

## Low Flow Packaged Unit

### Hydro-Jet™ Screen Cleans up at Golspie

#### Project Profile:

- **Low flow unit.**
- **Low total installed costs.**
- **Rapid installation in less than a day.**

#### Product Profile:

- **No moving parts.**
- **No power required.**
- **Exceeds current requirements.**
- **Self-cleansing.**
- **Self-activating.**
- **Minimal maintenance.**

Efforts to improve British coastal water quality are continuing in line with the objectives set by the Scottish Environment Protection Agency (SEPA) and European objectives laid down in the Urban Waste Treatment Directive. As a result, North of Scotland Water Authority has invested in three Hydro-Jet™ Screen units to screen flow to a new treatment plant at Golspie, on the Dornoch Firth, Highland region.

The three Hydro-Jet™ Screen units, with maximum flow rates of 15 l/s, 200 l/s and 400 l/s were specified to protect overflows from different areas of the village, and eliminate gross solids (greater than 6 mm in two directions) from the intermittent discharges into the sea.

The treatment works are designed to serve a current community around Golspie of 1600, with an allowance for expansion to over 2000.

Mr Patrick Stronach, Technical Director of project consultant engineers WA Fairhurst and Partners, comments: "The variation in precipitation conditions on the East Coast can be very great. Normally it is fairly dry, but heavy showers, and in particular, snowmelt, can result in very heavy flows. The Hydro-Jet™ Screen units are interconnected to protect overflows adjacent to three new pumping stations. We used one prefabricated unit as well as conventional units, as Hydro suggested it was more cost-effective".

The 15 l/s Hydro-Jet™ Screen model is a prefabricated, all stainless steel unit\*, which was delivered ready to be bolted to the concrete plinth by the main contractor. The 200 l/s and 400 l/s units were assembled on site by a specialist contractor.

\*Chandler KBS, in a study on the Hyder CSO's in the Rhondda Valley for Dwr Cymru Welsh Water April 2000, indicate an installation cost saving of approximately £6,000 per pre-assembled stainless steel Hydro-Jet™ Screen package unit over concrete units.



The Hydro-Jet™ Screen is unique in that it requires no power and has no moving parts, yet is a self-cleansing system. A patented air break siphon is used to generate a rising and falling water level through the screen that washes screenings on to the treatment works whilst discharging screened water. In addition to being competitively priced in relation to capital cost, the Hydro-Jet™ Screen's attributes of requiring no power supply and minimal maintenance ensure that the whole life costs are extremely attractive when compared to conventional electrically powered screens.

Consultant engineers for the Golspie CSO screening project were W A Fairhurst and Partners of Aberdeen and the main contractor was Morrison Construction Limited of Inverness.

This case study forms part of a series demonstrating the flexibility, cost-effectiveness and extended track record of the Hydro-Jet™ Screen. Other case studies include:



Retrofit to Existing CSO Chamber



New-Build Concrete Chamber



New-Build Rotary Unit with Storm King®



Retrofit to Storm King®

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