⁴ Section 42A Report, section 6.3.7 titled “Regional Plan: Wate for Otago.”

⁶⁵ EIC William Nicolson, paragraphs 58 and 59.

- the existing consented residual flow requirement for the Teviot River below the Onslow dam will not change;
- the proposal would generally maintain amenity values at Lake Onslow and would not impede public access to the Lake; and
- the adverse effects of the proposal on the ecology of Lake Onslow and the Teviot River, and on quantifiable aspects of Lake Onslow and Teviot River angling, are likely to be insignificant;

[086] On that basis he concluded that the PEL proposal was consistent with the RPW. I accept his evidence in that regard.

5.6 The Applicant's adaptive management regime

[087] As noted in section 3.3 of this Decision, the Applicant proposed an adaptive management approach to quantifying the effects of the change of consent conditions on the ecology of Lake Onslow and has prepared a Lake Onslow Monitoring Plan (LOMP).

[088] On that matter Ms Pritchard⁶⁶ advised (abridged by me):

" ... the receiving environment [is] one where the consents are exercised to their fullest extent ... [which] is not the current lake environment/status quo and any baseline monitoring would be reflective of [the status quo] I consider that this does render this proposed monitoring regime as being unreflective of the effects that are being considered for this Application. On that basis, I consider draft conditions A1-A3 and B2 to be redundant and not recommended to be imposed. I do not think there is a practical way of drafting the conditions that would measure the effects that are being considered. I also note that the submitters [Otago Fish and Game] do not support the adaptive monitoring conditions due to their complexity and potentially ultra vires nature."

[089] I agree wholeheartedly with Ms Pritchard and based on my findings regarding the potential adverse effects of the PEL proposal I do not consider that those conditions could reasonably have been imposed under RMA s108AA(1)(b) if they were not offered (or agreed to) by PEL.

[090] In that regard Mr Nicolson advised⁶⁷ *"... on the basis of Ms Pritchard's determination that the proposed change would not result in significant adverse environmental effects when compared to the existing environment, there is no need to adopt the proposed adaptive management/monitoring conditions."* For the record, I note that in answer to my questions at the hearing, Mr Jack advised that they would nevertheless undertake some form of monitoring similar to what was envisaged by the LOMP, particularly in terms of gathering information to support the eventual replacement of their existing consents.

5.7 Other matters

[091] The Kai Tahu ki Otago Natural Resource Management Plan 2005 and the Te Rūnanga o Ngāi Tahu Freshwater Policy Statement 1999 are relevant other matters. Notwithstanding the absence of a submission from Te Runanga o Ōtākou (even though

⁶⁶ Section 42A report, section 6.1.10.4 titled "Adaptive management approach and conditions."

⁶⁷ EIC William Nicolson, paragraph 37.

they were directly notified), I adopt Ms Pritchard's assessment of those documents⁶⁸ and concur that the PEL proposal is consistent with them.

[092] The Sports Fish and Game Management Plan for Otago Fish and Game Region 2015-2025 describes the sports fish and game bird resources in the region and outlines issues, objectives and policies for management over the period. The Management Plan confirms that Lake Onslow provides important angling amenity and is a regionally important sports fishery. I have already found that to be the case, as discussed in preceding sections of this Decision.

[093] I agree with Ms Pritchard that, having regard to the *R J Davidson* the Court of Appeal decision, an assessment against Part 2 would not add anything to the evaluative exercise.⁶⁹

[094] Mr Nicolson raised the issue of 'reverse sensitivity'. He appeared to be suggesting that a preference for preserving existing trout angling amenity, such that it might prevent the granting of PEL's s127 application, would constitute a 'reverse sensitivity' adverse effect that should be avoided.⁷⁰ In her verbal Reply submissions Ms Irving discussed that concept further, submitting that if angling amenity was allowed to 'constrain' the additional generation of electricity enabled by a more effective use of Lake Onslow's stored water, then that would not be consistent with the NPSREG nor with Policy 4 of the NPSFM. I understand the point being made and by Mr Nicolson and Ms Irving and find that weighs against the relief being sought by Fish and Game, which was to decline the s127 application outright.

6 Consent Conditions

[095] I was provided with recommended consent conditions by Ms Pritchard. She recommended that Condition 2 of each consent be changed to increase the allowable seven-day draw down from 0.2 metres to 0.4 metres. She also recommended:

- amending the existing conditions relating to health and safety signage at the Lake's concrete boat ramp;
- imposing a new a lake level monitoring regime; and
- amending the existing s128 review condition.

