

Foveran and Winterberg Suggested Conditions of Resource Consent(s)

Updated version of proposed conditions of consent dated 21 August 2008:
Foveran and Winterbrug Summary AEE for Resource Consent Applications
dated 11 June 2008 (pages 37 to 49).

1.1 Water Takes

The suggested conditions of resource consent for the proposed takes for Foveran and Winterberg have been derived consistent with this assessment and considering any potential environmental impact that may be attributable to the planned activities.

Water Permit - Foveran (CRC031592)

1. Water shall only be taken from Well I40/0004 (6 metres deep, 1,000 mm diameter) located at or about map reference NZMS 260 I40:168-109.
2. The water may only be taken at a rate not exceeding 26 litres per second, with a volume not exceeding 2,246 cubic metres per day, and 354,250 cubic metres between 1st July and the following 30th June.
3. Water shall only be used for spray irrigation of crops and pasture for grazing stock, excluding milking dairy cows, as described in the application, on the 65 ha area of land shown in attached plan CRCxxxxx.
4. The maximum combined volume of water from any take in conjunction with the exercise of this consent for irrigation onto any land shown in the attached plan for CRCxxxxx, shall not exceed 1,500 cubic metres/ha/30-consecutive days.
5. For the period of September to March inclusive, except as provided for in condition 7, the taking of water in terms of this permit shall cease whenever the flow in the Hakataramea River at the SH82 recorder site (map reference I40:112-062), as estimated by the Canterbury Regional Council, falls below 500 litres per second.
6. For the period of April to August inclusive, except as provided for in condition 7, the taking of water in terms of this permit shall cease whenever the flow in the Hakataramea River at the SH82 recorder site (map reference I40:112-062), as estimated by the Canterbury Regional Council, falls below 750 litres per second.
7. Notwithstanding conditions 5 and 6, if flows in the Hakataramea River at MHBr fall below 1500l/s, maximum abstraction by the consent holder of this consent may continue provided that:
 - i. The consent holder of the Winterberg Dam (permit CRC084057) is discharging water into Homestead Creek and thence into the Hakataramea River specifically for the consent holder of the pump site located at or about map reference NZMS 260 I40:168-109 at a rate equal to or greater than the rate of abstraction specified in the consent; and

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- ii. The consent holder has provided the Canterbury Regional Council with a written undertaking that the water taken under the entitlement is to be used exclusively for irrigation of the land covered by this permit; and
- iii. The consent holder provides the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Section, with a schedule of the proposed abstraction of water supplied by the consent holder of the Winterberg Dam at least five days prior to exercising this condition.

8. PROVIDED THAT whenever the Canterbury Regional Council, in consultation with the Water Users Committee representing all water users who are subject to primary allocation minimum flows, have determined a water sharing regime which restricts abstraction from the Hakataramea River in accordance with the minimum flows as specified in conditions of this resource consent, then the taking of water in accordance with that determination shall be deemed to be compliance with those conditions.

9. The consent holder shall, before the first exercise of this consent, install an easily accessible straight pipe(s), with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system.

10. The consent holder shall before the first exercise of this consent:

- a) Install a water meter(s) that has an international accreditation or equivalent New Zealand calibration endorsement and has pulse output, suitable for use with an electronic recording device, which will measure the rate and volume of water taken within an accuracy of plus or minus five percent, as part of the pump outlet plumbing, or within the mainline distribution system, at a location(s) that will ensure the total take of water is measured.
- b) Take a reading from the water meter at least once per month; record the date and the meter reading either electronically or in a log book kept for that purpose; and supply these data to Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, each year during the month of June, or when requested in writing.
- c) Ensure that the water meter is accessible to the Canterbury Regional Council at all times for inspection.
- d) Ensure that the water meter is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
- e) Take all practicable measures to ensure that the water meter is fully functional at all times.

11. The Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, shall be informed immediately on first exercise of this consent by the consent holder.

