

8 April 2016



Waimakariri Irrigation Limited  
Attn To: Brent Walton  
PO Box 556  
**Rangiora 7440**

**Customer Services**  
**P. 03 353 9007 or 0800 324 636**

PO Box 345  
Christchurch 8140

P. 03 365 3828  
F. 03 365 3194  
E. [ecinfo@ecan.govt.nz](mailto:ecinfo@ecan.govt.nz)

[www.ecan.govt.nz](http://www.ecan.govt.nz)

Dear Sir/Madam

## **NOTICE OF RESOURCE CONSENT DECISION(S)**

**RECORD NO: CRC166677**

**NAME: Waimakariri Irrigation Limited**

The decision of Environment Canterbury is to grant your application(s) on the terms and conditions specified in the attached resource consent document(s). Your resource consent(s) commences from the date of this letter advising you of the decision. The reasons for the decision are:

1. The activity is consistent with the purpose of the RMA

For some activities a report is prepared, with officer recommendations, to provide information to the decision makers. If you require a copy of the report please contact our Customer Services section.

If you do not agree with the consent authority decision, you may object to the whole or any part. Notice of any objection must be in writing and lodged with Environment Canterbury within 15 working days of receipt of this decision.

Alternatively you may appeal to the Environment Court, PO Box 2069, Christchurch. The notice of appeal must be lodged with the Court within 15 working days of receipt of this decision, with a copy forwarded to Environment Canterbury within the same timeframe. If you appeal this decision, the commencement date will then be the date on which the decision on the appeal is determined. If you are in any doubt about the correct procedures, you should seek legal advice.

Our Ref: CRC164779  
Your Customer No: EC114453, EC111432  
Contact: Customer Services

You can find online information about your consent document at [www.ecan.govt.nz/yourconsent.pdf](http://www.ecan.govt.nz/yourconsent.pdf) and also information regarding the monitoring of your consent at [www.ecan.govt.nz/monitoringconsent.pdf](http://www.ecan.govt.nz/monitoringconsent.pdf). These booklets contain important information about your consent and answers some commonly asked questions about what will happen next in the life of your resource consent. There is an Annual Compliance Monitoring Charge associated with every consent. For details of this, please refer to page 10 of the "Monitoring Your Consent" booklet.

Charges, set in accordance with section 36 of the Resource Management Act 1991, shall be paid to the Regional Council for the carrying out of its functions in relation to the administration, monitoring and supervision of resource consents and for the carrying out of its functions under section 35 of the Act.

Thank you for helping us make Canterbury a great place to live.

**For all queries please contact our Customer Services Section by telephoning (03) 353 9007, 0800 ECINFO (0800 324 636), or email [ecinfo@ecan.govt.nz](mailto:ecinfo@ecan.govt.nz) quoting your CRC number above.**

Yours sincerely



**CONSENTS PLANNING SECTION**

**CC Address:**

Pattle Delamore Partners Ltd  
Attn To: Jeremy Sanson  
PO Box 389  
**Christchurch 8140**

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# RESOURCE CONSENT CRC166677

*Pursuant to Section 104 of the Resource Management Act 1991*

## The Canterbury Regional Council (known as Environment Canterbury)

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GRANTS TO: Waimakariri Irrigation Limited

A WATER PERMIT: To take and use water.

COMMENCEMENT DATE: 08 Apr 2016

EXPIRY DATE: 18 Nov 2031

LOCATION: Browns Rock Road, Oxford

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### **SUBJECT TO THE FOLLOWING CONDITIONS:**

#### **Take Water**

- 1 Water shall only be taken from the Waimakariri River, at the Browns Rock Intake surface water abstraction point (SWAP) L35/0906, located at map reference Topo50 BW22:26013-96781.
- 2 Water may be taken at a rate not exceeding 11,041 litres per second.

#### **Use water**

- 3 Water shall only be used for:
  - a. irrigation of land within the approximately 78,000 hectare area shown on plan CRC166677, attached to and forming part of this consent;
  - b. filling of storage reservoirs and dams;
  - c. augmentation of groundwater surrounding Eyre River as authorised under consent CRC952571.1;
  - d. construction-related activities, including dust suppression, construction works, and vegetation establishment;
  - e. stockwater.

