LAKE ŌKĀREKA: LAKE LEVEL MANAGEMENT PLAN

June 2025

Version 2

1. The aim is to maintain the lake within the TARGET RANGE of RL 353.500 m to RL 353.900 m where possible.
The over-riding objectives of this management plan (in order of priority) are: **i. To take actions to keep the lake level within the TARGET RANGE as much as possible.** **ii. Where that is not possible the next priority is to take actions that prevent flooding damage to homes and essential public infrastructure,** **iii. Take actions to minimise low lake levels below TARGET RANGE if practical, and** **iv. Take actions to minimise negative impacts of the ecology of the Waitangi Stream.**
In doing this any potential or actual erosion effects on the Waitangi Stream will be taken into account and outflows will be managed to ensure risk of serious damage is minimised.

Contents

1. Introduction

The Bay of Plenty Regional Council (BOPRC) is responsible for managing the level of Lake Ōkāreka. Management of the lake first commenced in the 1960s as a result of extremely high lake levels causing flooding of local properties including some homes. The lake has no surface outlet and so extremely wet periods can raise ground water levels and cause the lake level to increase, threatening flooding of property and possibly infrastructure. As a result, a pipeline was constructed to manage lake levels that has been in use since the 1960s.

The aim is to maintain the lake within the TARGET RANGE of RL 353.500 m to RL 353.900 m where possible.

At times, extended dry periods will result in the lake falling below that level and this is outside the control of council staff. Conversely, during extended periods of wet weather, the level may go above the target range.

The over-riding objectives of this management plan (in order of priority) are:

i. **To take actions to keep the lake level within the TARGET RANGE as much as possible.**

ii. **Where that is not possible the next priority is to take actions that prevent flooding damage to homes and essential public infrastructure,**

iii. **Take actions to minimise low lake levels below TARGET RANGE if practical, and**

iv. **Take actions to minimise negative impacts of the ecology of the Waitangi Stream.**

In doing this any potential or actual erosion effects on the Waitangi Stream will be taken into account and outflows will be managed to ensure risk of serious damage is minimised.

BOPRC in developing this Management Plan recognise that the management of the level of Lake Ōkāreka is of significant public interest and so council commits to communicating with the local community from time-to-time on the operation of the management plan. BOPRC will undertake a review of the management plan if consultation with the community indicates changes are necessary, or if there are any major improvements made to the infrastructure that supports the management of Lake Ōkāreka lake levels.

BOPRC (Lake Operations) now hold five Resource Consents to expire in 2044 that authorise the management of the level of Lake Ōkāreka. These are attached in Figure 2.

The Key matters in these consents are summarised:*

- The TARGET RANGE as detailed above, [RM19-0347-BC.03 C 3.1]
- The maximum flow rate is 500 L/s, [RM19-0347-DC.01 C 3.1]
- The minimum flow rate is 100 L/s, [RM19-0347-DC.01 C 3.2]
- The operators are required to submit a Lake Management Plan, [RM19-0347-BC.03 C 3.3]
- The Lake Management Plan must cover details of management guidelines, monitoring and reporting. [See below for specific consent conditions]

*NB: in this document where resource consent conditions are referenced, the consent number and condition will be contained in brackets for example: [RM19-0347-BC.03 C 3.1]

1.1 Management Plan Updates

This is version 2 of the management plan and replaces Version 1, May 2020. This current version reflects the management of Ōkāreka lake levels since the extensive erosion protection works, pipeline upgrade and removal of the overland flow pipe and pump between 2019 and 2021. This infrastructure is shown pictorially in Section 3, Figure 2. The increased capacity of the upgraded pipeline negated the need for the overland pipe and pump with this system removed in September 2021. The pipe upgrade and erosion protection works enabled an increased flow capacity and Lakes Operations manage lake level increases much more efficiently. Note: The Flow Control Operation Guidelines shown in Figure 1 have not changed.

The extensive erosion protection of the Waitangi stream does now not require the frequent inspection regime that was previously required so inspection frequencies have reduced, as reflected in Table 3. Trout monitoring in the lower Waitangi stream is now not required, however, trout movements are still observed during the spawning period.

Also, BOPRC's file management system 'Objective' is no longer in use, and all records have been moved to 'SharePoint'. References to these records are updated in this version.

2. Control Guidelines

2.1 Operational Guidelines

Operational Guidelines for managing lake level within the TARGET RANGE [RM19-0347-BC.03 C 3.2a] are shown in Figure 1. It must be noted here, the flow chart is a general guide only. Operator judgement to adjust flows is necessary e.g. consideration of flows during maintenance work on the control structure, current season, long periods of dry and wet weather, weather forecasts, whether lake level is rising or falling, and trout spawning season (1 May to 30 July).

2.2 Flow control Method

[RM19-0347-BC.03 C 3.2b] The control of flow from Lake Ōkāreka is currently managed by a gravity pipeline and gate valve. The gravity pipeline flow is controlled by a manually operated gate valve part way along the pipeline length. Refer to Figure 2 in Section 3 for this detail.

Flow changes as a result of manual valve adjustments are measured by the Waitangi stream flow gauge at Spencer Road. This telemetry site is linked to the BOPRC Hydrotel monitoring system allowing real-time interrogation and long term recording of data. It must be noted here that the stream gauge at this point measures all upstream flow including spring and catchment water that does not come from Lake Okareka via the controlled pipeline system. Generally, with the valve fully closed this residual flow is in the order of 20 L/s, or less. The gravity pipeline can pass flows of up ~800 L/s depending upon lake level (head) and stormflows; however, the pipeline is controlled so that flows do not exceed 500 L/sec as per [RM19-0347-DC.01 C 3.1]

2.3 Monitoring methodology

Lake water level is monitored using the Lake Ōkāreka lake level station. This is linked to the BOPRC Hydrotel monitoring system and can be interrogated remotely on a daily basis. [RM19-0347-BC.03 C 3.2c]

As for the flow control method, stream flow measurement is undertaken at Spencer Road in the Waitangi Stream. [RM19-0347-WT.01 C 4.1] As described, it is linked to the BOPRC Hydrotel monitoring system allowing real-time interrogation and long-term recording of data. Note: as previously mentioned, the gauge at this point measures all upstream flow including spring and catchment water that does not come from Lake Okareka via the controlled pipeline systems. Generally with the valve fully closed this residual flow is in the order of 20 L/s, or less.