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12. The consent holder, prior to first exercise of this consent shall:

- a) Install a tamper-proof electronic recording device(s) such as a data logger(s) that shall time stamp a pulse from the flow metre(s) at least once every 60 minutes; and have the capacity to hold at least one season's data of water taken as specified in clauses (b) (i) and (b) (ii), or which is telemetered, as specified in clause (b) (iii).
- b) The recording device(s) shall:
 - i. Be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
 - ii. Store the entire season's data in each 12 month period from 1st July to 30th June in the following year, which the consent holder shall then download and store in a commonly used format and provide to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council; or
 - iii. Shall be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder. No data in the recording device(s) shall be deliberately changed or deleted.
- c) The recording device(s) shall be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
- d) The recording device(s) 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 recording device(s) is fully functional at all times.

13. Within one month of the installation of the measuring or recording device(s), or any subsequent replacement measuring or recording device(s), and at five yearly intervals thereafter, and at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:

- a) The measuring and recording device(s) has been installed in accordance with the manufacturers specifications; and
- b) Data from the recording device(s) can be readily accessed and/or retrieved in accordance with conditions of this resource consent.

14.

- a) If the irrigation system used to distribute water taken in terms of this permit is used to distribute effluent, fertiliser or any other added contaminant, a backflow preventer manufactured in accordance with AS 2845.1 (1998) or the

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American Society of Sanitary Engineers standards shall be installed within the pump outlet plumbing or within the mainline, to prevent the backflow of water into the bore(s).

- b) The backflow preventer shall be tested to the standard set out in AS 2845.3 (1993) or an equivalent method within one month of its installation and annually thereafter by a suitable qualified person. A test report shall be provided to Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager within two weeks of each inspection.

15. The consent holder shall take all practicable steps to:

- a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and
- b) Avoid leakage from pipes and structures; and
- c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.

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16. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice on its intention to review the conditions of this consent for the purposes of dealing 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.

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17. The duration of this resource consent shall be for a period of 35 years and the lapsing date for the purposes of Section 125 shall be 31 December 2011.

Water Permit - Winterberg (CRC032220)

1. Water shall only be taken as resulting from storage sourced from Homestead Stream, and contained within the confines of the Winterberg Dam, located at or about map reference I40:~~221-138~~.
2. The water may only be taken at a rate not exceeding 320 litres per second, with a volume not exceeding 27,648 cubic metres per day, and 3,657,000 cubic metres between 1st July and the following 30th June.
3. Water shall only be used for spray irrigation of crops and pasture for grazing stock, excluding milking dairy cows, as described in the application, on the 690 ha area of land shown in attached plan CRCxxxxx.
4. The maximum combined volume of water from any take in conjunction with the exercise of this consent for irrigation onto any land shown in the attached plan for CRCxxxxx, shall not exceed 1,500 cubic metres/ha/30-consecutive days.
5. A suitable fish screen shall be operated and maintained on the pump suction intake, ~~and the intake velocity be restricted, to ensure that fish are prevented from passing~~ into the intake at all times.

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6. The consent holder shall, before the first exercise of this consent, install an easily accessible straight pipe(s), with no fittings or obstructions that may create turbulent flow conditions, of a length at least 15 times the diameter of the pipe, as part of the pump outlet plumbing or within the mainline distribution system.
7. The consent holder shall before the first exercise of this consent:
 - a) Install a water meter(s) that has an international accreditation or equivalent New Zealand calibration endorsement and has pulse output, suitable for use with an electronic recording device, which will measure the rate and volume of water taken within an accuracy of plus or minus five percent, as part of the pump outlet plumbing, or within the mainline distribution system, at a location(s) that will ensure the total take of water is measured.
 - b) Take a reading from the water meter at least once per month; record the date and the meter reading either electronically or in a log book kept for that purpose; and supply these data to Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, each year during the month of June, or when requested in writing.
 - c) Ensure that the water meter is accessible to the Canterbury Regional Council at all times for inspection.
 - d) Ensure that the water meter is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
 - e) Take all practicable measures to ensure that the water meter is fully functional at all times.
8. The Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, shall be informed immediately on first exercise of this consent by the consent holder.
9. The consent holder, prior to first exercise of this consent shall:
 - a) Install a tamper-proof electronic recording device(s) such as a data logger(s) that shall time stamp a pulse from the flow metre(s) at least once every 60 minutes; and have the capacity to hold at least one season's data of water taken as specified in clauses (b) (i) and (b) (ii), or which is telemetered, as specified in clause (b) (iii).
 - b) The recording device(s) shall:
 - i. Be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
 - ii. Store the entire season's data in each 12 month period from 1st July to 30th June in the following year, which the consent holder shall then download and store in a commonly used format and provide to the Canterbury Regional Council upon request in a form and to

