

18 January 2012

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## **Response to RMA section 92 request for further information from West Coast Regional Council**

### **5. Natural features / landscapes**

**Reason:** Although the lake is not identified as an outstanding natural feature/landscape in the Proposed Regional Land and Riverbed Management Plan or the Proposed Land and Water Plan there are criteria for assessment in the West Coast Regional Policy Statement.

#### **Information required:**

- (a) **An assessment of the lake in its current state compared with its altered state (lower lake levels) with respect to the criteria specified in Policy 9.1 of the West Coast Regional Policy Statement.**

At the outset, I note that my qualifications and experience are in the field of assessing landscape and amenity values. I therefore restrict my comments to those parts of the criteria from Policy 9.1 of the West Coast Regional Policy Statement (*RPS*) that are relevant to my expertise.<sup>1</sup> I comment only in general terms on the other matters set out in those criteria (i.e. scientific, recreational or heritage values, and the relationship of tangata whenua to the lake).

*Policy 9.1 of the RPS states:*

***Preserve the natural character of the West Coast's wetlands, lakes and rivers and their margins and protect them, and outstanding natural features and landscapes, from inappropriate subdivision, use and development.***

***In deciding whether subdivision, use and development are inappropriate, matters to be considered will include the following:***

- b) *The extent of sporadic development and its effects on natural character;*

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<sup>1</sup> As TrustPower previously confirmed with Council.

- c) *The degree and significance of actual, potential and cumulative effects on natural character that arise;*

**Response:**

As stated in the Landscape and Natural Character Assessment of November 2010 (*Landscape Assessment*), attached as Appendix E to the Assessment of Environmental Effects, key effects of the proposal from a natural character point of view are the changes in the seasonal fluctuations in the water level of Lake Kaniere, and the changes in water flow in Kaniere River. Also relevant is the widening of the race from near The Landing through to where the race and transmission line intersect. In this area the new race cuts through existing indigenous vegetation. The introduction of an additional power station (Ward Road Power Station plus penstocks) will also have an adverse effect on natural character in its immediate area because of the necessity to remove high quality indigenous vegetation, though revegetation along the new race and around the power station and penstocks will mitigate the effects over time. The extension of the power station at McKays will have only minor affects on natural character. The nature of these effects, and proposed mitigation, is also outlined in detail in Part 8(2) of the Landscape Assessment.

- h) *Where rehabilitation plantings are required, the practicality of using indigenous species, preferably of locally derived stock.*

**Response:**

Rehabilitation planting will be comprised of indigenous species locally sourced, as well as gorse.

*Policy 9.1 continues:*

*“In deciding whether a natural feature or landscape is outstanding, matters to be considered will include the following:*

- a) Its use, value and degree of representativeness of/for scenic, amenity, recreational, heritage, intrinsic, and scientific purposes;*
- b) Its association with areas of significant indigenous vegetation, and significant habitats of indigenous fauna;*
- c) The significance of its association with the coastal environment, lakes, rivers and their margins;*
- d) The relationship of Tangata Whenua and their culture and traditions with their ancestral lands, water, sites, wahi tapu and other taonga;*
- e) The inclusion or exclusion of a water body from a Conservation Order.”*

In the Landscape Assessment, I stated the following:

*“In order to identify whether Lake Kaniere and its surroundings are in fact an outstanding natural feature or landscape, a full regional landscape assessment would need to be carried out, but that is beyond the scope of this brief. The lake is a major feature in a wider landscape. In the absence of a region-wide assessment, it is my opinion (on the*

*basis of wide experience in evaluating landscapes in many parts of New Zealand), that Lake Kaniere and its setting have high scenic, amenity and landscape values, and may well be an outstanding feature or landscape. The lake is surrounded by areas of significant indigenous vegetation.”*

I consider this statement is still valid.