[096] Ms Pritchard recommended that these changes be made to both Consent 2001.475 (the damming consent) and 2001.476 (the take and use consent). I agree that Condition 2 of each consent should be changed (as that was what was sought by PEL) but I see no need to duplicate the Lake level monitoring condition on Consent 2001.476. When I put that to Ms Pritchard at the hearing, she agreed it would be sufficient to insert the new lake level monitoring condition in Consent 2001.475 only.

[097] I initially considered that I did not have scope to amend the s128 review condition unless the amended wording was 'offered' by PEL on an *Augier* basis or agreed by them under s108AA(1)(a) of the RMA. I asked Mr Jack about that and he said that the rewording recommended by Ms Pritchard was agreed to by PEL. Mr Jack also advised:⁷¹

⁶⁸ Section 42A Report sections 6.4.1 and 6.4.3 [sic].

⁶⁹ Section 42A Report section 11 titled "Part 2 of the Act".

⁷⁰ Summary of Evidence of William Nicolson, 5 July 2022, paragraph 1.6

⁷¹ EIC Anthony Jack, paragraph 31.

- PEL opposed a suggested potential condition⁷² to install three rocky areas on the Lake's shoreline to provide some minor ecological benefit; and
- PEL accepted the recommended amendments to Water Permit 2001.475 Condition 15 (signage), but stated that PEL had no jurisdiction to dictate procedures for boat strandings and nor did PEL have the resources or expertise to render advice or assistance to boat users who failed to navigate the known hazards associated with Lake Onslow.

[098] For PEL Mr Nicolson⁷³ accepted the recommended lake level monitoring regime and that acceptance was confirmed by Mr Jack at the hearing. Mr Nicolson also suggested that the signage should recommend that all boats carry two forms of communication to be used in the event that a stranding or emergency occurs on the Lake. I have no problem with that suggestion and consider it to be more practical than the alternative initially recommended by Ms Pritchard,⁷⁴ given the remoteness of the location. At the hearing Ms Pritchard advised that she agreed with Mr Nicolson's alternative wording.

[099] The changed conditions imposed are out in Appendix 1 to this Decision with the changes shown in grey wash and underlining (I have not shown deleted wording). I have slightly modified the recommended lake monitoring condition to improve its formatting, consistency of language and clause numbering.

10 Determination

[100] My determination on the application is set out below. My reasons are detailed in the body of this Decision, but in summary they include:

- (a) the negligible or insignificant adverse effects (which are no more than minor in other words) on the ecology and water quality of Lake Onslow and the Teviot River;
- (b) the negligible or insignificant adverse effects (which are no more than minor in other words) on angling and the recreational use of Lake Onslow;
- (c) the ability for ORC to review the conditions of consent (in their entirety) should unforeseen significant adverse effects on angling amenity and the recreational use of Lake Onslow arise prior to the expiry of the consents in 2041;
- (d) the imposition of a lake level monitoring regime;
- (e) consistency with the relevant statutory instruments; and
- (f) the national significance of hydroelectricity generation as outlined in the NPSREG and inferred by Policy 4 of the NPSFM.

[101] I **grant** the application lodged by Pioneer Energy Limited to change conditions on two existing water permits (Water Permit 2001.475 and Water Permit 2001.476.V3) associated with Lake Onslow for the damming, taking and use of water in order to increase to the allowable seven-day draw down from 0.2 metres to 0.4 metres.

Signed by the commissioner:



Rob van Voorthuysen
Dated: 11 July 2022

⁷² Suggested by ORC technical reviewer Annabelle Coates but not by Ms Pritchard. At the hearing Ms Coates confirmed that her suggestion in that regard was 'a nice to have' and was not required to mitigate any adverse effects of the PEL application.

⁷³ EIC William Nicolson, paragraph 38.

⁷⁴ To include on the sign contact details and procedures if a boat stranding does occur.

Appendix 1: Changed consent conditions

WATER PERMIT

Pursuant to Section 104C of the Resource Management Act 1991, the Otago Regional Council grants consent to:

Name: Pioneer Generation Limited

Address: 11 Ellis Street, Alexandra

To dam the Teviot River with a 17 metre high gravity dam (Lake Onslow Dam)

for the purpose of creating Lake Onslow for hydroelectric power generation and for irrigation

for a term expiring on 1 April 2041.