When the overland pipeline was in operation, records were maintained manually on a spread sheet in Objective. [RM19-0347-WT.01 C 4.2, 4.3 and 4.4]. Daily records of the following are maintained in Sharepoint – Doc Id: BOPRC-610286094-30211 or OKAREKA Lake Level Management - Flow Rates and Inspections Record.xlsx

- Hours pumped;
- Abstraction rate (litres per second);
- Quantity of water taken from Lake Okareka (cubic metres per day); and
- If no water is taken, the volume must show zero (0) cubic metres.
- Water quality is monitored monthly in the BOPRC NERMN programme at a central lake location. This provides an on-going record of water quality within Lake Ōkāreka and no additional monitoring is required at the outlet. [RM19-0347-BC.03 C 3.2c]

2.4 Erosion Control

[RM19-0347-DC.01 C 3.3] The operator is required to reduce the rate of discharge if erosion is resulting from the discharge, or if instructed to do so by the BOPRC regulatory staff. The practical application of this is to reduce flows where inspection has identified unacceptable erosion that poses an environmental issue, i.e. sediment discharge or risk of bank failure. At the time of inspection judgement will be necessary to weigh up level of erosion risk versus the impact on lake levels of reducing flow.

Where the flow is reduced as a result of erosion the flow shall not be increased until authorised to do so by BOPRC regulatory staff.

Erosion has been substantially negated through extensive erosion and protection control work undertaken in 2019 – 2021 in the Waitangi Stream below the outlet. This can be seen in Figure 2, Section 3. As a result, stream and culvert inspection frequencies have reduced from the previous management plan.

2.5 Outside of TARGET RANGE notification

[RM19-0347-BC.03 C 3.2d] The operator must notify BOPRC, Rotorua Lakes Council (RLC), The Department of Conservation (DOC) and Te Arawa Lakes Trust (TALT) within 5 working days if the lake moves out of the TARGET RANGE, and outline the management response to address the issue. This timeframe is considered appropriate as if the minimum level is triggered, then it is due to lack of rainfall, and the only possible response is to close the valve and await rainfall. Conversely where the maximum level is breached then the Flow Control Operation Guidelines in Figure 1 provide direction as to how to manage this.

2.6 Low flow notification

[RM19-0347-BC.03 C 4.3] The operator will notify the BOPRC within 24 hours in the following events:

1 If the rate of flow in the Waitangi Stream falls below 100 L/s or

2 If either pipeline has to be closed off for any specific reason; and

3 When normal flow through the closed pipeline resumes.

2.7 Annual Report

[RM19-0347-BC.03 C 3.2e] The operator will provide a report on the management of operation in August each year, covering the previous 12 months operation up to 30 June. The report will include the following details:

1 Overview of lake levels,

2 Water quality monitoring data,

3 Commentary on any major factors influencing the lake level range, in particular the climate over the period.

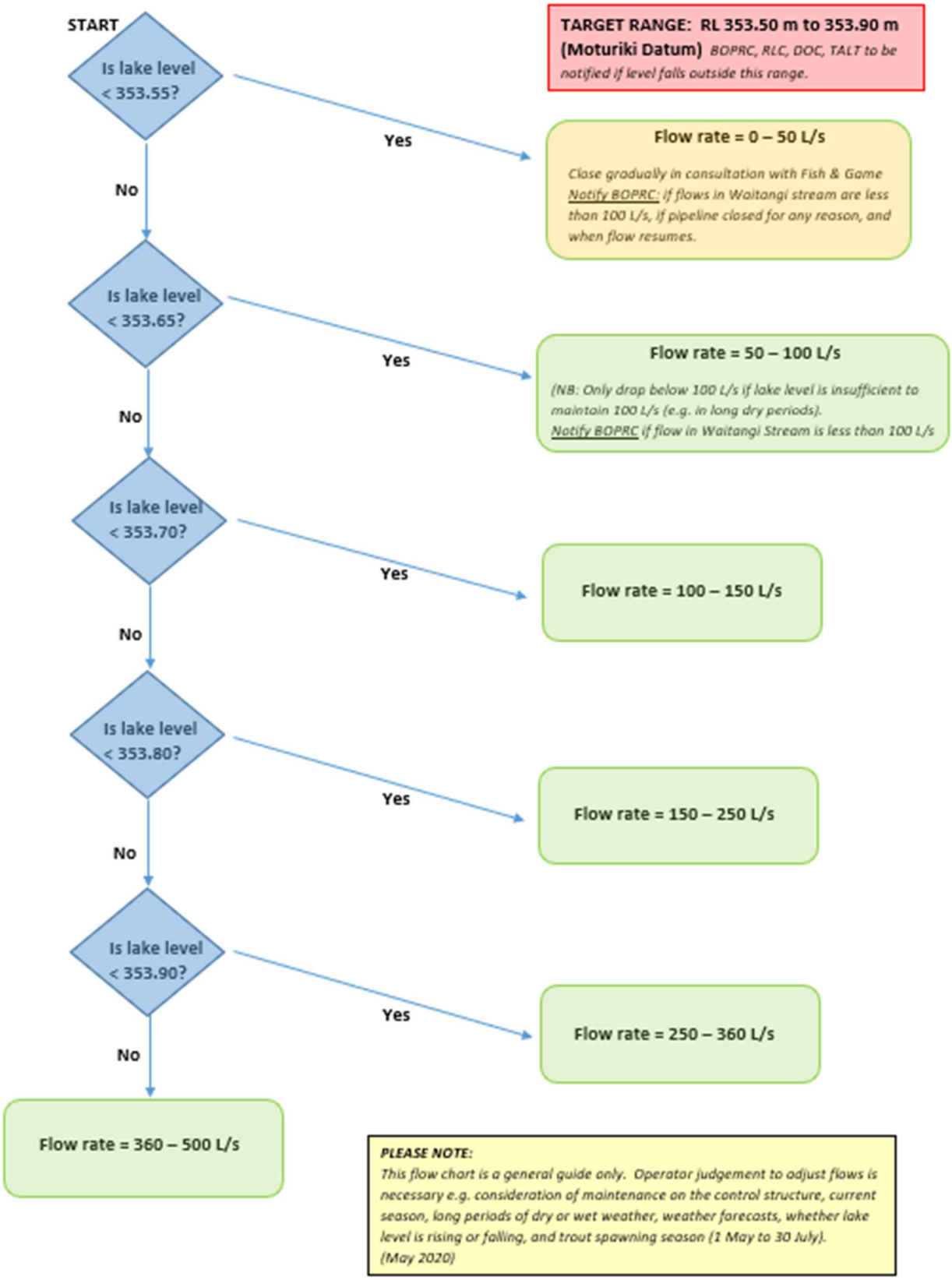
Table 2: Lake Ōkāreka Level Control Guidelines

Section	Control Guideline activity	Action	Timing or frequency
2.1	**Operational Guideline**	Monitor lake levels via Hydrotel system in the first instance, and adjust flows in accordance to the Operational Guideline flow diagram using 2.2 below. Automated email notifications sent to operator when lake levels reach levels that require lake level adjustment action.	Daily lake level monitoring Adjust flows as required Note: A degree of subjectivity required for adjustments, e.g. forecasted weather patterns to be taken into account i.e. storm events, or long dry periods
2.2	**Flow control Method**.	Operate control valve up to 500 L/s	Operation depends on lake level
2.3	**Monitoring methodology**	1. Lake level and stream flow monitored on Hydrotel 2. Water quality monitored by NERMN programme 3. Residual stream flow is about 20L/s or less with valve closed	Daily monitor of lake level and streamflow Monthly water quality sampling
2.4	**Erosion Control**	Flow must be managed to address erosion problems, follow compliance instruction and only increase flow when instructed.	After erosion identified by inspection or instruction from compliance staff
2.5	**Lake Level Outside of TARGET RANGE notification**	Must notify BOPRC, RLC, DOC and TALT if outside target range.	Within 5 working days
2.6	**Low flow notification**	Must notify BOPRC if flow < 100 L/s, flow off (and reason) and when flow resumes.	Within 24 hours
2.7	**Annual Report**	1. Overview of lake levels, 2. Water quality monitoring data, 3. Major factors influencing the lake level range, in particular the climate over the period.	Annually in August for previous 12 months up to 30 June.