Since completing the assessment in November 2010, TrustPower Limited (*TrustPower*) has provided further detail regarding lake levels and has proposed a new seasonal lake operating regime. This new regime imposes “exceedence zones” that limit the amount of time the lake could be below certain levels for the summer and winter periods.

In summer (November to March) there will be an allowance for lake levels to go below 0.30m for 20% of the time. This includes a 10% exceedence for levels below 0.1m. Over the summer period this equates to a maximum of 30.2 days below a lake level of 0.3m, which includes a maximum of 15.1 days below 0.1m. However, TrustPower’s hydrological modelling shows that, on average, the schemes are likely to be operated so that the lake will only be below 0.3m for 8% of the time, and 0.1m for less than 1% of the time. Lake levels are expected to be full (i.e. at spill/1.0m) for 20% of the time over summer. For the balance of the summer months the lake levels will vary between 0.3m and full.

In winter months (April to October), lake levels will be permitted to drop below 0.1m (a low lake level) for 20% of the time. This would equate to a maximum of 42.8 days over the winter period. During winter, modelling shows that the lake is likely to be below 0.1m for 8% of the time. The lake is expected to be at spill (full) for 4% of the time. For the balance of the winter, lake levels will vary from 0.1m to full.

Under the current regime, the lake levels typically are below 0.3m for 4% of the year, and the lake is full for 4% of the year. In the summer months the lake levels drop below 0.3m for 1% of the year (1.5 days) in summer, and the lake is full for 48% of the summer months (72.5 days).

In light of this background, I comment on the relevant criteria from Policy 9.1 of the Regional Policy Statement below.

***Criterion (a): Its use, value or degree of representativeness of/for scenic, amenity, recreational, heritage, intrinsic, and scientific purposes.***<sup>2</sup>

### **Assessment of the lake’s current state**



Photograph 1

The water level of Lake Kaniere currently fluctuates considerably with drought and high rain falls.

*Photograph 1* taken on 9 February 2011 at Hans Bay Reserve shows the lake full (i.e. at 1.33m). At this level, the lake was spilling over the weir. In terms of its intrinsic values (i.e. its inherent, natural qualities), the lake levels have always varied. For example, the low lake levels experienced in August/September 2011 due to low rainfall/inflows. From the viewpoint of

<sup>2</sup> I note that I will not assess the recreational and heritage aspects of the current and enhanced schemes as they are beyond my scope of expertise and they have otherwise been provided by Mr Rob Greenaway and Dr Rod Clough, respectively.

scenic and amenity values, looking at the lake as a whole, the lower lake levels do not adversely affect these qualities. The lower lake levels result in a thin band of sandy coloured beach around the edge.

For people using the lake edge for recreational purposes such as picnicking and swimming, the lower lake levels result in a band of sand and gravel of variable width intervening between the land and the lake. This is why TrustPower has introduced summer and winter regimes where the lake levels in summer are modeled to be below 0.1m for approximately 58 days per annum (including a maximum of 15 days during summer).



*Photograph 2* also at Hans Bay Reserve shows the lake on 10 April 2010, when the lake level was at 0.62m. A 3–4m width of gravel and stones is exposed around the lake edge. This wider band of gravel allows for sun bathing on the beach. When lake levels get lower than this the visible lake area is reduced and the gravel edge becomes more visually prominent when viewed from the lake edge. The minimum lake level allowed under the current and proposed operating regime for the Kaniere Forks and

McKays Schemes is a further 0.8m lower than shown in Photograph 2.