- a standard specified in writing by the Canterbury Regional Council; or
- iii. Shall be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder. No data in the recording device(s) shall be deliberately changed or deleted.
 - c) The recording device(s) shall be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
 - d) The recording device(s) 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 recording device(s) is fully functional at all times.
10. Within one month of the installation of the measuring or recording device(s), or any subsequent replacement measuring or recording device(s), and at five yearly intervals thereafter, and at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
- a) The measuring and recording device(s) has been installed in accordance with the manufacturers specifications; and
 - b) Data from the recording device(s) can be readily accessed and/or retrieved in accordance with conditions of this resource consent.
- 11.
- a) If the irrigation system used to distribute water taken in terms of this permit is used to distribute effluent, fertiliser or any other added contaminant, a backflow preventer manufactured in accordance with AS 2845.1 (1998) or the American Society of Sanitary Engineers standards shall be installed within the pump outlet plumbing or within the mainline, to prevent the backflow of water into the pump delivery.
 - b) The backflow preventer shall be tested to the standard set out in AS 2845.3 (1993) or an equivalent method within one month of its installation and annually thereafter by a suitable qualified person. A test report shall be provided to Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager within two weeks of each inspection.
12. The consent holder shall take all practicable steps to:
- a) Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity; and
 - b) Avoid leakage from pipes and structures; and

- c) Avoid the use of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.
13. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice on its intention to review the conditions of this consent for the purposes of dealing 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.
14. The duration of this resource consent shall be for a period of 35 years and the lapsing date for the purposes of Section 125 shall be 31 December 2014.

1.2 Damming and Discharge

The suggested conditions of resource consent for the proposed construction, damming and discharge from the Winterberg Dam have been derived consistent with this assessment and considers any potential environmental impact that may be attributable to the planned activities.

Land Use - Winterberg (CRC032221)

To excavate and disturb the bed of Homestead Stream:

Scope and location

- 1 The works to construct a zoned earth fill dam on Homestead Stream a tributary of the Hakataramea River shall be limited to the following:
- (a) The volume of water impounded by the dam at full supply level shall not exceed 5.5 million cubic metres.
 - (b) The maximum height of the embankment crest above natural riverbed level shall not exceed 28 metres.
 - (c) The crest width shall not be less than 6 metres.
 - (d) The service freeboard (the vertical distance between the water at full supply level and the crest of the dam) shall not be less than 1.5 metres.
 - (e) The embankment structure shall be protected from erosion due to rainfall, wave action, and animals.
 - (f) The dam shall be equipped with a side-channel spillways capable of safely passing at least a flood with a peak flow of 170 cumec.
 - (g) The dam shall be equipped with a sluice facility capable of passing at lease a 20 cumec flow or such other arrangement that enables the combined discharge from the dam to be 190 cumec.
 - (h) That provision be made in the design of the dam to enable a peak flow of 20 cumec referred to in Condition 1 [g] to be safely discharged through or around the dam during construction of the dam.
 - (i) The spillway referred to in Condition 1 [f] and the sluice referred to in 1 [g] and 1 [h] above shall discharge water into the downstream waterway in a way that does not cause erosion or instability to the waterway or to the embankment structure.
- 2 The storage dam shall be located in Homestead Stream at or about NZMS I40: 221 - 138 a tributary of the Hakataramea River River as shown on plan CRC 032221.