*Note: This table is only a summary. For more detail refer to the Control Guideline section of the Lake Level Management Plan.

2.8 Flow Control Operation Guidelines

Figure 1: Flow Control Operation Guidelines



3. Management and monitoring of control structures, canal, pipeline and Waitangi Stream

The lakes operational staff undertake regular programmed inspections of the infrastructure associated with managing water levels in Lake Ōkāreka. The inspections are to ensure all infrastructure is maintained in sound working condition and if necessary maintenance work is programmed to remedy any faults identified. Both inspection details and any recommended remedies must be recorded in the operational spread sheet Sharepoint – Doc Id: BOPRC-610286094-30211 or OKAREKA Lake Level Management - Flow Rates and Inspections Record.xlsx. Appendix 5.1 shows the location of the infrastructure associated with the inspections.

3.1 Monitoring programme and frequency

[RM19-0347-BC.03C 4.1] and [RM19-0347-DC.01 C 5.1 &5.2] The operator undertakes inspections of the infrastructure according to the following frequency. The results of inspection are recorded in the BOPRC operational spread sheet and are available for perusal [RM19-0347-BC.01 C 5.4].

Table 3: Monitoring/Inspection Programme for Control Structures, Canal, Pipeline and Waitangi Stream.

Inspection description	Frequency	Notes
Lake intake inspections to ensure weeds and debris are not impeding flows from the lake.	**At least Weekly** inspection of lake inlet to canal.	Occasional clearing of vegetation debris from the lake inlet area.
Pipeline inspections at inlet/screen and outlet for the gravity pipeline.	Inlet screen to be cleared of debris **at least weekly** when lake is discharging. Outlet inspected **at least weekly** for any impeding objects.	The inlet screen may need weed removal up to daily at times, this can be monitored also by checking changes of flow rate on Hydrotel (sharp decreases in flow).
Stream inspections to monitor any unexpected erosion.	**Annually** when reduced flows allow safe in-stream inspection.	Ideally undertaken at the end of summer in February and October after any high Winter flows.
Inspections of the series of culverts on the stream section.	**Monthly** when flows reach 500 L/s. **Annually** when in-stream inspections are undertaken and before trout spawning season commencing 1st May.	Culvert inspections should include inspection of any device installed to enhance fish passage.

3.2 Inspection Record

[RM19-0347-BC.03 C 4.2] and [RM19-0347-DC.01 C 5.2]: The operator will keep a comprehensive record of infrastructure inspections in the operational spread sheet. The record includes:

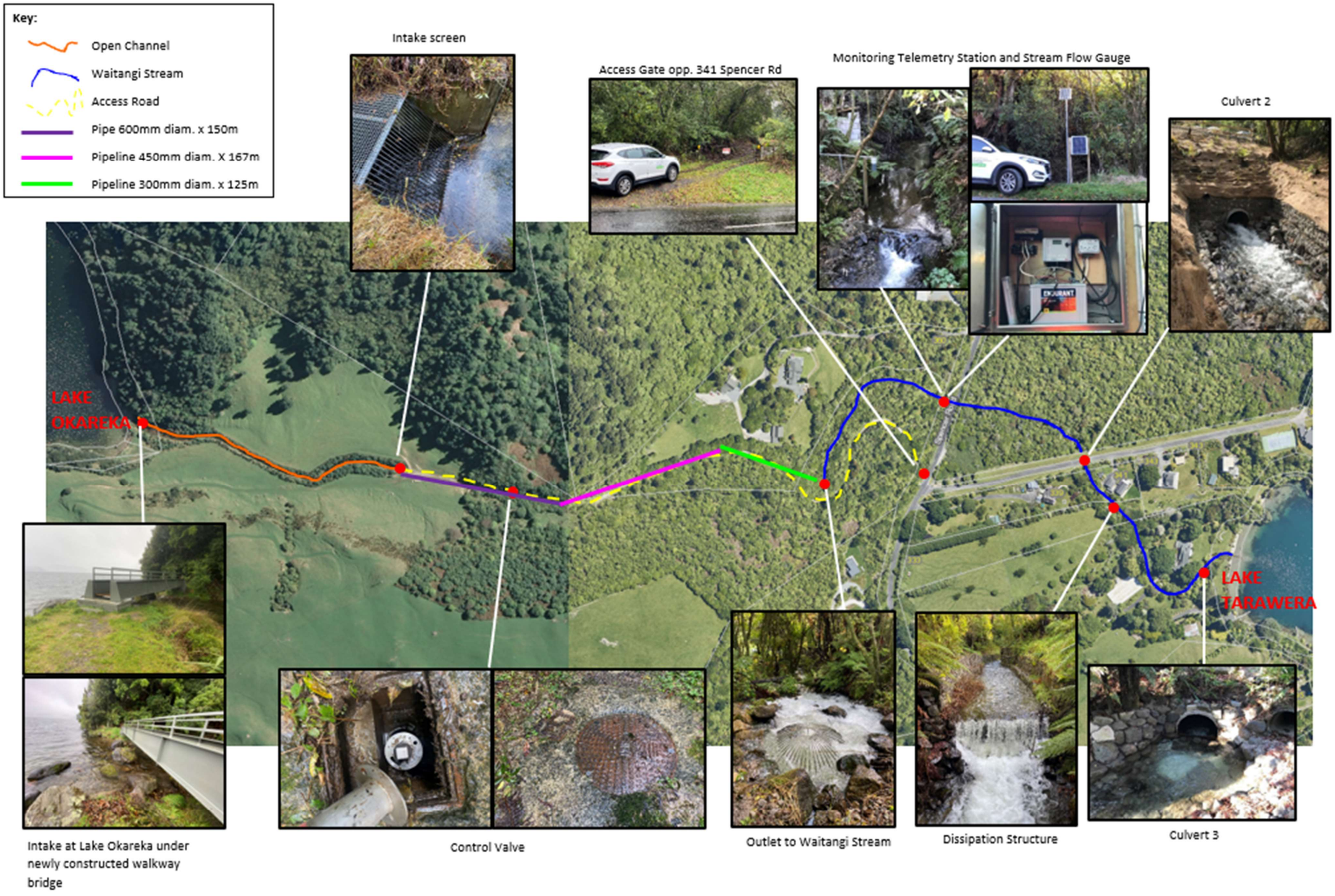
- Every erosion and scour inspection carried out; and
- The date and description of any remediation work carried out.