Location of activity: Lake Onslow Dam, Lake Onslow.

Legal description of land adjacent to point of damming: Sec 40 SO 22593

Map Reference: NZTM 2000 E1333973 N4950253

Conditions:

Lake Levels

1. During the exercise of this consent, the minimum operating water level of the impoundment shall be 679.9 metres above mean sea level.
2. The rate at which the lake shall be drawn down must not exceed 0.4 metres over any period of seven days.

Dam Safety Requirements

3. The consent holder shall ensure that the Lake Onslow Dam structure and all its appurtenant component and accessory structures are maintained in a safe and stable condition.
4. Safety of the dam shall be managed in accordance with the principles of the operative New Zealand Dam Safety Guidelines, issued by the New Zealand Society on Large Dams (NZSOLD).
5. The consent holder shall provide a report confirming the safety of the Lake Onslow Dam signed by an independent engineer registered under the Chartered Professional Engineers Act 2003, or an equivalent independent engineer with a recognised international qualification, approved by the Consent Authority as having the relevant expertise for the purpose. The report shall be provided on each anniversary of the commencement of this consent or an alternative date as agreed to in writing by the Consent Authority. The report provided to the Consent Authority shall include:
 - (a) photographs of monitoring points which show any visible change from the most recent photographs submitted to the Consent Authority,
 - (b) deformation survey results;
 - (c) an assessment of dam safety; and
 - (d) advice as to works undertaken on the dam for the purposes of dam safety since the last report, and the rationale for such works.

Operation, Maintenance and Surveillance

6. The consent holder shall prepare an Operations, Maintenance and Surveillance Manual, within three months of the commencement date of this consent, for the Lake Onslow Dam and its associated structures. This manual shall be prepared in accordance with the operative New Zealand Dam Safety Guidelines, issued by the New Zealand Society on Large Dams (NZSOLD), and shall be to the satisfaction of the Consent Authority. The manual shall include but not be limited to:
 - (a) Details of routine, intermediate, comprehensive and emergency inspections, including:
 - (i) photographs of monitoring points, such as deformation survey points, seepage zones or crack monitoring devices, during low flow/dry conditions and high flow/wet conditions; and
 - (ii) a plan showing the positions of monitoring points.
 - (b) Surveillance monitoring and data analysis; and
 - (c) Deficiency identification and remediation.
7. The Operations, Maintenance and Surveillance Manual shall be reviewed by an independent suitably qualified person and a copy of the manual and the results of the review shall be provided to the Consent Authority within six months of the commencement of this consent.
8. The Operations, Maintenance and Surveillance Manual shall be updated as required, and a copy of the most up to date plan shall be forwarded to the Consent Authority within one month of any change made. The Consent Authority may request that the manual be reviewed by an independent suitably qualified person at no less than two yearly intervals. The results of the review shall be provided to the Consent Authority within three months of the review being requested.

Emergency Action Plan

9. An Emergency Action Plan shall be prepared within six months of the commencement date of this consent for the Lake Onslow Dam and its associated structures. The Plan shall be prepared in accordance with the operative New Zealand Dam Safety Guidelines, issued by the New Zealand Society on Large Dams (NZSOLD), and shall be to the satisfaction of the Consent Authority.
10. The Emergency Action Plan shall be reviewed by an independent suitably qualified person and a copy of the plan and the results of the review shall be forwarded to the Consent Authority within nine months following the commencement date of this consent.
11. The Emergency Action Plan shall be updated as required, and a copy of the most up to date plan shall be forwarded to the Consent Authority within one month of any change made. The Consent Authority may request that the plan be reviewed by an independent suitably qualified person, at no less than two yearly intervals. The results of the review shall be provided to the Consent Authority within three months of the review being requested.

Dam Safety Review

12. A Dam Safety Review shall be certified by an independent engineer registered under the Chartered Professional Engineers Act 2003, or an equivalent independent engineer with a recognised international qualification, approved by the Consent Authority as having the relevant expertise for the purpose. This review shall be undertaken in accordance with the operative New Zealand Dam Safety Guidelines, issued by the New Zealand Society on Large Dams (NZSOLD), within three years following the

commencement date of this consent, and at intervals of no more than every five years thereafter.