#### **Minimum Flow Restrictions**

- 4 When the flow in the Waimakariri River for any 24 hour period ending at noon is:
  - a. Either:
    - i. 63,000 litres per second or greater; or
    - ii. Equal to or greater than the sum of 41,000 litres per second plus the total abstractions authorised by permits which come within the category of "A" permits as defined by the Waimakariri River Regional Plan; or

- iii. greater than 41,000 litres per second and less than 63,000 litres per second and all water permit holders who are subject to same minimum flow restriction as is set out in c., are adhering to a water sharing regime that restricts the total rate of abstraction from the Waimakariri River whenever the flow is at or above 41,000 litres per second; then the maximum rate of abstraction, during the next 24 hours, shall not exceed 11,041 litres per second;
- b. greater than 41,000 litres per second and less than 63,000 litres per second, except where a. ii. or iii. applies, the maximum rate of take during the next 24 hours shall be equal to the rate shown on the attached graph CRC166677;
- c. At or less than 41,000 litres per second, no water shall be taken during the next 24 hours.
- d. For the purposes of this consent the flow in the Waimakariri River shall be the unmodified flow estimated by the Canterbury Regional Council from measurements at the Old Highway Bridge, at or about map reference Topo50 BW24:7175-9318.

### Flow Measurement

- 5 Prior to the taking of water in terms of this permit the consent holder shall install a water level measuring device, which shall be maintained at all times the consent is being exercised as follows:
  - a. the water level measuring device shall be installed in a location that will enable the determination of the continuous rate of the total flow and the volume of water being taken within an accuracy of 10 percent;
  - b. The measuring device shall, as far as is practicable, be installed at a site likely to retain a stable relationship between flow and water level. The measuring device shall be installed in general accordance with the National Environmental Monitoring Standards (NEMS) for Water Level Recording (Version 1.0 2013);
  - c. The flow at the measuring site shall be gauged at an interval that conforms to the requirements of the normative NEMS reference and adequate to define all rating curves and at a frequency to adequately detect all rating shifts. (in accordance with the National Environmental Monitoring Standards for Rating Curves (Version 1.0 2014));
  - d. Gaugings and site inspections shall be carried out in accordance with the National Environmental Monitoring Standards for Open Channel Flow Measurements (Version 1.1 2013);
  - e. A tamper-proof electronic recording device such as a data logger(s) shall be installed that shall time stamp a pulse from the water level measuring device at least once every 15 minutes and 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 1 July to 30 June in the following year, which the consent holder shall then download and store in a commonly used format; and

- iii. 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;
- f. The measuring and recording device(s) shall be available for inspection at all times by the Canterbury Regional Council.
- g. Within one month of the first exercise of this consent, and at two-yearly intervals thereafter, and at any other time when requested by Canterbury Regional Council, the consent holder shall calibrate the measuring device (in accordance with the NEMS) and provide to the Canterbury Regional Council:
  - i. a certificate signed by a suitably qualified person certifying the current accuracy of the measuring and recording devices, and also certifying that data from the recording device described in clause e. can be readily accessed in accordance with clause f.; and
  - ii. supporting information containing details of the calibration test.

### **Fish Screening**

- 6 At all times water in terms of this consent is taken, the consent holder shall operate and maintain a fish screen at the Browns Rock intake which meets the following requirements:
  - a. the majority of the screen is oriented parallel to the direction of water flow;
  - b. the screen will be positioned to ensure that there is unimpeded fish passage to and from the Waimakariri River;
  - c. the screen will be operated to minimise the risk of fish being damaged by contact with the face of the screen.

**ADVICE NOTE:** The existing fish screen previously installed and operated under CRC000585.9 is considered to meet the requirements of this condition

- 7 The fish screen operated and maintained in accordance with condition 6. shall be maintained as follows:
  - a. The screen shall be kept in good working order;
  - b. Records shall be kept of all inspections and maintenance, and those records shall be provided to Canterbury Regional Council, Attention: Regional Manager, RMA Monitoring and Compliance, upon request;
  - c. In the event that the fish screens at the intake become ineffective, either through damage from any cause or through the need for maintenance, the taking of water under this consent shall cease until the screens' effectiveness has been satisfactorily restored;
  - d. The consent holder shall within 24 hours of the screen becoming ineffective notify the Canterbury Regional Council, Attention: Regional Manager, RMA Monitoring and Compliance, and Fish and Game North Canterbury, of the situation and of the remedial measures undertaken.