Table 4: Management and Monitoring of Control Structures

Section	Management and monitoring of control structures, canal, pipeline and Waitangi Stream	Action	Timing or frequency
3.1	**Monitoring programme and frequency**	Follow monitoring programme Table 3	Follow frequency in Table 3
3.2	**Inspection Record**	Maintain complete inspection record and actions taken in database	Every programmed inspection

3.3 Lake Ōkāreka Level Control Infrastructure

Figure 2: Lake Ōkāreka Level Control Infrastructure



4. Staff responsibility/roles and redundancy

The following outlines responsibility and roles in council for operating this management plan.

i. The operation of the management plan resides in the Integrated Catchments portfolio and the Lake Operations Manager and Lakes Operations Officer is responsible for the upkeep of the management plan and on-going lake level operation.

ii. On a day-to-day basis the Lake Operations Team has capacity to undertake daily checks of the lake level during weekdays, and where necessary undertake daily checks during weekends and public holidays where necessary. Weekend checks are not normally necessary; however, they may be required when high rainfall is expected or at times when extremely high lake levels or discharge flows are occurring and closer management of the pipeline and valve is necessary.

iii. Additional operational capacity is maintained through the Rotorua Catchments Team to assist with day-to-day operations if necessary. At least one Land Management Officer are trained to interrogate lake levels and manage the lake outflow according to the management plan if necessary.

iv. Lake level and stream flow can be monitored in the office and remotely using the Hydrotel application or accessing live data on the Environmental Data Portal on the BOPRC public website. Alternative access to stream flow data can be undertaken by site visit to the data recorder at Spencer Road and interrogation of the data logger provides 5-minute updates.

v. Appendix 5.1 shows the location of the inlet, inlet screen, control valve, stream flow data logger, and the access gate for access to the pipeline site. All the equipment is locked to ensure only authorised staff can access. Access is available using the BOPRC Stop Bank key.

Table 5: Staff Roles and Responsibility for Lake Ōkāreka Level Management.

Section	Staff roles and responsibility	Responsibility	Timing or frequency
4) i	Level Management Plan	Lake Operations Team within Integrated Management Group	Oversee and review plan, initially by 31 May 2020 and then as necessary.
4) ii	Day-to day operations	Lake Operations Team	Daily during work week, daily during holidays where high levels or high rainfall predicted.
4) iii	Additional operational capacity	Back-up support Rotorua Catchments	6-monthly review of capability with LMO from Rotorua Catchmentsto ensure capability
4) iv	Access to Hydrotel and Environmental Data Portal on BOPRC public website.	Data on lake level and stream flows	Daily access. BOPRC website is only back-up if Hydrotel not available and stream flows can be monitored at Spencer Road data logger if necessary
4) v	Access to control and pipeline areas	All operators	At any time using BOPRC stop bank key.

5. Appendices

5.1 Resource Consents

Resource Consent

BAY OF PLENTY REGIONAL COUNCIL
TOI MOANA

Resource Consent RM19-0347-AP

Following the processing of the Application received on the 19 June 2019, the Bay of Plenty Regional Council has granted the applicant(s):

Bay of Plenty Regional Council

Consent(s) to:

RM19-0347-BC.01	Lake Structure	Expiry	30 October 2044
RM19-0347-BC.02	River Structure	Expiry	30 October 2044
RM19-0347-BC.03	Beds Damming and Diversion	Expiry	30 October 2044
RM19-0347-DC.01	Discharge to Water	Expiry	30 October 2044
RM19-0347-WT.01	Surface Water Take	Expiry	30 October 2044

The consent(s) are subject to the conditions specified on the attached schedule(s) for each activity. Advice notes are also provided as supplementary guidance, and to specify additional information to relevant conditions.

The Resource Consent hereby authorised is granted under the Resource Management Act 1991 does not constitute an authority under any other Act, Regulation or Bylaw.

DATED at Whakatane this 17th day of December 2019

For and on behalf of The Bay of Plenty Regional Council

Fiona McTavish
Chief Executive

Report Date: 17 December 2019 Report ID: BRCC0NRP042 Page: 1 of 18

Bay of Plenty Regional Council

Resource Consent

Pursuant to the Resource Management Act 1991, the **Bay of Plenty Regional Council**, by a decision dated 17 December 2019, **hereby grants**:

A resource consent:

- **Under section 13(1)(a) of the Resource Management Act 1991 and Rule BW R36 (Rule 71) of the Bay of Plenty Regional Natural Resources Plan and Rule 12.2.5(d) of the Tarawera River Catchment Plan, to undertake a discretionary activity being to place, use and maintain an intake structure in, on and over the bed of Lake Ōkāreka, to place, use and maintain a discharge structure in the Waitangi Stream, and to place, use and maintain erosion protection structures in, on and over the bed of the Waitangi Stream.**

subject to the following conditions:

1 Purpose

1.1 The purpose of this resource consent is to authorise and specify conditions on the placement, use and maintenance of a surface water intake structure in Lake Ōkāreka and the discharge canal; the placement, use and maintenance of two water discharge structures in the Waitangi Stream; and erosion protection structures in, on and over the bed of the Waitangi Stream.

2 Location

2.1 The activities authorised under this consent must be located at Lake Ōkāreka and the discharge canal, the Waitangi Stream, Spencer Road, with the intake structure located at or about map reference NZMS 260 U16 0610 3050, the outlets at or about map reference NZMS 260 U16 0640 3050 and the erosion protection structures in the section of the Waitangi Stream between Spencer Road and Lake Tarawera, as shown on the plan referenced as BOPRC Approved Plan RM19-0347/1.

3 Structure Works

3.1 Any scour of the Waitangi Stream bed or banks resulting from works under this consent, must be effectively stabilised and remediated as soon as practicable.

3.2 Where practicable machinery must be kept out of the Waitangi Stream.

3.3 Fuel storage or machinery refuelling must not occur where fuel could enter the Waitangi Stream or Lake Ōkāreka in the event of a spillage.

3.4 The consent holder must ensure that all construction equipment, machinery, plant, and debris is removed from the work site on completion of works.

3.5 No vegetation, soil, slash and other debris shall be deposited in the Waitangi Stream or Lake Ōkāreka, or left in a position where the material could enter water.