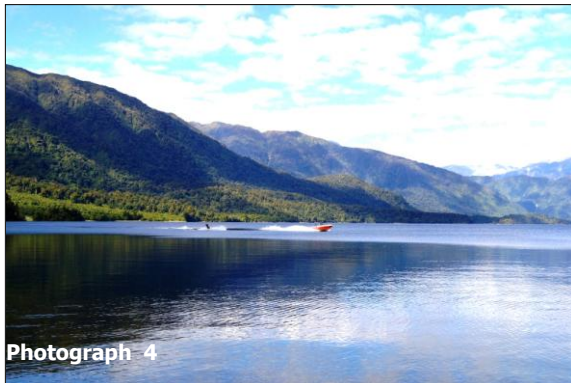
As stated earlier, the lake levels fluctuate considerably under the existing regime. For most people a full lake makes a greater contribution to the pleasantness and aesthetic coherence than does a lake with very low water levels. This is partly because of the amenity and pleasantness enjoyed by people using the lake edges for recreational activities, and partly because at lower levels the lake becomes a less prominent feature in the view. Higher lake levels mean that the water in the lake is more visible and more accessible for boating, swimming and all forms of water recreation. In my opinion the current regime is appropriate from a landscape and visual point of view.

## Assessment of the effects of the lakes altered state relative to criterion (a) above

*Photograph 3* near Hans Bay Boat Ramp shows the lake level at - 0.1m or 1.1m below the crest of the weir. This water level is within the consented minimum (which is -0.2m, or 1.2m below the crest of the weir).



As outlined above, the main difference between the existing and proposed operating regimes is that the lake level will overall be lower for slightly longer periods under the proposed regime than it is at present. In visual and landscape terms this means the gravel and sand around the edge of the lake will be exposed for slightly longer periods.



*Photograph 4 – Water skiing on Lake Kaniere April 10 2010.*

From a landscape/natural amenity perspective the proposed regime will have very little effect on the intrinsic qualities of the lake because the level of the lake fluctuates considerably already. A lower lake level for longer periods means that the lake becomes a less prominent feature in the view. Higher lake levels mean that the water in

the lake is more visible and has a higher amenity value. But the differences between the proposed lake levels and the current lake levels is fairly minimal in visual and landscape terms.

In terms of representativeness, Lake Kaniere is one of a series of lakes in the Westland Region which include Lakes Ianthe, Matahi, Mapourika, Wahapo, Moeraki and Paringa. The only lakes that I can compare it with are Lakes Wahapo and Mapourika, which are located within the Westland Tai Poutini National Park. The surroundings to these two lakes are similar to Lake Kaniere – high quality bush and mountains, but the settlements on Lake Kaniere mean that part of the lake front is slightly more modified than Lake Wahapo. Lake Kaniere is representative of the Westland Lakes from a scenic and amenity perspective, although it has been modified through its long history of hydro and municipal water takes and the proposed regime will not alter or detract from this.

***Criterion (b): Its association with areas of significant indigenous vegetation, and significant habitats of indigenous fauna.***

As stated in the Landscape Assessment, the lake is within the Lake Kaniere Scenic Reserve. The Reserve includes the lake, flanking ranges up to their crests, moraine and outwash terraces to the north, and small recent flats and fans around the lake and contains several different vegetative habitats. These comprise montane forest above 450m along the tops (including kamahi, and quintinia on spurs and faces, rata on narrow ridges; and rata on the broad spurs and ridges) and above these are sub-alpine scrub and sub-alpine grassland. On the lower levels around Lake Kaniere is dense rimu forest.

The bush in the Scenic Reserve that surrounds the lake, and on the south side of Kaniere River, varies in quality. At Canoe Cove and in places along Lake Kaniere Road the vegetation consists of high quality dense rimu forest on outwash terraces and gentle moraine. In the flatter areas there are large rimu, kamahi, quintinia, and sparse understorey of celery pine. There are also locally dense rimu pole stands.

In my opinion, the enhanced lower lake levels will not materially alter the lake's current association with this surrounding indigenous vegetation.

***Criterion (c): The significance of its association with the coastal environment, lakes, rivers and their margins.***

This lake is remote from the coast, but it and its margins are significant. Prolonged very low levels of water in the lake will have an adverse effect on the lakes' margins from a visual and amenity point of view. As detailed above, in response to concerns regarding low lake levels TrustPower has proffered seasonal constraint conditions, and modelling shows that those low levels (i.e. below 0.1m) can be expected to occur for 15 days during summer and for 42 days in winter. From a visual and landscape perspective, these adverse effects are acceptable when compared with the existing situation.