## Environmental Management Strategy (EMS)

- 8 By 1 July 2016 the consent holder shall prepare and implement an Environmental Management Strategy (EMS) for the irrigation scheme including, but not limited to, the following:
- a. Implementation of industry articulated Good Management Practice (GMP).
  - b. Implementation of a monitoring programme for groundwater quality as specified in condition 9
  - c. Implementation of a monitoring programme for groundwater levels.
  - d. Implementation of a programme by 1 July 2016 to install water meters:
    - i. for all shareholders taking at a rate equal to or greater than 20 L/s; and
    - ii. that enables a minimum of 90% of the total flow delivered to shareholders to be measured.
  - e. Preparation of an annual report on the quantity of water used in each period from 1 July to 30 June, commencing from 1 July 2016, based on the measurements from flow meters in d. above, and an estimate of water use for the remaining 10% of unmetered use based on comparative land use activities with those shareholders that are metered.
  - f. Independent certification of the accuracy of the water meters when first installed and at 5 yearly intervals thereafter.
  - g. Information on:
    - i. The actual area irrigated each year and the irrigation methods that are used.
    - ii. A record of any change in the area of land irrigated or irrigation method compared with the twelve months prior, including:
      - a. The location(s) of any change in area of land irrigated; and
      - b. The method of irrigation used to service the increased area.
      - c. The use of active soil moisture management.
    - iii. A summary of land use serviced under both irrigation and associated dryland activities split into metered and unmetered water use.
    - iv. A summary of annual water use between 1 July to the following 30 June for those water users specified in clauses a. and b. compared to a WIL scheme water use model that represents efficient water use.
    - v. measures implemented to address inefficient users based on recommendations from the report from the previous year.
  - h. An assessment of farm water use efficiency with reference to the Irrigation NZ GMP guidelines.

- i. Implementation of active and managed irrigation scheduling.
- j. Measures to ensure that when water authorised by this consent is used on a property that also utilises a different irrigation water use consent that water used under this consent contributes to the overall efficient use of water on the property.

An annual report shall be provided to the Canterbury Regional Council, Attention: Regional Manager, RMA Monitoring and Compliance, by no later than 30 June every year (commencing 30 June 2017), describing the information in items a. – j. above, a description of any water use that has been identified as inefficient and the measures that will be taken to improve efficiency of those users.

### **Groundwater Monitoring**

- 9 The consent holder shall take:
- a. Representative samples of groundwater:
    - i. during August-September and April-May each year from each of the monitoring bores identified for the monitoring of Groundwater Quality effects in the EMS referred to in Condition 8.;
    - ii. monthly from three bores identified for monitoring of Groundwater in the EMS referred to in condition 8.. One of these bores is to be located up-gradient, in terms of the direction of groundwater flow, of the land irrigated by the scheme, one bore to be located down-gradient of the land irrigated by the scheme and one bore to be centrally located within the area irrigated by the scheme; and
    - iii. all samples shall be analysed for nitrate-nitrogen, ammonia-nitrogen, conductivity, pH and e-coli bacteria by a laboratory accredited to NZS/ISO/IEC Guide 17025 or equivalent, defined by and accreditation body recognised as operating to ISO/IEC Guide 58 for those analysis; and
    - iv. an annual report providing a summary of the results of the analyses of all samples taken shall be provided to the Canterbury Regional Council, Attention: Regional Manager, RMA Monitoring and Compliance, by no later than 30 June.

Water level measurements at least monthly from each of the bores identified for the monitoring of Groundwater Level effects in the EMS referred to in Condition 8. and an annual report setting out the levels and showing the mean level shall be provided to the Canterbury Regional Council Attention: Regional Manager, RMA Monitoring and Compliance, by no later than 30 June.