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Design

- 3 A building consent shall be obtained from the appropriate authority prior to the start of construction.
- 4 A copy of the building consent shall be lodged with the Canterbury Regional Council, Attention RMA Compliance and Enforcement Manager, 10 working days prior to the start of construction.
- 5 A Chartered Professional Engineer shall take responsibility for the design of the Dam. The Chartered Professional Engineer shall prepare a design report. This design report shall include, but not be limited to the following:
 - (a) Details of the location and layout of the dam.
 - (b) Details of the geometry of the earth embankment and related hydraulic structures.
 - (c) Details of the operation of the dam.
 - (d) Confirmation, signed by the Chartered Professional Engineer, that the dam has been designed according to accepted engineering standards, guidelines and practices for a structure of this nature.
 - (e) A schedule of tests and inspections to be undertaken under the supervision of the Chartered Professional Engineer during the construction process. Work may not proceed until these tests and inspections have been carried out and written authorisation provided by the Chartered Professional Engineer.
 - (f) A schedule of safety inspections that shall be undertaken by the consent holder during the operational life of the dam.
 - (g) A schedule of safety inspections that shall be undertaken under the supervision of a Chartered Professional Engineer during the operational life of the dam.
 - (h) Details of circumstances that would require the consent holder to arrange for a special or emergency safety inspection of the dam by a Chartered Professional Engineer.
 - (i) Details of routine maintenance work that shall be undertaken by the consent holder during the operational life of the dam.

A copy of the design report shall be forwarded to Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, no less than 10 working days prior to commencement of construction.

Construction

- 6 The Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, shall be notified at least 48 hours prior to commencement of construction or maintenance works.
- 7 Prior to commencing construction a copy of this resource consent shall be given to the person responsible for supervising the construction.
- 8 All practicable measures shall be taken to minimise soil disturbance and erosion, including planting, regrassing or alternative stabilisation of all exposed disturbed areas, as soon as practicable following completion of the works.
- 9 All practicable measures shall be undertaken to prevent the discharge of sediment to the downstream environment during the construction of the dam.
- 10 Works shall not cause erosion of the banks or bed of Homestead Stream waterway.

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- 11 No cut vegetation, debris, or other excavated material shall be placed in any surface water body, or in a position such that it may enter any surface water body.
- 12 All spoil and other waste material from the works may be disposed of in the vicinity of the dam site provided that the disposal areas are contoured and then rehabilitated in grass cover on the completion of the works and are positioned and surface runoff from the site managed in such a manner that sediment cannot wash into Homestead Stream from the disposal area.
- 13 All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery operating in or within 50m of the waterway.
- 14 There shall be no storage of fuel or lubricants or refuelling or lubricating of vehicles or machinery within 50m of the unnamed waterway.
- 15
- (a) The consent holder shall take all practicable steps to avoid cementitious material entering the Homestead Stream stream including waste wash water from tools and machinery.
- (b) Cement shall be stored securely or removed from site overnight.
- 16 All practical measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation and ecological values. All machinery shall be water blasted prior to being brought on site and following completion of the works, to reduce the potential for pest species being introduced to or taken from watercourses. Machinery and equipment that has worked in watercourses shall, prior to entering and leaving site, also be cleaned with suitable chemicals or agents to kill didymo. At no time during the exercise of this consent shall machinery be washed within the bed of a watercourse.
- Advice note: The Consent holder shall also comply with all notices and guidelines issued by Biosecurity New Zealand, in relation to avoiding spreading the pest organism *Didymosphenia geminata* known as 'Didymo' (refer to www.biosecurity.govt.nz/didymo).
- 17 In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- (a) Advise the Canterbury Regional Council of the disturbance;
- (b) Advise the Upoko Runanga of Taumutu, or their representative, of the disturbance.
- (c) Cease earthmoving operations in the affected area until the area containing the Koiwi Tangata or taonga has been clearly demarcated, and Kaumatua and archaeologists have certified that it is appropriate for earthmoving to recommence.
- Note: This condition is in addition to any agreements that are in place between the consent holder and the Upoko Runanga (Cultural Site Accidental Discovery Protocol).
- 18 A construction report shall be prepared by the contractor and forwarded to the Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, within three weeks of completion of construction. This construction report shall include, but not be limited to:

