

# Submission on the Proposed NES for water measuring devices

This submission from Greater Wellington follows the questions set in the discussion document.

## 1. Scope of the NES and exemptions

Greater Wellington **supports** the scope of the NES extending only to takes that require resource consents in regional plans. In our Regional Freshwater Plan, this would apply to takes over 20,000 litres per day taken at a rate of more than 2.5 litres per second.

We recognise that this threshold may be too low to be applied to all users around the country, or even in the Wellington region, and suggest that the requirement in this region could apply firstly to surface water takes over 5 litres/second, then to smaller takes at time their consent is renewed (if a new consent is issued).

## 2. Proposed minimum standards for measuring flow in pipes and channels

Rather being “capable of continuous measurement” we believe that all measuring devices should have a data logger fitted to record the take at specified intervals to make the measuring device useful for resource management. The recording interval should be no more than 15 minutes for surface water takes and no more than daily for groundwater takes (see paragraph 4 below).

The reason for requiring data logging for all takes with measuring devices is that in our experience relying on the consent holder to record daily totals at the same time each day results in poor compliance rates. If the NES does not require electronic logging of water meters, there will be a significant burden on staff time to enter the data into our database.

Electronically logging the data has distinct advantages:

- the time spent by the consent holder reading the meter on a daily basis is eliminated or at least reduced
- the data record is more detailed and more accurate
- the rate of compliance with consent conditions is increased
- data transfer to the consenting authority is faster and more accurate if it's in electronic format because data does not have to be manually entered by staff.

The “accuracy of measurement” suggests an “accuracy of measurement of  $\pm 5\%$ ”. A better requirement may be a “maximum accuracy error of  $\pm 5\%$ ”, or “be accurate to within 5% of

the true value". In open channels, the accuracy should apply to the flow, not the water level, and a maximum error of  $\pm 10\%$  should be achievable.

### **3. Installation and maintenance standards**

Our experience in reading meters annually has revealed that many meters break down after only three years. For this reason we submit that an independent verification of the calibration be carried more frequently than every five years. We suggest that requiring calibration every three years is appropriate.

The frequency of rating curve checks should occur in accordance with guidelines for calibrated flow-measurement structures. In general, installation and maintenance requirements should be in accordance with national guidelines or ISO standards for open channel flow measurement.

### **4. Data recording and transfer**

#### **Groundwater – daily totals**

#### **Surface water – 15 minute totals**

The maximum interval for recording groundwater takes should be one day. Any less frequent than this and the data will not be able to be used to assess the relationship between groundwater levels and surface water flow.

Surface water takes should be recorded at a maximum of every 15 minutes so that the effect on river flow can be determined. If meters are fitted with data loggers it is easy to record at this frequency. The water meters generally create an electronic pulse every time  $1\text{m}^3$  of water passes through the meter. The data logger can time stamp every  $1\text{m}^3$  or record the hourly/daily/weekly total of these pulses.

Transfer of data should be no less frequent than annually. Data should be transferred in an electronic format agreed upon by the consenting authority. Electronic transfer from data loggers is simple and can be achieved using telemetry, text message entry, website reports or direct raw data transfer.