3.6 Every precaution must be taken during the works to ensure that the Stream and Lake banks are not

damaged and that their erosion resistance is not compromised by the works activity.

3.7 Any exposed areas of ground resulting from the works associated with this consent must be effectively stabilised by vegetative cover or other methods as soon as practicable, following completion of works.

3.8 The consent holder must ensure that no water associated with the mixing, pouring, placing and cleaning of concrete structures and/or equipment is released into the Waitangi Stream or Lake Ōkāreka.

3.9 Within 30 working days of completion of the installation of the structures authorised under this consent, the consent holder must submit written notification to Bay of Plenty Regional Council to confirm that the works and structures have been undertaken in accordance with the plans and specifications identified within the application documents or authorised by the conditions of this consent.

4 Structures

4.1 The structures must be in general accordance with the information submitted with the application, being:

a) The lake discharge structure

b) The intake structure and pipes located within the intake canal;

c) The dissipator in the Waitangi Stream

d) The rock rip rap located at the discharge of the pipeline in the Waitangi Stream;

e) The erosion protection material placed around Culvert 2;

f) The erosion protection structures immediately downstream of Culvert 2;

g) The works around and upstream of Culvert 3; and

h) The erosion protection material around Culvert 3.

4.2 Prior to works being undertaken on any of the above structures the consent holder must provide to the Bay of Plenty Regional Council a design for the works for certification that the works are in accordance with good engineering practice. No works shall be undertaken prior to the certification being provided.

4.3 Prior to the construction of the structures associated with Culvert 3, the consent holder must provide to the Bay of Plenty Regional Council a design report for the works, based on the information contained in the River Lake updated report dated 25 September 2018. The design report must incorporate the structures identified in BOPRC Approved Plan RM19-0347/3. Certification of the Plans must be obtained from the Bay of Plenty Regional Council prior to works commencing.

4.4 Prior to providing the design report referred to in condition 4.3, the consent holder must seek comments on the design from Eastern Region Fish and Game. Any comments received must be included in the deisgn report.

4.5 The consent holder must ensure that the structures are designed to avoid erosion of the bed or banks of the Waitangi Stream and Lake Ōkāreka and hazards to people using Waitangi Stream, Lake Ōkāreka or the discharge canal.

4.6 Any scour of the intake channel or the bed or banks of Lake Ōkāreka resulting from the operation of the intake structure, must be effectively stabilised and remediated to the satisfaction of the Bay of Plenty Regional Council.

4.7 No works shall be undertaken in the Waitangi Stream during the trout spawning period, being 1 May to 30 July, unless otherwise authorised by the Bay of Plenty Regional Council.

4.8 The consent holder must maintain, to the satisfaction of the Chief Executive of the Bay of Plenty Regional Council, or delegate, a mussel spat rope or similar system in Culvert 1 and Culvert 2 to provide fish passage for native fish. Should any maintenance works be undertaken to the culverts, the consent holder must provide confirmation from a suitably qualified and experienced freshwater ecologist that fish passage has been maintained.

5 Maintenance

5.1 The consent holder must ensure that the structures authorised by this consent are maintained in a sound working condition at all times, and must undertake any maintenance work, including maintenance of the bed or banks of the Waitangi Stream or Lake Ōkāreka, so directed by the Bay of Plenty Regional Council.

5.2 The consent holder must inspect the culverts and erosion protection structures authorised by this resource consent on an annual basis or as otherwise required in accordance with the Lake Management Plan.

5.3 In the first trout spawning season (1 May – 30 July inclusive) following the construction of the structures associated with Culvert 3 , the consent holder must undertake regular (at least fortnightly) inspections to monitor the presence of trout both upstream and downstream of Culvert 3 to confirm trout are able to access the spawning gravels below the falls. Should it be identified that trout passage is not adequate, the Consent Holder shall must engage a suitably qualified and experienced ecologist to prepare and implement a Remediation Plan to identify modifications to Culvert 3 required to achieve suitable passage. The Remediation Plan shall be certified by the Chief Executive of the Bay of Plenty Regional Council, or delegate, prior to any remedial actions being undertaken.

5.4 The Consent Holder must maintain records of, and provide to the Bay of Plenty Regional Council upon request:

a) Every inspection of the structures carried out; and

b) The date and description of any maintenance work carried out.

6 Review of Consent Conditions

6.1 In accordance with section 128(1) of the Resource Management Act 1991, the Bay of Plenty Regional Council may, on completion of any assessment of effects, environmental investigation or compliance report received by the Regional Council that shows there is an adverse effect on the environment as a result of the structures, serve notice on the consent holder under s128(1)(a)(i) and/or s128(1)(a)(iii) of the Resource Management Act 1991 of its intention to review the conditions of this consent. The intention of such a review is for the purpose of:

(a) Dealing 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; and/or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment

6.2 The fair and reasonable costs associated with any such review shall be recovered from the consent holder (see Advice Note 3).

7 Resource Management Charges

7.1 The consent holder must pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the Resource Management Act 1991.

8 Term of Consent

8.1 This resource consent shall expire on 30 October 2044.

9 The Resource Consent

9.1 The Consent hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw.

Advice Notes

1 The consent holder is advised that non-compliance with consent conditions may result in enforcement action against the consent holder and/or their contractor(s).

2 Notification required by these conditions shall be directed (in writing) to the Regulatory Compliance Manager, Bay of Plenty Regional Council, PO Box 364, Whakatāne, (or fax 0800 368 329 or email notify@envbop.govt.nz) including the consent number RM19-0347.

Bay of Plenty Regional Council

Resource Consent

Pursuant to the Resource Management Act 1991, the **Bay of Plenty Regional Council**, by a decision dated 17 December 2019, **hereby grants**:

A resource consent:

- **Under section 13(1) of the Resource Management Act 1991 and Rule BW R16 (Rule 59A), relating to works around Culverts 2 and 3 on the Waitangi Stream, as a controlled activity**

subject to the following conditions:

1 Purpose

1.1 The purpose of this resource consent is to authorise and specify conditions on the placement, use and maintenance of a surface water intake structure in Lake Ōkāreka and the discharge canal; the placement, use and maintenance of two water discharge structures in the Waitangi Stream; and erosion protection structures in, on and over the bed of the Waitangi Stream.

2 Location

2.1 The activities authorised under this consent must be located at Lake Ōkāreka and the discharge canal, the Waitangi Stream, Spencer Road, with the intake structure located at or about map reference NZMS 260 U16 0610 3050, the outlets at or about map reference NZMS 260 U16 0640 3050 and the erosion protection structures in the section of the Waitangi Stream between Spencer Road and Lake Tarawera, as shown on the plan referenced as BOPRC Approved Plan RM19-0347/1.

3 Structure Works

3.1 Any scour of the Waitangi Stream bed or banks resulting from works under this consent, must be effectively stabilised and remediated as soon as practicable.