### **Operation and Management Plan**

- 10 The consent holder shall, prior to any works commencing under this consent, prepare and submit to the Canterbury Regional Council, Attention: Regional Manager, RMA Monitoring and Compliance, an Operation and Management Plan for the scheme. The Operation and Management Plan should include but not be limited to, how:
- a. The groundwater recharge trials are to be conducted and evaluated.

- b. The conditions imposed on these consents and on the land use consent granted for the scheme by the Waimakariri District Council are to be met.
- c. The effects of envisaged land use changes of the hydrological environment are to be remedied or mitigated.
- d. Water is taken in conjunction with other resource consents from the intake described in condition 1..

In August each year the consent holder and the Canterbury Regional Council shall jointly review and, if appropriate, amend the management plan for the ensuing year. Following this review the Operation and Management Plan shall be provided to the Canterbury Regional Council, Attention: Regional Manager, RMA Monitoring and Compliance by no later than 30 September each year, describing the times a. – d.. The provisions of the Operation and Management Plan shall be implemented at all times by the consent holder.

### **General conditions**

- 11 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.

### **Administration**

- 12 Before the first exercise of this consent, resource consents CRC000585.9, CRC144253, and CRC164779 shall be surrendered.
- 13 The Canterbury Regional Council, Attention: Regional Manager, RMA Monitoring and Compliance, shall be informed immediately on first exercise of this consent by the consent holder.
- 14 The Canterbury Regional Council may, once per year, on any of the last five 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.
- 15 If this consent is not exercised before 31 March 2019 it shall lapse in accordance with section 125 of the Resource Management Act 1991.

