

Appendix 1

Construction of the Olinda Biofilter - A Photographic Summary



The installation site

Looking NNE from the access track (see Fig. 2). The foundation for the biofilter modules is just visible behind the end of the sleeper wall, to the left of the photo. (The final position of the tanks is between the trees in the centre of the photo, to the left of their current position.)



The prepared biofilter bed foundation

Looking to the NE. The orange sand covers sufficient area for two biofilter modules. The two tanks are installed between the trees visible to the right of the photograph.



Filling the biofilter modules with biofilter blend

The plastic and geotextile lining, and the construction of the biofilter boxes, is clear from this photograph. The photo also shows how the *bulka* bags of biofilter blend are hoisted to allow the drawstring flap at the bottom to be opened.



Biofilter blend being emptied into the lined box.

The geotextile lining covering the distribution pipework at the base of the biofilter is visible as the light grey area to the left of the peat.



The upper distribution pipework

For this system, to allow ease of access to both the pipework and the biofilter blend, it was not necessary to embed the pipework in gravel or to cover the pipework with peat. (The top of each box has been covered subsequently with shade cloth, to minimise the build-up of leaf litter.)



The transfer and supply valves

As indicated in Figure 5 of the Report, this arrangement of gate valves allows water to be transferred between either tank and supplied to either biofilter module.



The petrol powered pump

This is an **Onga** pump powered by a **Honda** model GX 160 petrol motor, for use at the biofilters (where mains electricity is not available). The purpose of the pump was to assist with transfers between the tanks, and to supply water at higher pressure / flow rate to the biofilters.



The **ManuFlo** Model MEHR40 flow meter

This unit sends pulses at 10 L intervals to a **ManuFlo** Model FRT 303-B digital flow rate totaliser (out of view to the right).



The **ManuFlo** Model FRT 303 flow logger

This unit receives pulses at 10 L intervals from a **ManuFlo** Model MEHR40 flow meter (out of view to the left).



The pump at the dam

This pump, the green motor at centre left and the grey pressure balance tank at the rear) is a high-output **Onga** mains electric pump, capable of pumping at approximately 100 L/min against a head of 15 metres.



The biofilter units during flow trials

Note that water would not normally be visible or accessible at the top of the filters in routine models.



Overall view of the completed biofilter system

The grating to the outfall sump is visible in the foreground at right.