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- (a) Certification that the dam has been constructed in accordance with the design drawings and specifications, or
- (b) Certification that any variations that were made during the construction process were approved by a Chartered Professional Engineer and do not breach the scope of this consent as defined in conditions [1] and [2].

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19 Upon completion of the dam, and at least 48 hours prior to first filling:

- (a) A Chartered Professional Engineer, shall certify the dam as safe and ready for operation.
- (b) A copy of the certification document shall be forwarded to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager.

20

- (a) The consent holder shall ensure that a Chartered Professional Engineer inspects the dam within five days of first filling.
- (b) The Chartered Professional Engineer shall record any faults or findings that could potentially lead to dam failure, and recommend the appropriate remedial works. A report of these findings and recommended remedial actions shall be prepared, a copy of which shall be provided to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, upon completion.
- (c) The consent holder shall immediately undertake any remedial works or corrective actions recommended by the engineer and notify the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager once completed.

Operation

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- (a) The consent holder shall undertake routine safety inspections of the dam in accordance with the requirements detailed in the design report.
- (b) The consent holder shall undertake routine maintenance works in accordance with the requirements detailed in the design report.
- (c) The findings of any inspections and the details of any maintenance works undertaken by the consent holder shall be recorded in a logbook kept for that purpose. A copy of the logbook shall be forwarded to Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, upon request.

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22 The consent holder shall ensure that safety inspections of the dam are undertaken by, or under the supervision of, a Chartered Professional Engineer at the intervals detailed in the design report A copy of the inspection report shall be forwarded to the Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, within 40 working days of the inspection.

23

- (a) The consent holder shall immediately notify the Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, when the need for a special or emergency inspection is identified.
- (b) The consent holder shall ensure that special or emergency safety inspections of the dam are undertaken by, or under the supervision of, a Chartered Professional Engineer as soon as practicable after the occurrence of any of the events or circumstances described in the design report. A copy of the inspection report shall be forwarded to the Canterbury Regional Council,

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attention RMA Compliance and Enforcement Manager, within 40 working days of the inspection,

24 With reference to conditions [22] and [23] of this consent, the consent holder shall undertake any remedial works or corrective actions recommended by the Chartered Professional Engineer as soon as practicable.

25 The Department of Conservation shall be notified at least two days prior to any maintenance work being undertaken that may affect the species referred to in condition [7] above.

Administration

26 The Canterbury Regional Council may, once per year, on any of the last 5 working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing 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.

27 The duration of this resource consent shall be for a period of 6 years and the lapsing date for the purposes of Section 125 shall be 31 December 2010.

Dam - Winterberg (CRC032222)

To dam and divert water:

1. Water shall only be dammed in the storage dam constructed and operated in terms of consent CRC032221, and located in Homestead Stream a tributary of the Hakataramea River at or about map reference NZMS 260 I40: 221 - 138, as shown on Plan CRC032221 attached to this consent.

2. Water may be diverted around the works during the construction of the storage dam at or about NZMS 260 I40: 221 - 138.

3. The diversion works shall be designed to safely pass a flood of up to 20 cumec.

4. Water may be diverted without limit from the storage dam basin to the downstream channel via the dam spillway and sluices with a combined flow not exceeding 190 cumec.

5. The diversion of water shall not cause erosion or instability of the toe of the dam embankment or the bed or banks of the channel.

6. A suitably constructed spillway shall be capable of passing an attenuated PMF flood event of up to 300 cubic metres per second, and be roughened to enable eels (and other climbing fish that may access the dam, to move upstream over the dam.