**Issued at Christchurch on 8 April 2016**

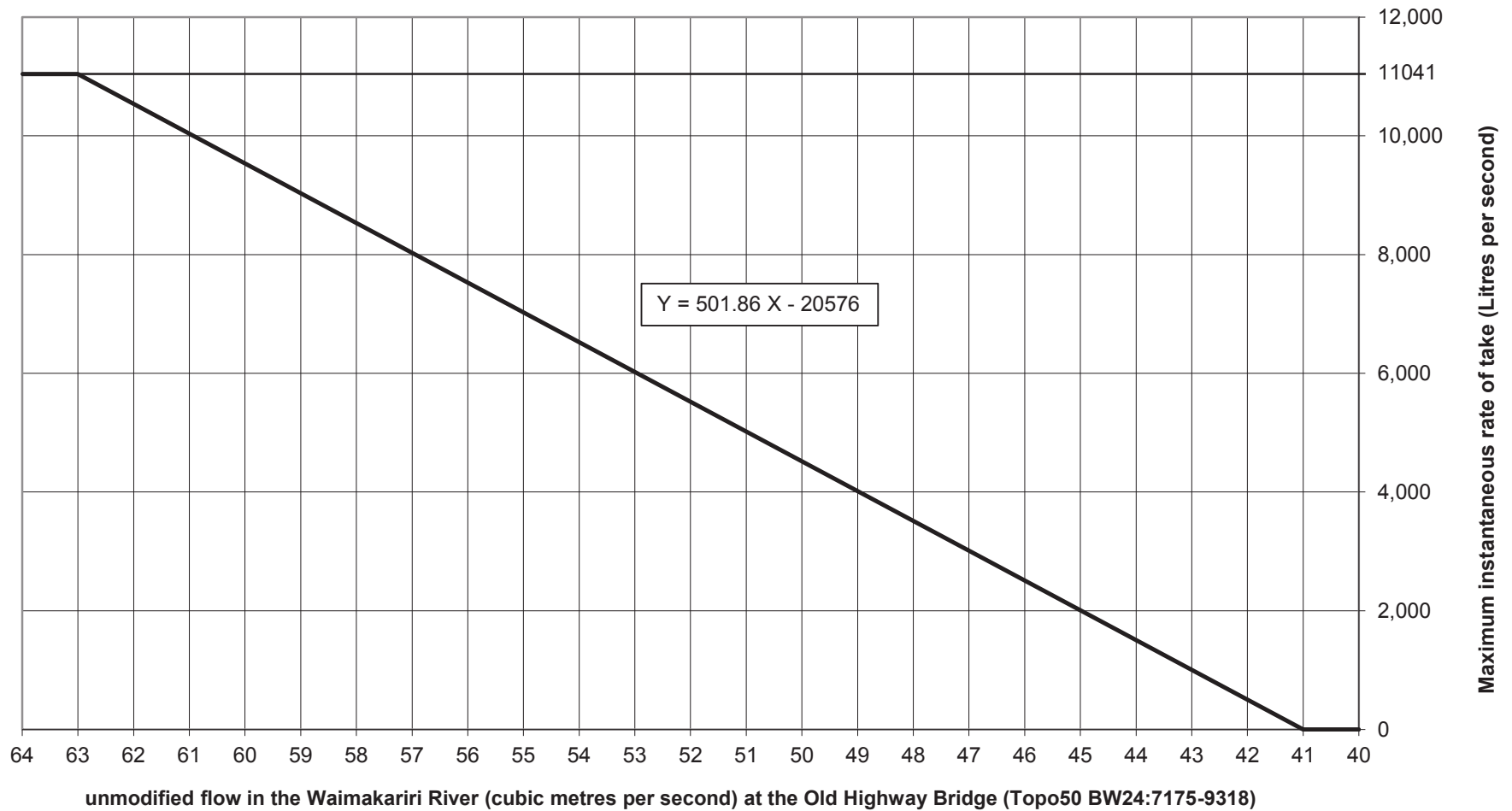
Canterbury Regional Council





Graph CRC166677

Maximum allowable abstraction rates from the Waimakariri River flow as stated in condition 4 of consent CRC166677



Consent No: CRC166677

## Exercising of resource consent

**It is important that you notify Environment Canterbury when you first start using your consent.**

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**GRANTED TO:** Waimakariri Irrigation Limited  
**A WATER PERMIT:** To take and use water.  
**LOCATION:** Browns Rock Road, Oxford

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Even if the consent is replacing a previous consent for the same activity, you need to complete and return this page.

Providing this information will:

- Validate your consent through to its expiry date
- Minimise compliance monitoring charges
- Help provide an accurate picture of the state of the environment.

If consent CRC166677 is not used before 31 Mar 2019 this consent will lapse and no longer be valid.

**Declaration:**

I have started using this resource consent.

**Action taken:** (e.g. pasture irrigated, discharge from septic tank/boiler/spray booth etc).

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**Approximate start date (Note: this may be different to the date the consent was granted):** \_\_\_\_\_

**Signed:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Full name of person signing (please print):** \_\_\_\_\_

**Please return to:**

**Environmental Protection - Administration**  
**Environment Canterbury**  
**PO Box 345**  
**Christchurch 8140**

# Flowmeter, Datalogger Installation and Commissioning

TO: Environment Canterbury  
C/o Water Metering Team  
4 McNally Street  
PO Box 419  
Ashburton 7700

Ph: 03 308 7682  
Fax: 03 365 3194  
Email: water.metering@ecan.govt.nz

Consent Holder: \_\_\_\_\_

Consent number: CRC \_\_\_\_\_ Well/SWAP number(s): \_\_\_\_\_

Installation date: \_\_\_\_\_

**Flowmeter details:**

Make: \_\_\_\_\_ Meter size: \_\_\_\_\_ (mm diameter)