13. The results of the Dam Safety Review shall be forwarded to the Consent Authority and the Central Otago District Council within three months of the review being completed.
14. In the event that an earthquake with an intensity of more than VIII on the Modified Mercalli scale is experienced at the Lake Onslow Dam, or lesser intensity if, in the opinion of the Consent Authority, the structural integrity of the dam may be compromised, an inspection and accompanying audit shall be undertaken as soon as practicable by an independent engineer registered under the Chartered Professional Engineers Act 2003, or an equivalent independent engineer with a recognised international qualification, approved by the Consent Authority as having the relevant expertise for the purpose. A summary report detailing the results of the inspection and audit shall be provided to the Consent Authority within one month of the inspection being undertaken.

Public Safety

15. Prior to 1 December 2023, the Consent Holder must erect and maintain public warning signs adjacent to the concrete boat ramp at approximately NZTM 2000 E1334593 N4949886. The signs must:
 - (a) Be maintained in good repair at all times by the Consent Holder.
 - (b) Be at least 500 millimetres by 500 millimetres and have wording that can be clearly read from 1 metre away;
 - (c) Warn the public of safety and navigation risks associated with the lake, especially at lower lake levels. The signage must include a recommendation that all boats carry two forms of communication that will work when wet.

Waikoura Survey

16. Within 30 months of the commencement date of this consent, the consent holder shall undertake a survey of the waikoura population in Lake Onslow to ascertain its status. The results of the survey shall be forwarded to the Consent Authority and Kai Tahu ki Otago Ltd.

Measurement of Lake Levels

17. The Consent Holder must install, maintain and operate a lake level monitoring site in Lake Onslow at or near the Lake Onslow dam for the duration of this permit as follows:
 - (a) Prior to 1 December 2022, the Consent Holder must install:
 - (i) A lake level recorder;
 - (ii) A datalogger that time stamps a pulse from the lake level meter at least once every 15 minutes and has the capacity to hold at least 12 month of lake level data; and
 - (iii) A telemetry unit that sends all data to the Consent Authority.
 - (b) The Consent Holder must provide telemetry data once daily to the Consent Authority. The Consent Holder must ensure data compatibility with the Consent Authority's time-series database and conform with Consent Authority's data standards.
 - (c) Within 20 working days of the installation of the lake level recorder/ datalogger/ telemetry unit, any subsequent replacement of the lake level recorder / datalogger/ telemetry unit and at five yearly intervals thereafter, and at any time when requested by the Consent Authority, the Consent Holder must provide written certification to the Consent Authority signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:

- (i) Each device is installed in accordance with the manufacturer's specifications; and
- (ii) Data from the recording device can be readily accessed and/or retrieved in accordance with the conditions above.
- (d) The lake level recorder / datalogger / telemetry unit must be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
- (e) All practicable measures must be taken to ensure that the lake level recorder / datalogger / telemetry unit are fully functional at all times.
- (f) The Consent Holder must report any malfunction of the lake level recorder / datalogger/ telemetry unit to the Consent Authority within 5 working days of observation of the malfunction. The malfunction must be repaired within 10 working days of observation of the malfunction or within a timeframe agreed with the Consent Authority in writing and the Consent Holder must provide proof of the repair, including photographic evidence, to the Consent Authority within 5 working days of the completion of repairs.

Review

18. The Consent Authority may, within three months of each anniversary of this consent, in accordance with sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent to ensure the consent holder uses the best and most up-to-date standards of practice in maintaining dam safety and demonstrating compliance with the consent holder's obligations to maintain dam safety.
19. The Consent Authority may, in accordance with sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent within three months either side of the annual anniversary of the date of granting this consent for the purpose of:
 - (a) determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of this consent and which is appropriate to deal with at a later stage; or
 - (b) requiring the consent holder to adopt the best practicable option to remove or reduce adverse effects on the surrounding environment due to the exercise of this consent; or
 - (c) ensuring the conditions of this consent are consistent with any National Environmental Standards, relevant regional plans, and/or the Otago Regional Policy Statement; or
 - (d) reviewing the frequency, type or method of reporting or adequacy of monitoring.

Issued at Dunedin this 13th day of December 2006.

Reissued at Dunedin this 22nd day of December 2006 to correct the legal description.