3.2 Where practicable machinery must be kept out of the Waitangi Stream.

3.3 Fuel storage or machinery refuelling must not occur where fuel could enter the Waitangi Stream or Lake Ōkāreka in the event of a spillage.

3.4 The consent holder must ensure that all construction equipment, machinery, plant, and any debris is removed from the work site on completion of works.

3.5 No vegetation, soil, slash and other debris shall be deposited in the Waitangi Stream or Lake Ōkāreka, or left in a position where the material could enter water.

3.6 Every precaution must be taken during the works to ensure that the Stream and Lake banks are not damaged and that their erosion resistance is not compromised by the works activity.

3.7 Any exposed areas of ground resulting from the works associated with this consent must be

effectively stabilised by vegetative cover or other methods as soon as practicable, following completion of works.

3.8 The consent holder must ensure that no water associated with the mixing, pouring, placing and cleaning of concrete structures and/or equipment is released into the Waitangi Stream or Lake Ōkāreka.

3.9 Within 30 working days of completion of the installation of the structures authorised under this consent, the consent holder must submit written notification to Bay of Plenty Regional Council to confirm that the works and structures have been undertaken in accordance with the plans and specifications identified within the application documents or authorised by the conditions of this consent.

4 Structures

4.1 The structures must be in general accordance with the information submitted with the application, being:

a) The lake discharge structure

b) The intake structure and pipes located within the intake canal;

c) The dissipator in the Waitangi Stream

d) The rock rip rap located at the discharge of the pipeline in the Waitangi Stream;

e) The erosion protection material placed around Culvert 2;

f) The erosion protection structures immediately downstream of Culvert 2;

g) The works around and upstream of Culvert 3; and

h) The erosion protection material around Culvert 3.

4.2 Prior to works being undertaken on any of the above structures the consent holder must provide to the Bay of Plenty Regional Council a design for the works for certification that the works are in accordance with good engineering practice. No works shall be undertaken prior to the certification being provided.

4.3 Prior to the construction of the structures associated with Culvert 3, the consent holder must provide to the Bay of Plenty Regional Council a design report for the works, based on the information contained in the River Lake updated report dated 25 September 2018. The design report must incorporate the structures identified in BOPRC Approved Plan RM19-0347/3. Certification of the Plans must be obtained from the Bay of Plenty Regional Council prior to works commencing.

4.4 Prior to providing the design report referred to in condition 4.3, the consent holder must seek comments on the design from Eastern Region Fish and Game. Any comments received must be included in the deisgn report.

4.5 The consent holder shall must ensure that the structures are designed to avoid erosion of the bed or banks of the Waitangi Stream and Lake Ōkāreka and hazards to people using Waitangi Stream, Lake Ōkāreka or the discharge canal.

4.6 Any scour of the intake channel or the bed or banks of Lake Ōkāreka resulting from the operation of the intake structure, must be effectively stabilised and remediated to the satisfaction of the Bay of Plenty Regional Council.

4.7 No works shall be undertaken in the Waitangi Stream during the trout spawning period, being 1 May to 30 July, unless otherwise authorised by the Bay of Plenty Regional Council.

4.8 The consent holder must maintain, to the satisfaction of the Chief Executive of the Bay of Plenty Regional Council, or delegate, a mussel spat rope or similar system in Culvert 1 and Culvert 2 to provide fish passage for native fish. Should any maintenance works be undertaken to the culverts, the consent holder must provide confirmation from a suitably qualified and experienced freshwater ecologist that fish passage has been maintained.

5 Maintenance

5.1 The consent holder must ensure that the structures authorised by this consent are maintained in a sound working condition at all times, and must undertake any maintenance work, including maintenance of the bed or banks of the Waitangi Stream or Lake Ōkāreka, so directed by the Bay of Plenty Regional Council.

5.2 The consent holder must inspect the culverts and erosion protection structures authorised by this resource consent on an annual basis or as otherwise required in accordance with the Lake Management Plan.

5.3 In the first trout spawning season (1 May - 30 July inclusive) following the construction of the structures associated with Culvert 3 , the consent holder must undertake regular (at least fortnightly) inspections to monitor the presence of trout both upstream and downstream of Culvert 3 to confirm trout are able to access the spawning gravels below the falls. Should it be identified that trout passage is not adequate, the Consent Holder shall must engage a suitably qualified and experienced ecologist to prepare and implement a Remediation Plan to identify modifications to Culvert 3 required to achieve suitable passage. The Remediation Plan shall be certified by the Chief Executive of the Bay of Plenty Regional Council, or delegate, prior to any remedial actions being undertaken.

5.4 The Consent Holder must maintain records of, and provide to the Bay of Plenty Regional Council upon request:

a) Every inspection of the structures carried out; and

b) The date and description of any maintenance work carried out.

6 Review of Consent Conditions

6.1 In accordance with section 128(1) of the Resource Management Act 1991, the Bay of Plenty Regional Council may, on completion of any assessment of effects, environmental investigation or compliance report received by the Regional Council that shows there is an adverse effect on the environment as a result of the structures, serve notice on the consent holder under s128(1)(a)(i) and/or s128(1)(a)(iii) of the Resource Management Act 1991 of its intention to review the conditions of this consent. The intention of such a review is for the purpose of:

(a) Dealing 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; and/or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment

6.2 The fair and reasonable costs associated with any such review shall be recovered from the consent holder (see Advice Note 3).

7 Resource Management Charges

7.1 The consent holder must pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the Resource Management Act 1991.

8 Term of Consent

8.1 This resource consent shall expire on 30 October 2044.

9 The Resource Consent

9.1 The Consent hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw.

Advice Notes

1 The consent holder is advised that non-compliance with consent conditions may result in enforcement action against the consent holder and/or their contractor(s).

2 Notification required by these conditions shall be directed (in writing) to the Regulatory Compliance Manager, Bay of Plenty Regional Council, PO Box 364, Whakatāne, (or fax 0800 368 329 or email notify@envbop.govt.nz) including the consent number RM19-0347.

Bay of Plenty Regional Council

Resource Consent

Pursuant to the Resource Management Act 1991, the **Bay of Plenty Regional Council**, by a decision dated 17 December 2019, **hereby grants**:

A resource consent:

- **Under section 14(1) of the Resource Management Act 1991 and Rule WQ R22 (Rule 50), relating to the artificial control of water levels in Lake Ōkāreka as a discretionary activity**

subject to the following conditions:

1 Purpose

1.1 The purpose of this resource consent is to provide for the management of the level of Lake Okareka by taking water from Lake Ōkāreka at a controlled rate of flow, diverting the water through pipelines, and then discharging that water to the Waitangi Stream.

2 Location

2.1 Surface water must be only be taken from Lake Ōkāreka at the location with map reference NZMS 260 U16 0610 3050, as shown on BOPRC Approved Plan RM19-0347/2. The discharge outlets to the Waitangi Stream are located at or about map reference NZMS 260 U16 0640 3050, as shown on BOPRC Approved Plan RM19-0347/2.