7. The duration of this resource consent shall be for a period of 35 years and the lapsing date for the purposes of Section 125 shall be 31 December 2014.

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<#>Any works shall, as far as practicable, be undertaken when flows in the watercourse are sufficiently low enough to minimise the flow of sediment laden waters into any watercourse.¶

<#>All machinery shall be water blasted prior to being brought on site and following completion of the works, to reduce the potential for pest species being introduced to or taken from watercourses.

Machinery and equipment that has worked in watercourses shall, prior to entering and leaving site, also be cleaned with suitable chemicals or agents to kill didymo. At no time during the exercise of this consent shall machinery be washed within the bed of a watercourse.¶

Advice note: The Consent holder shall also comply with all notices and guidelines issued by Biosecurity New Zealand, in relation to avoiding spreading the pest organism *Didymosphenia geminata* known as 'Didymo' (refer to www.biosecurity.govt.nz/didymo).¶

<#>The consent holder s[... [1]

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Deleted: <#>The dam shall be located at or about map reference NZMS 260 I40:224-134 in Homestead Stream.¶

<#>The total volume of water stored behind the dam shall not exceed 5,500,000 cubic metres.¶

<#>The operational free[... [2]

Discharge - Winterberg (CRC084057)

To discharge water from the Winterberg Dam into Homestead Stream and the Hakataramea River:

1. The discharge shall be located at or about map reference NZMS 260 I40: ~~221-138 in~~ Homestead Stream. Deleted: 224-134
2. The maximum rate of discharge from the dam via a discharge valve during low flow periods in the Hakataramea River shall not exceed 180 L/s. The discharge shall not give rise to all or any of the following effects:
 - The production of any conspicuous oil or grease films, scum or foams, or floatable or suspended materials
 - Any conspicuous change in colour or visual clarity
 - Any emission of objectionable odour
 - Any significant adverse effect on aquatic life.
3. The maximum rate of discharge from the dam during Hakataramea River high flows, for the purposes of sluicing via a discharge valve, shall be up to 20 cubic metres per second. Dam sluicing shall not occur when the flow in the Hakataramea River as measured at the Main Road Bridge is less than 92 cubic metres per second (0.5 X annual mean flood). The discharge ramping rate shall not exceed 1 cubic metre per second per minute.
4. Maximum rates of discharge from the dam spillway during flood events in Homestead Stream shall be up to 300 cubic metres per second (nominally 85 cubic metres per second).
5. The consent holder shall before the first exercise of this consent:
 - a) Install measurement devices that have an international accreditation or equivalent New Zealand calibration endorsement and has pulse output, suitable for use with an electronic recording device, which will measure the rate and volume of water discharged within an accuracy of plus or minus five percent, as part of the dam discharge outlet facilities, that will ensure the total discharge of water is measured.
 - b) Ensure that the measurement devices are accessible to the Canterbury Regional Council at all times for inspection.
 - c) Ensure that the measurement devices are installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions.
 - d) Take all practicable measures to ensure that measurement devices are fully functional at all times.

6. The Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, shall be informed immediately on first exercise of this consent by the consent holder.
7. The consent holder, prior to first exercise of this consent shall:
 - a) Install a tamper-proof electronic recording device(s) such as a data logger(s) that shall time stamp a pulse from the measurement devices at least once every 60 minutes; and have the capacity to hold at least one season's data of water taken as specified in clauses (b) (i) and (b) (ii), or which is telemetered, as specified in clause (b) (iii).
 - b) The recording device(s) shall:
 - i. Be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and
 - ii. Store the entire season's data in each 12 month period from 1st July to 30th June in the following year, which the consent holder shall then download and store in a commonly used format and provide to the Canterbury Regional Council upon request in a form and to a standard specified in writing by the Canterbury Regional Council; or
 - iii. Shall be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder. No data in the recording device(s) shall be deliberately changed or deleted.
 - c) The recording device(s) shall be accessible to the Canterbury Regional Council at all times for inspection and/or data retrieval.
 - d) The recording device(s) 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 recording device(s) is fully functional at all times.
8. Within one month of the installation of the measuring or recording device(s), or any subsequent replacement measuring or recording device(s), and at five yearly intervals thereafter, and at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means of a clear diagram, that:
 - a) The measuring and recording device(s) has been installed in accordance with the manufacturers specifications; and
 - b) Data from the recording device(s) can be readily accessed and/or retrieved in accordance with conditions of this resource consent.