Model: \_\_\_\_\_ Pulse output: **Yes / No**

Serial number: \_\_\_\_\_ Volume per Pulse \_\_\_\_\_ **m³/puls**

(Start) Meter Reading Volume: \_\_\_\_\_ **m³ (state units if different)**

**Datalogger details:** Installed **Yes / No**

Make: \_\_\_\_\_

Model: \_\_\_\_\_ Serial number: \_\_\_\_\_

Telemetry installed for compliance: **Yes/No** Data hosted by: \_\_\_\_\_

**Installation details:**

Pipe internal/external diameter: \_\_\_\_\_ mm Pipe Wall Thickness \_\_\_\_\_ mm

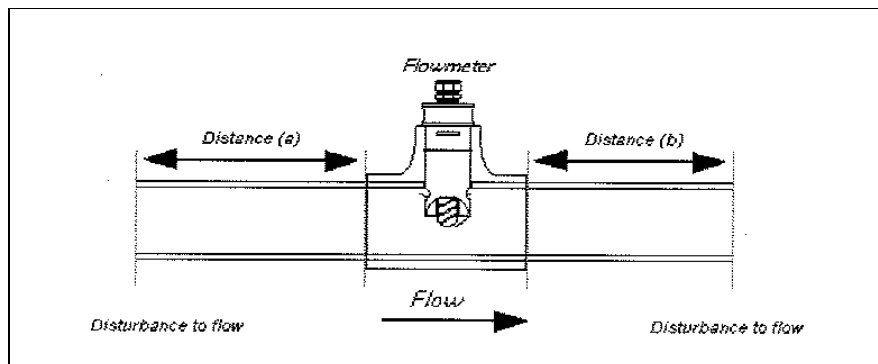
Pipe material: *Ductile Iron, Mild Steel, PVC, Polyethelene, Aluminium, other* : \_\_\_\_\_ (circle)

Distance of straight, unobstructed pipe **upstream** of flowmeter (distance (a) in Figure 1): \_\_\_\_\_ mm

Distance of straight, unobstructed pipe **downstream** of flowmeter (distance (b) in Figure 1): \_\_\_\_\_ mm

Is there a straight unobstructed accessible pipe in the system of at least 15 diameters length to verify the flow with a clamp-on flow meter? **YES / NO** Location in system: \_\_\_\_\_

**Figure 1: Installation diagram** - Please mark any disturbances upstream of the flowmeter e.g. pipe size reduction, gate valves, pipe bends. Refer to Figure 2 for an example of a good installation.



**Insertion meters only:**

Insertion depth: \_\_\_\_\_ K-factor: \_\_\_\_\_

**Ultrasonic meters only:**

Transducer size: \_\_\_\_\_ Transducer spacing: \_\_\_\_\_

Transducer mounting: V or Z (Please circle, V = Reflect, Z = Direct)

**Accuracy details:**

Do you have a WET calibration certificate? **Yes / No** (If yes, then please submit the certificate.)

Has the meter been checked against a portable flowmeter? **Yes / No** (If yes please fill in water meter verification form)

**Certification:**

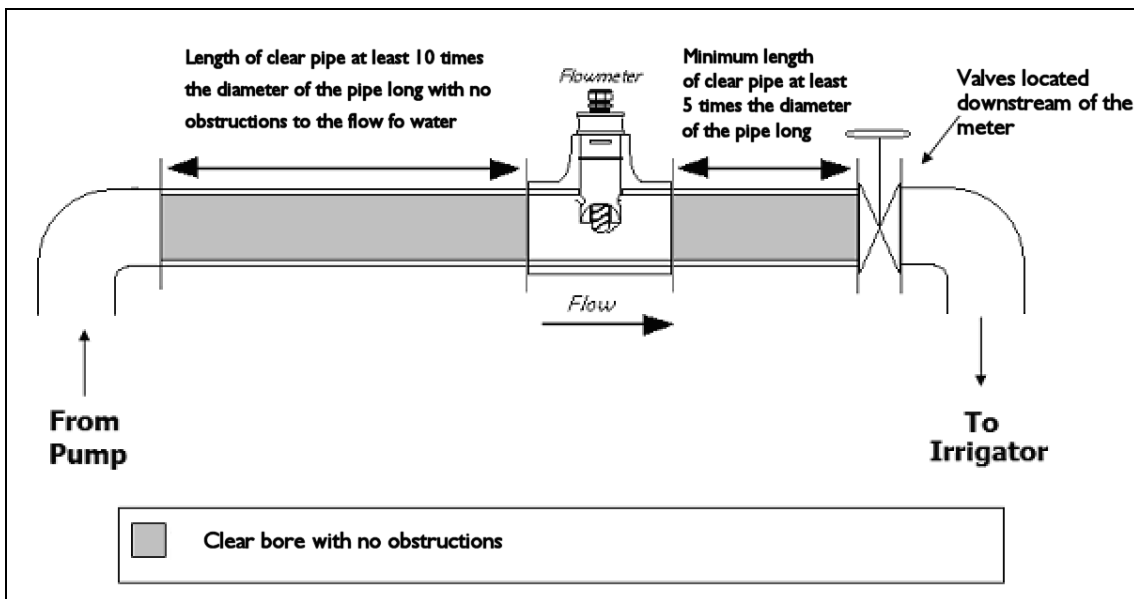
I/we certify that the above flowmeter and datalogger have been installed in accordance with Environment Canterbury's requirements.