3 Management of Lake Levels

3.1 The consent holder must operate the inlet, outlet and pipeline structures with the intent of achieving levels for Lake Okareka that are within the target range of 353.5 metres minimum lake level (Moturiki datum) and 353.9 metres maximum lake level (Moturiki datum).

Refer to advice note 4.

3.2 The consent holder must prepare a Lake Management Plan (LMP) addressing the overall lake level management of Lake Ōkāreka and the discharges from it. As a minimum, the LMP must include, but not be limited to:

a) Guidelines for managing the lake to within the target range required by condition 3.1 taking into account, the current and predicted (based on anticipated and forecast climatic conditions) lake level;

b) The methodology for controlling the rate of water discharged through the over ground and underground pipelines;

c) The methodology for monitoring lake levels (water quality within the intake canal);

d) A notification procedure and communication strategy for notifying relevant parties including as a minimum the Bay of Plenty Regional Council and the Rotorua District Council and Department of Conservation, of the lake level moving outside the target range required by condition 3.1 [or potential for the same] and the management response proposed to address this;

e) The methodology and schedule of reporting on compliance with the conditions of this resource consent. The reporting schedule must include the provision of an annual report providing an overview of lake levels experienced throughout the year, water quality monitoring values and a

commentary on factors (including climatic conditions) that have influenced the management of the lake level.

3.3 Within six months of the commencement of this resource consent, the consent holder must submit the LMP required by condition 3.2 to the Bay of Plenty Regional Council for certification that it is consistent with the methodology and assumptions outlined in the resource consent application and that it appropriately addresses the potential effects on the environment from the management of Lake Okareka levels. Should the consent holder seek any changes to the certified LMP in the future, a revised LMP must be submitted to the Bay of Plenty Regional Council for re-certification, prior to any amendments being implemented.

3.4 The consent holder must undertake all activities associated with the management of the level of Lake Ōkāreka, including any associated discharges, in accordance with the certified LMP.

4 Monitoring Recording and Reporting

4.1 The consent holder must ensure that the intake, pipelines, outlet, and associated lake level control structures are maintained in a sound working condition at all times during the term of this consent, and must undertake any maintenance work required to maintain that sound working condition as soon as practicable if so directed by the Bay of Plenty Regional Council.

4.2 The Consent Holder must maintain records of, and provide to the Bay of Plenty Regional Council upon request:

a) Every inspection of Lake Ōkāreka and Waitangi Stream infrastructure that is carried out; and

b) The date and description of any maintenance work carried out.

4.3 The consent holder must inform the Regional Council and provide appropriate details as soon as practicable if the following events occur:

- If the rate of flow in the Waitangi Stream falls below 100 litres per or
- If either pipeline has to be closed off for any specific reason; and
- When normal flow through the closed pipeline resumes.

5 Review of Consent Conditions

5.1 In accordance with section 128(1) of the Resource Management Act 1991, the Bay of Plenty Regional Council may, on completion of any assessment of effects, environmental investigation or compliance report received by the Regional Council that shows there is an adverse effect on the environment as a result of the management of the level of Lake Okareka, serve notice on the consent holder under s128(1)(a)(i) and/or s128(1)(a)(iii) of the Resource Management Act 1991 of its intention to review the conditions of this consent. The intention of such a review is for the purpose of:

(a) Dealing 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; and/or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment;

5.2 The fair and reasonable costs associated with any such review shall be recovered from the consent holder (see Advice Note 3).

5.3 In accordance with sections 128(1)(b) and 128(1)(ba) of the Resource Management Act 1991, the Bay of Plenty Regional Council may serve notice on the consent holder of its intention to review the conditions of this resource consent in order to:

- Enable any levels, flows, rates, or standards set in a relevant operative regional plan to be met; or

- Ensure compliance with any relevant national environmental standard or resource management regulation.

6 Resource Management Charges

6.1 The consent holder must pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the Resource Management Act 1991.

7 Term of Consent

7.1 This resource consent shall expire on 30 October 2044.

8 The Resource Consent

8.1 The Consent hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw.

Advice Notes

1 The consent holder is advised that non-compliance with consent conditions may result in enforcement action against the consent holder and/or their contractor(s).

2 Notification required by these conditions shall be directed (in writing) to the Regulatory Compliance Manager, Bay of Plenty Regional Council, PO Box 364, Whakatāne, (or fax 0800 368 329 or email notify@envbop.govt.nz) including the consent number RM19-0347.

3 Any review of consent conditions undertaken in accordance with conditions 5.1 and 5.2 and section 128 of the Resource Management Act 1991 may result in a reduction of the rate and/or quantity of water take authorised by this consent.

4 The "Target Range" is the intended operational range under normal weather and rainfall conditions. It is expected that exceptional rainfall events and durations could result in this range being exceeded from time to time.

Bay of Plenty Regional Council

Resource Consent

Pursuant to the Resource Management Act 1991, the **Bay of Plenty Regional Council**, by a decision dated 17 December 2019, **hereby grants**:

A resource consent:

- **Under section 15(1)(a) of the Resource Management Act 1991 and Rule DW R8 (Rule 37) of the Regional Natural Resources Plan and Rule 15.8.4(m) of the Tarawera River Catchment Plan, relating to the discharge of water from Lake Ōkāreka to the Waitangi Stream as a discretionary activity**

subject to the following conditions:

1 Purpose

1.1 To discharge water from Lake Ōkāreka to the Waitangi Stream.

2 Location

2.1 The discharge outlets are located at or about map reference NZMS 260 U16 0640 3050, as shown on BOPRC Approved Plan RM19-0347/2.

3 Rate of Discharge

3.1 The maximum rate of discharge must not exceed 500 litres per second, being the combined discharge from both the underground and overland pipelines.

3.2 The discharge must be managed to ensure that the minimum flow of water in the Waitangi Stream, as measured at Spencer Road is not less than 100 litres per second, unless a low water level in Lake Okareka precludes a discharge that is of a sufficient magnitude to maintain that minimum flow.

Advice Note: The discharge of water is limited by the volume of water in Lake Ōkāreka, which is subject to climatic conditions that are out of the control of the consent holder.

3.3 The consent holder must reduce the rate of discharge of water authorised by this resource consent upon the identification of erosion resulting from the discharge in the Waitangi Stream, or as requested by the Bay of Plenty Regional Council. The rate of discharge shall not be increased until authorised to do so by the Bay of Plenty Regional Council.

4 Discharge Quality

4.1 The consent holder must not intentionally alter the quality of water abstracted from Lake Ōkāreka that is subsequently discharged to the Waitangi Stream.