9. The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice on its intention to review the conditions of this consent for the purposes of dealing 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.
10. The duration of this resource consent shall be for a period of 35 years and the lapsing date for the purposes of Section 125 shall be 31 December 2014.

The excavation and disturbance of the Homestead Stream bed shall be sized, constructed and located as described in the application for consent on attached plan CRCxxxxx. If there are any inconsistencies between the application and this consent, the conditions of this consent shall prevail.

Any works shall, as far as practicable, be undertaken when flows in the watercourse are sufficiently low enough to minimise the flow of sediment laden waters into any watercourse.

All machinery shall be water blasted prior to being brought on site and following completion of the works, to reduce the potential for pest species being introduced to or taken from watercourses. Machinery and equipment that has worked in watercourses shall, prior to entering and leaving site, also be cleaned with suitable chemicals or agents to kill didymo. At no time during the exercise of this consent shall machinery be washed within the bed of a watercourse.

Advice note: The Consent holder shall also comply with all notices and guidelines issued by Biosecurity New Zealand, in relation to avoiding spreading the pest organism *Didymosphenia geminata* known as 'Didymo' (refer to www.biosecurity.govt.nz/didymo).

The consent holder shall ensure that any bed disturbance is limited to the extent necessary to carry out the works.

During the exercise of this consent, the consent holder shall ensure that no contaminants, including fuel, oil, or cement products enter any watercourse or groundwater. In the event of contamination, the consent holder shall undertake remedial action and shall notify the Consent Authority as soon as practical.

All reasonable steps shall be taken to minimise the release of sediment to flowing water.

If the consent holder:

Discovers koiwi tangata (human skeletal remains), or Maori artefact material, the consent holder shall without delay:

Notify the consent Authority, tangata whenua and New Zealand historic Places Trust and in the case of skeletal remains, the New Zealand Police; and

Stop work within the immediate vicinity of the discovery to allow a site inspection by the New Zealand Historic Places Trust and the appropriate runanga and their advisors, who shall determine whether the discovery is likely to be extensive, if a through site investigation is required, and whether an Archaeological Authority is required

Any koiwi tangata discovered shall be handled and removed by tribal elders responsible for the tikanga (custom) appropriate to its removal or preservation.

Site work shall recommence following consultation with the Consent Authority, the New Zealand Historic Places trust, Tangata whenua, and in the case of skeletal remains, the New Zealand Police, provided that any relevant statutory permissions have been obtained.

Discovers any feature or archaeological material that predates 1900, or heritage material, or disturbs a previously unidentified archaeological or heritage site, the consent holder shall without delay:

Stop work within the immediate vicinity of the discovery or disturbance; and

Advise the consent Authority, the New Zealand Historic Places Trust, and in the case of Maori features or materials, the tangata whenua, and if required, shall make an application for an Archaeological Authority pursuant to the Historic Places Act 1993; and

Arrange for a suitably qualified archaeologist to undertake a survey of the site.

Site work shall recommence following consultation with the Consent Authority.

The consent authority may within three months of each anniversary of first exercise of this consent in accordance with Section 129 of the Resource Management Act 1991 serve notice on the consent holder of its intention to review the conditions of this consent for the purposes of determining if 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 is appropriate to deal with at a later stage; or

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

The duration of this resource consent shall be for a period of 6 years and the lapsing date for the purposes of Section 125 shall be 31 December 2010.

The dam shall be located at or about map reference NZMS 260 I40:224-134 in Homestead Stream.

