

Orphir

Aerated Saturated Vertical Flow Reedbed – SVF FBA



Project

Orphir WwTW

Location

Orphir Village, Mainland
Orkney, Scotland

Project type

New build

Wastewater type

Primary treated, domestic
wastewater

Treatment process

Aerated saturated
vertical downflow

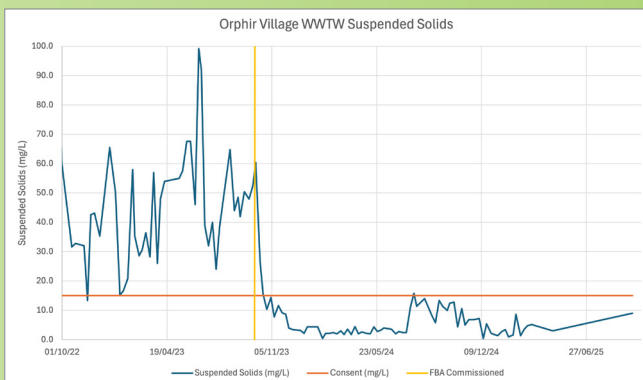
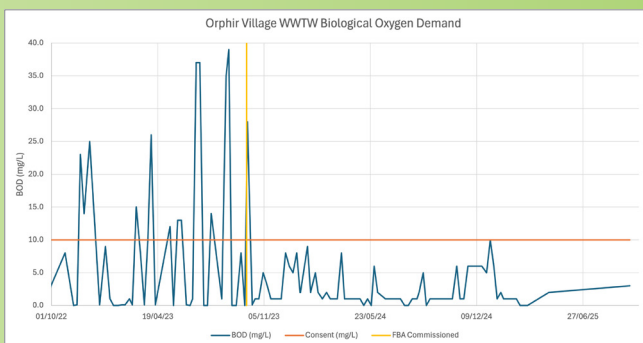
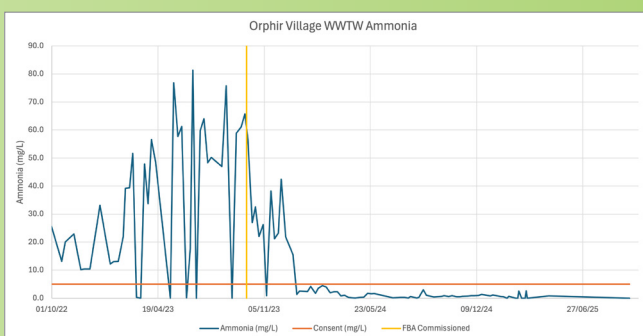
Need

The Orphir Wastewater Treatment Works (WwTW) is situated on the southern side of the Orkney mainland. It is owned and operated by Scottish Water and serves a population equivalent of 131, with growth expected to rise to 190.

The small WwTW was originally built in 1999 to meet the needs of Orphir's Community School and areas of newer housing in the village. It comprised two settlement tanks, an anoxic tank and a soak away.

The community's growth and pressure on the local burn resulted in the need for further treatment. Working closely with its delivery partner, Scottish Water developed an innovative solution using a new septic tank and an aerated reedbed to provide an enhanced level of treatment.





Solution

ARM Ltd's solution was to use the improved treatment provided by the newly installed septic tanks and enhance them with a **Forced Bed Aerated™** vertical downflow reedbed situated between the septic tank and discharge. The new works uses the **Forced Bed Aerated™** to boost the biological process and augment the level of nature-based treatment at the site. It also supports the community's growth by enabling the connection of new homes in the local area.

Benefits

Scottish Water Waste Water Investment Planner for the north and the northern isles stated: *"The site is looking good and already performing well. When the reeds are fully established, this will create a green area on site that will be more pleasing to the eye than traditional concrete structures, along with supporting biodiversity too. The new works is a relatively low input process compared to alternatives which gives a carbon efficient way of achieving a better standard of treatment."*