***Criterion (d): The relationship of Tangata Whenua and their culture and traditions with their ancestral lands, water, sites, wahi tapu and other taonga.***

Though this is not my area of expertise, as stated in the Landscape Assessment the lake and surroundings are of value to tangata whenua and have historical associations for Maori. The name is linked to the pounamu (greenstone) history of the area. Kaniere refers to the act of sawing pounamu. Lake Kaniere provided access for Ngai Tahu Maori between Hokitika and Arahura Rivers and between the east and west coasts via Browning Pass. I note that none of the local iwi have submitted on the application.

***Criterion (e): The inclusion or exclusion of a water body from a Conservation Order.***

Lake Kaniere is excluded from a Conservation Order.

**Summary of assessment under Policy 9.1**

In my opinion, the amount of time and frequency that the lake would be permitted to be below levels of 0.3m and 0.1m under the proposed regime is appropriate from a landscape and visual point of view. This is because the seasonal operating lake levels will ensure that landscape amenity regarding the lake is maintained for an appropriate amount of time, particularly in

summer. This is even more so when compared to the predicted periods of time that the lake will reach those levels from the hydrological modelling. The seasonal regime has been designed so that effects on landscape and visual amenity are reduced over the summer months when use of the lake is highest.

From a landscape/natural amenity perspective the new lake level regime will have very little effect on the intrinsic qualities of the lake because the level of the lake fluctuates considerably already. A lower lake level for longer periods means that the lake becomes a less prominent feature in the view. Higher lake levels mean that the water in the lake is more visible and has a higher amenity value. But the differences between the proposed lake levels and the current lake levels is fairly minimal in visual and landscape terms.

Lake Kaniere is a representative example of the many lakes in South Westland and the lower lake levels will not materially affect the lakes current association with its surrounding vegetation. The adverse effects of the proposed lower lake levels (i.e. below 0.1m) on the margins of the lake will only occur for a maximum of 15 days in summer and 42 days in winter, and this is acceptable.

## **Response to RMA section 92 request for further information from Westland District Council**

### **1. Landscape / natural character / amenity**

#### **Reason:**

To fully understand the potential effects of the works required from the intake at Lake Kaniere to the outlet of McKay's tailrace.

#### **Information required:**

- (a) Confirm the assessed landscape status of the project area in terms of the application and the provisions of the Westland District Plan.**

#### **Response:**

I detailed the statutory consideration in Part 1(6) of the Landscape Assessment. In seeking to protect and manage the diverse and distinctive landscapes within Westland District, the Westland District Plan (WDP) does not specifically describe a process for deciding which natural features and landscapes are outstanding. The WDP does, however, suggest examples of outstanding landscapes and features as a guide to assist in deciding what could be considered "outstanding". The examples listed in section 3.10 of the WDC include:

- Land above 300m;
- Lakes lanthe and Matahi;
- Lake Mapourika;
- Lake Wahapo;
- Lake Moeraki;
- Lake Paringa; and
- Saltwater lagoon and the coastline.

Lake Kaniere is not included in the above list. Accordingly, the proposed development will not impinge on the integrity of landscapes in Westland – Objective 3.10.1. Further, the scenic and open and diverse character of Westland, dominated by natural processes, will be maintained – Objective 3.10.2.

In terms of Objective 3.10.3, the proposed changes to water flow in the Kaniere River will be managed so that it does not fall below 300L/s. A portion of high quality rimu forest will be removed by the new race from Lake Kaniere to the transmission line. Whilst this will initially

have high landscape and natural character effects, proposed revegetation and the provision of amenity areas with seating and rest areas would assist in mitigating effects.