- That a wet calibration certificate from the manufacturer is attached to this form
- That a water meter verification form is attached to this form.
- That a picture of the installation is attached to this form.

Installed by: \_\_\_\_\_ Signed: (by installer) \_\_\_\_\_

Company: \_\_\_\_\_ Date: \_\_\_\_\_

**Figure 2: An example of an Ideal installation of a flowmeter, including obstructions in pipework.**



# Flowmeter/Water Measuring Device Verification Form

TO: Environment Canterbury  
 C/o Water Metering Team  
 4 McNally Street  
 PO Box 419  
 Ashburton 7740

Ph: 03 308 7682  
 Fax: 03 365 3194  
 Email: water.metering@ecan.govt.nz

Well/SWAP number(s): \_\_\_\_\_

Consent Holder: \_\_\_\_\_

Verification date: \_\_\_\_\_

**Flowmeter/Water Measuring Device details:** *(if not already provided on installation and commissioning form)*

Make: \_\_\_\_\_ Meter size: \_\_\_\_\_ (mm diameter)  
 Model: \_\_\_\_\_ Pulse output: **Yes / No**  
 Serial number: \_\_\_\_\_ Volume per Pulse \_\_\_\_\_ **m<sup>3</sup>/puls**  
 Meter Reading Volume: \_\_\_\_\_ **m<sup>3</sup>** *(state units if different)*

**Insertion meters only:**

Encountered K-factor in the flow meter : \_\_\_\_\_ Correct **Yes/No**

**Ultrasonic meters only:**

Transducer size encountered \_\_\_\_\_ Transducer spacing: \_\_\_\_\_  
 Transducer mounting: \_\_\_\_\_ V or Z (Please circle, V = Reflect, Z = Direct) Correct **Yes/No**

**Verification details:**

Is a clamp-on water meter used for verification: **Yes/No** *(if no describe the method used) e.g. reservoir/time calculation, volumetric etc)*

Verification flow meter brand and type: \_\_\_\_\_

Verification flow meter serial number: \_\_\_\_\_

Last calibration date of the flow meter used for verification: \_\_\_\_\_

*(Calibration certificates needs to be send in (once) after every (yearly) calibration to ECan)*

**Verification parameters:**

Used parameters for verification: Pipe diameter: \_\_\_\_\_ mm Pipe Wall Thickness \_\_\_\_\_ mm

Pipe material: **Ductile Iron, Mild Steel, PVC, Polyethelene, Aluminium, circle or other** : \_\_\_\_\_

Location in system where the clamp-on was attached: \_\_\_\_\_

**Measured flows:**

Undertake three separate observations and record and average the results in the table below.

Verification flows should be taken at or around the consented flow rate and/or the flow rate the well is usually pumped at.

If flows don't verify within 5% a second clamp-on location can/should be attempted.

	Location 1 Observation 1	Location 1 Observation 2	Location 1 Observation 3	Location 2 Observation 1	Location 2 Observation 2	Location 2 Observation 3	Average
installed meter flow: L/s							
verification flow meter: L/s							
% Difference							

**Certification:**

I/we certify that the above flowmeter/water measuring device has been verified and the measured flow is within 5% of the verification meter.

**OR (circle one)**

I/we have found that the installed flowmeter/water measuring device deviates more than 5% **above/below** the verified flow.

Recommend remedial action: \_\_\_\_\_  
 \_\_\_\_\_

Verified by: \_\_\_\_\_ Signed: (by verifier) \_\_\_\_\_

Verifiers Certificate No \*: \_\_\_\_\_

Company: \_\_\_\_\_ Date: \_\_\_\_\_

\* Each verifier will be registered by the manufacturer/supplier on having attended a verifier course for their equipment. ECan will keep a list of the approved verifiers and certificate numbers.