The total volume of water stored behind the dam shall not exceed 5,500,000 cubic metres.

The operational freeboard shall be maintained at greater than 1 m at all times.

The maximum crest height shall be not exceed 28 m above the downstream stream-bed level

A suitably constructed spillway shall be capable of passing an attenuated PMF flood event of up to 300 cubic metres per second.

The dam structure shall be suitably designed to withstand the Maximum Design Earthquake (MDE) and the Operating Base Earthquake (OBE).

The consent holder shall take all practicable steps to ensure that the spillway is kept clear of debris or foreign objects.

A chartered professional engineer shall take responsibility for the design of the dam structure. The chartered professional engineer shall prepare a design report, which shall include but not necessarily be limited to the following:

Details of the location and layout of the dam

Details of the geometry of the dam and the related hydraulic structures

Detail of the engineering design of the dam

Detail of the operation of the dam

Confirmation, signed by an appropriate chartered professional engineer, that the dam has been designed according to appropriate engineering standards and practices for a structure of this nature

A schedule of inspections to be undertaken under the supervision of the chartered professional engineer during the construction process. Work may not proceed until these inspections have been carried out and written authorisation has been provided by the chartered professional engineer

A schedule of routine inspections that shall be carried out by the consent holder during the operational life of the dam structure. Routine inspections shall be carried out at least annually

A schedule of comprehensive inspections that shall be carried out by a chartered professional engineer during the operational life of the dam structure

Details of routine maintenance work that shall be undertaken by the consent holder during the operational life of the dam structure

An emergency action plan detailing the process to be undertaken during a possible dam failure event.

A copy of the design report shall be forwarded to the Canterbury regional Council, attention RMA Compliance and Enforcement Manager, no less than 10 working days prior to commencement of construction.

A construction report shall be prepared by a chartered professional engineer and forwarded to the Canterbury Regional Council, attention RMA Compliance and Enforcement manager, within 15 working days of first filling.

Upon completion of the dam, and before first filling, the chartered professional engineer shall certify that the dam is safe and ready for operation. A copy of the certification

documents shall be forwarded to the Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, prior to commissioning.

The Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, shall be notified at least 48 hours prior to first filling.

The consent holder shall ensure that the chartered professional engineer is present during first filling. The consent holder shall remedy any faults recorded by the chartered professional engineer during first filling.

The consent holder shall regularly inspect the dam structure in accordance with the schedule detailed in the design report and the consent holder shall undertake maintenance works in accordance with the requirements detailed in the design report. The findings of any inspections and the details of any maintenance works undertaken shall be recorded in a logbook kept for that purpose. A copy of the logbook shall be forwarded to the Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, upon request.

In the event of:

Any evidence of erosion, seepage, cracking, settlement, slipping or other embankment deformation, or

An earthquake of Modified Mercalli Scale 6 or greater,

The consent holder shall as soon as practicable:

Report the event to the Canterbury regional Council, attention RMA Compliance and Enforcement Manager, and

Consult a chartered professional engineer who shall be requested to take responsibility for – the inspection of the dam structure, the identification of any remedial action required, and the recording of the event in a report, of which a copy shall be forwarded to the Canterbury Regional Council, attention RMA Compliance and Enforcement manager within 21 days of the inspection.

The consent holder shall undertake any remedial works or corrective action recommended by the chartered professional engineer as soon as practicable.

The consent holder shall ensure that the dam structure is inspected comprehensively by, or under the supervision of, a chartered professional at the interval detailed in conditions of this resource consent. A copy of the inspection report shall be forwarded to the Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, within 20 working days of the inspection.

The Canterbury Regional Council, attention RMA Compliance and Enforcement Manager shall be notified immediately should inspection of the dam structure by a chartered professional engineer be required in terms of any condition of this resource consent.

The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice on its intention to review the conditions of

this consent for the purposes of dealing 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.

The duration of this resource consent shall be for a period of 35 years and the lapsing date for the purposes of Section 125 shall be 31 December 2014.

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