**(b) Detail of works required, and assessment of landscape effects, at the intake/tunnel section of the Kaniere Forks scheme to chainage 000m. Plans provide some detail from chainage 000m onward but not in the area before chainage 000m through the 10m construction corridor. Also provide typical cross sections for this area particularly where it enters the reserve and walkway.**

**Response:**

Details of the enhancement works required from the Lake Kaniere intake to chainage 000m were provided as part of TrustPower's further information response dated 18 October 2011.

The existing race, installed 100 years ago in a cleared corridor between 6 and 10 metres wide, has since revegetated. The banks of the intake from the lake are now fully vegetated with some quite tall and thick indigenous vegetation including rimu. The area around the culvert entry under Hans Bay Road is similarly revegetated. Trees and vegetation have grown up around the entry to the existing walking and cycling track on the north side of Hans Bay Road.

The proposed improvement to the intake in the lake, and the 10m wide construction corridor and the installation of a new culvert by cut and cover, will result in the removal of much of the existing vegetation around the existing culvert entry. It will also result in the removal of the trees and vegetation within the 10m wide corridor for the first 70m of the route following the walkway and cycle track.

The visual and landscape and natural character effects of this will initially be high but new indigenous vegetation will be planted, and an amenity picnic area will be provided at The Landing and at chainage 1000-1100m at a proposed buffer storage area. This is provided for in the proposed conditions of consent.<sup>3</sup> Over the next 8 – 10 years as the new planting matures, the effects of these changes will reduce following mitigation planting.

**(d) Detail existing vegetation and amenities removed, and earthworks required including assessment of landscape effects of all works between the intake/landing and chainage 500m and provide details, timing and plans of the proposed landscape/amenities rehabilitation and mitigation for this area.**

**Response**

Details regarding vegetation and earthworks were provided as part of TrustPower's further information response dated 18 October 2011.

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<sup>3</sup> See generally Kaniere Valley Hydro Electric Power Scheme – Kaniere HEPS Westland District Council Proposed Consent Conditions 20 July 2011, in particular sections 1.7.2 (Landscape Rehabilitation Plan), 1.7.3 (Heritage Management Plan), 1.12 (Heritage/Archaeology), 1.13 (Vegetation and Flora), and 1.14 (Indigenous Vegetation Clearance Mitigation).

From The Landing to the point where the proposed race joins the transmission line, the race passes through an area of high quality bush. A corridor of 15m wide would be cleared through this area except for the first 70m which has a corridor of 10m as discussed above. This will have high adverse effects on the natural character of this area initially, and will also affect the amenity values of the area until the remedial planting has had a chance to mature. There will be changes to the existing landform and landscape character through this area. Initially this new race will be highly visible, particularly from the Department of Conservation walkway and a small stretch of Hans Bay Road, and will contrast strongly with the surrounding environment. The proposed revegetation planting and amenity area will mitigate these effects over time. If full revegetation is achieved in accordance with the proposed conditions of consent, then the natural character of the area could be restored after about 10 years.

**(h) Is it proposed over the whole construction site that, post construction, 40% may be left as gorse, with 10% being left as bare ground. Is the conclusion of the assessment effects that this mitigates landscape/character effects of the works particularly along the cycle/walkway. Provide details and plans of the proposed landscaping/revegetation works following construction.**

**Response:**

Details regarding vegetation and earthworks were provided as part of TrustPower's further information response dated 18 October 2011.

The 40% cover of gorse is proposed as a nursing stock for the indigenous vegetation. This mixture of gorse and indigenous species will quickly form a ground cover of vegetation. Over time the indigenous vegetation will grow up to dominate the gorse and will be the predominant vegetation.

Section 1.7.2 of the Kaniere HEPS and McKays Forks HEPS Westland District Council Proposed Conditions of Consent (20 July 2011) detail those matters that are to be covered in the Landscape Rehabilitation Plan (*LRP*). A draft *LRP* providing more detail will be provided at hearing.