5 Monitoring and Reporting

5.1 The consent holder must monitor the bed and banks of the Waitangi Stream for signs of erosion and scour on an annual basis or as otherwise required in accordance with the requirements of the Lake Management Plan. Any scour or erosion of the bed and banks for the Waitangi Stream

resulting from the discharge must be effectively remediated and stabilised.

5.2 The Consent Holder must maintain records of, and provide to the Bay of Plenty Regional Council upon request:

a) Every erosion and scour inspection carried out; and

b) The date and description of any remediation work carried out.

6 Review of Consent Conditions

6.1 In accordance with section 128(1) of the Resource Management Act 1991, the Bay of Plenty Regional Council may, on completion of any assessment of effects, environmental investigation or compliance report received by the Regional Council that shows there is an adverse effect on the environment as a result of the discharge, serve notice on the consent holder under s128(1)(a)(i) and/or s128(1)(a)(iii) of the Resource Management Act 1991 of its intention to review the conditions of this consent. The intention of such a review is for the purpose of:

(a) Dealing 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; and/or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment

6.2 The fair and reasonable costs associated with any such review shall be recovered from the consent holder (see Advice Note 3).

6.3 In accordance with sections 128(1)(b) and 128(1)(ba) of the Resource Management Act 1991, the Bay of Plenty Regional Council may serve notice on the consent holder of its intention to review the conditions of this resource consent in order to:

- Enable any levels, flows, rates, or standards set in a relevant operative regional plan to be met; or
- Ensure compliance with any relevant national environmental standard or resource management regulation.

7 Resource Management Charges

7.1 The consent holder must pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the Resource Management Act 1991.

8 Term of Consent

8.1 This resource consent shall expire on 30 October 2044.

9 The Resource Consent

9.1 The Consent hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw.

Advice Notes

1 Unless otherwise specified all monitoring records and notification required under consent conditions shall be directed to the Regulatory Compliance Manager, PO Box 364, Whakatāne, 3158, or fax: 0800 884 882 or email compliance_data@boprc.govt.nz (compliance records) or notify@boprc.govt.nz (notifications). This notification shall include reference to the consent number RM19-0347.

2 The consent holder is advised that non-compliance with consent conditions may result in enforcement

action against the consent holder and/or their contractor(s).

3 Any review of consent conditions undertaken in accordance with conditions 6.1 and 6.3 and section 128 of the Resource Management Act 1991 may result in a reduction of the rate and/or quantity of water take authorised by this consent.

Bay of Plenty Regional Council

Resource Consent

Pursuant to the Resource Management Act 1991, the **Bay of Plenty Regional Council**, by a decision dated 17 December 2019, **hereby grants**:

A resource consent:

- **Under section 14(1)(a) of the Resource Management Act 1991 and Rule 43 of the Regional Natural Resources Plan, Rule WQ R11 of Plan Change 9 of the Regional Natural Resources Plan and Rule 14.4.5(g) of the Tarawera River Catchment Plan, to undertake a discretionary activity being the take and use of surface water**

subject to the following conditions:

1 Purpose

1.1 The purpose of this resource consent is to authorise and specify conditions for the take and use of surface water from Lake Ōkāreka (for discharge to the Waitangi Stream) of up to 500 litres per second, associated with the management of the lake level in accordance with consent RM19-0347-BC.03.

2 Location

2.1 Surface water must be only be taken from Lake Ōkāreka at or about map reference NZMS 260 U16 0610 3050, as shown on BOPRC Approved Plan RM18-0794/2.

3 Rate of Surface Water Take

3.1 The maximum rate of water abstraction from Lake Ōkāreka must not exceed 500 litres per second.

3.2 The abstraction of water under this resource consent must be in accordance with the certified Lake Management Plan authorised by condition 3.4 of resource consent RM19-0347-BC.03.

3.3 Surface water must only be abstracted for the purpose of maintaining the level of Lake Ōkāreka to within the range authorised by resource consent RM19-0347-BC.03.

4 Water Take Monitoring

4.1 The consent holder must maintain the stream flow gauge at Spencer Road and maintain a continuous record of the Waitangi Stream flows at this point.

4.2 The consent holder must ensure the following is recorded with regard to the overland pipeline:

- Hours pumped;
- Abstraction rate (litres per second);
- Quantity of water taken from Lake Ōkāreka (cubic metres per day); and
- If no water is taken, the volume must show zero (0) cubic metres.

4.3 The records required under condition 4.2 must be available for inspection upon request by Bay of

Plenty Regional Council staff.

4.4 Water records required by condition 4.2 must be in a suitable format for electronic storage by the Bay of Plenty Regional Council.

5 Review of Consent Conditions

5.1 In accordance with section 128(1) of the Resource Management Act 1991, the Bay of Plenty Regional Council may, on completion of any assessment of effects, environmental investigation or compliance report received by the Regional Council that shows there is an adverse effect on the environment as a result of the water take, serve notice on the consent holder under s128(1)(a)(i) and/or s128(1)(a)(iii) of the Resource Management Act 1991 of its intention to review the conditions of this consent. The intention of such a review is for the purpose of:

(a) Dealing 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; and/or

(b) Requiring the adoption of the best practicable option to remove or reduce any adverse effect on the environment

5.2 The fair and reasonable costs associated with any such review shall be recovered from the consent holder (see Advice Note 3).

5.3 In accordance with sections 128(1)(b) and 128(1)(ba) of the Resource Management Act 1991, the Bay of Plenty Regional Council may serve notice on the consent holder of its intention to review the conditions of this resource consent in order to:

- Enable any levels, flows, rates, or standards set in a relevant operative regional plan to be met; or
- Ensure compliance with any relevant national environmental standard or resource management regulation.

6 Resource Management Charges

6.1 The consent holder must pay the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the Resource Management Act 1991.

7 Term of Consent

7.1 This resource consent shall expire on 30 October 2044.

8 The Resoruce Consent

8.1 The Consent hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw.

Advice Notes

1 Unless otherwise specified all monitoring records and notification required under consent conditions shall be directed to the Regulatory Compliance Manager, PO Box 364, Whakatāne, 3158, or fax: 0800 884 882 or email compliance_data@boprc.govt.nz (compliance records) or notify@boprc.govt.nz (notifications). This notification shall include reference to the consent number RM19-0347.

2 The consent holder is advised that non-compliance with consent conditions may result in enforcement action against the consent holder and/or their contractor(s).

3 Any review of consent conditions undertaken in accordance with condition 12.1 or 12.2 and section 128 of the Resource Management Act 1991 may result in a reduction of the rate and/or quantity of water take

authorised by this consent.

4 Resource Management (Measuring and Reporting of Water Takes) Regulations 2010 came into force on 10 November 2010. Compliance with the regulations is required for the abstraction of water authorised by this resource consent. Details of the requirements of the Regulations can be found at www.boprc.govt.nz/environment/resource-consents/water-metering or www.boprc.govt.nz and search for 'water metering'.