Reissued at Dunedin this XX day of XX 2022 to change Conditions 2 and 15 and to add Condition 17. Note the remaining conditions have been renumbered.

Our Reference: A384688

Consent No. 2001.476.V4

WATER PERMIT

Pursuant to Section 104B of the Resource Management Act 1991, the Otago Regional Council grants consent to:

Name: Pioneer Generation Limited and Teviot Irrigation Company Limited

Address: 11 Ellis Street, Alexandra

To take and use surface water non-consumptively from Lake Onslow at a maximum rate of 6 cubic metres per second for the purpose of hydroelectric power generation and flow augmentation

For a term expiring 1 April 2041.

Location of activity: Lake Onslow Dam, Lake Onslow.

Legal description of land adjacent to point of abstraction: Sec 40 SO 22593

Map reference: NZTM 2000 E1333973 N4950253

Conditions:

1. The maximum rate of abstraction from Lake Onslow under this consent shall not exceed 6 cubic metres per second.
2. During the exercise of this consent, the minimum operating water level of the impoundment shall be 679.9 metres above mean sea level.
3. The rate at which the lake shall be drawn down must not exceed 0.4 metres over any period of seven days.
4. At all times a residual flow of at least 345 litres per second shall be maintained in the Teviot River, immediately downstream of the Lake Onslow Dam, at grid reference NZTM 2000 E1333942 N4950257.
5.
 - a) The Consent Holder shall install and maintain a:
 - i. Water meter that which will measure the rate and the volume of water taken to within an accuracy of +/- 10% over the meter's nominal flow range at NZTM 2000 E1333817 N4950150. The water meter shall be capable of output to a datalogger.
 - ii. Datalogger that time stamps a pulse from the flow meter at least once every 15 minutes and have the capacity to hold at least twelve months data of water taken.
 - iii. Telemetry unit which sends all of the data to the Consent Authority.
 - b) The Consent Holder shall provide telemetry data once daily to the Consent Authority. The Consent Holder shall ensure data compatibility with the Consent Authority's time-series database and conform with Consent Authority's data standards.

- c) Within 20 working days of the installation of the water meter, datalogger and telemetry unit, any subsequent replacement of the water meter, datalogger and telemetry unit and at five yearly intervals thereafter, when requested by the Consent Authority upon any observed malfunctions, the Consent Holder shall provide written certification to the Consent Authority signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
- i. Each device is installed in accordance with the manufacturer's specifications;
 - ii. Data from the recording device can be readily accessed and/or retrieved in accordance with the conditions above; and
 - iii. that the water meter has been verified as accurate.
- d) The water meter, datalogger and telemetry unit shall be installed and maintained throughout the duration of the consent in accordance with the manufacturer's instructions.
- e) All practicable measures shall be taken to ensure that the water meter and recording device(s) are fully functional at all times.
- f) The Consent Holder shall report any malfunction of the water meter, datalogger and telemetry unit to the Consent Authority within 5 working days of observation of the malfunction. The malfunction shall be repaired within 20 working days of observation of the malfunction and the Consent Holder shall provide proof of the repair, including photographic evidence, to the Consent Authority within 5 working days of the completion of repairs.
6. The Consent Authority may, in accordance with sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent within three months either side of the annual anniversary of the date of granting this consent for the purpose of:
- (a) adjusting the consented rate or volume of water under condition 1, should monitoring under condition 5 or future changes in water use indicate that the consented rate or volume is not able to be fully utilised; or
 - (b) determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or
 - (c) ensuring the conditions of this consent are consistent with any National Environmental Standards, relevant regional plans, and/or the Otago Regional Policy Statement; or
 - (d) adjusting or altering the frequency or method of water take data recording and transmission.
8. The Consent Authority may, in accordance with sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent within six months of 1 October 2021 for the purpose of restricting the exercise of this water permit to allow the exercise of another permit.

Issued at Dunedin this 13th day of December 2006

Reissued at Dunedin this 22nd day of December 2006 to correct the legal description

Reissued at Dunedin this 13th day of November 2013 to change the purpose, to change Condition 4 and Condition 5, and to update the map reference to New Zealand Transverse Mercator

Reissued at Dunedin this 27th day of August 2021, to reflect changes to Condition 5.

Reissued at Dunedin this XX day of July 2022 to change Conditions 3 and 6.