**(k) The Kaniere Forks scheme proposes two (2) penstock options from Ward Road to the new power station. Provide an assessment of the landscape effects of each of the two options and whether there is a preferred option.**

**Response:**

As noted in the Landscape Assessment, the two options for the Kaniere Forks penstocks are:

- Option 1: to carry a penstock straight to the power station from the point where the race meets Ward Road. It would be located in a 20m wide penstock corridor and would be longer than Option 2; and
- Option 2: to follow the existing race alignment with a 15m wide construction corridor to a much shorter penstock running down to the power station within a 10m wide corridor that is currently cleared as a result of a previous canal washout.

Since getting the latest more detailed drawings I have reversed the opinion contained in my original landscape assessment. In terms of effects on natural character, amenity values and landscape, both options will generate some effects. Option 1 runs parallel to Ward Road and would be visible from the road, west of Ward Road bridge for 160m. It would mean the clearance of a large area of vegetation alongside the road, but over time this area would be revegetated with indigenous vegetation. Option 2 would involve the widening of the Kaniere Race, to a 15m wide corridor and the removal of vegetation from both side of the race. The penstock for Option 2 would be shorter, and would be located on the slope of the river bank. The penstock would be less visible from Ward Road than Option 1. Option 2 is accordingly the preferred option from a landscape and visual effects perspective.

**l) The McKays Scheme provides different options prior to the buffer pond and new penstocks. Provide an assessment of the landscape effects of each of the two options and whether there is a preferred option.**

**Response:**

An assessment of the landscape effects of these two options was provided in the Landscape Assessment. In brief, the two suggested enhancement proposals are:

- Option 1: refurbishing the tunnel so that it will have an increased diameter that can pass a 9 cumec flow; and
- Option 2: install an 850m long canal to by-pass the tunnel. Between the start of the tunnel and McKays Creek Power Station there is primary rimu/kamahi forest in the Kaniere Farm Conservation Area, which is of high ecological value.

If the tunnel is refurbished under Option 1, there will be no landscape or natural character effects in the long-term, though there may be some visible construction effects in the short-term.

Under Option 2, the canal would be longer than the tunnel, and would be excavated to a depth of 35m. An estimated 550,000 cubic metres of earthworks will need to be removed to create the new canal. The excavated material will be placed in low lying paddocks in the adjacent Kaniere Farms and will be used to back fill the existing sections of McKays race that will be isolated due to the works. The canal surrounds will be revegetated.

Whilst the tunnel would be preferable from a landscape and natural character perspective either outcome would be acceptable, if the Landscape Rehabilitation Plan is implemented.

**m) The McKays Scheme proposes two new above ground penstocks between the new headpond and the enhanced station. Provide an assessment of the effects and proposed mitigation.**

**Response:**

The new penstocks will be installed from the new headpond to the McKays power station. The relatively short length and steep gradient of the penstock favours steel as the likely fabrication material, although alternatives may be considered in detailed design. Initially one penstock will be installed as the existing penstock will still be operational.

However, provision will be made for an additional penstock in the new location so that it can be installed when the existing penstock reaches the end of its design life. The vegetation on this terrace face has been cleared for the installation of the existing penstock. The vegetation is not of high value. The existing power station is well located on a river terrace on the south west side of Kaniere River up against a rock bank. It is not visible from Lake Kaniere Road. The penstocks will be approximately 30-40m long, and will be on a steep gradient immediately behind (south west of) the power station. In accordance with the Landscape Rehabilitation Plan and proposed conditions of consent, the exposed slopes will be revegetated with low growing ground cover plants to control erosion over the longer term. Overall the extension to the power station and the installation of the penstocks will have minor effects on natural character once the revegetation has matured. This is largely because the immediate area is already significantly modified and is not readily viewable by or accessible to the public.

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18 January 2011