

Technical Inspection of Scottish Water's Water Treatment Works

Lochranza WTW

Date: 8th September 2021

DWQR Staff Present

Colette Robertson-Kellie

Scottish Water Staff Present

Mark Bunyan, Stephen Brown, David Hutton, David Seales, Gary Caig, Scott Gibson

Summary of Inspection

Overall Summary

Lochranza WTW is fed by Gleann Easan Biorach River through a rough screen at the source; this screen is cleaned manually by the Operators. The raw water is not monitored for colour or turbidity, either from bench tests or on-line monitors, despite the source being flashy and variable in colour and turbidity. The DWSP shows the presence of a raw water turbidity monitor. There is a raw water pH monitor. The membrane is a nanofiltration plant, which was running at 4.4 l/s. There is a recycle stream turbidity monitor, but it was not operational at the time of the audit, the treated water pH monitor was not operational and there was no permeate turbidity monitoring. It is recommended that there is a review of on-line monitoring at the site.

Foam balls are replaced by a contractor every three months, and there are scheduled citric acid and hypochlorite cleans by Operators. Cleans are triggered by time or differential pressure. All membranes are replaced annually by a contractor.

Operational staff carry out combined permeate bench testing once a week, and any samples failing specification are checked for UV 254 absorbance, but there are very few sample points on the modules, so is recommended that the number of sample taps is increased to allow better sampling of individual stacks. Final water pH is adjusted through a limestone contactor and sodium hypochlorite dosed for disinfection. Final water pH was 8.61, free chlorine was 0.9 mg/l. The Ct at the site is 0.24 - there is a chlorine contact tank on the site but it is not used as there were hydraulic issues when it was commissioned. It is recommended that the Ct at the site is reviewed and a more appropriate Ct achieved for adequate disinfection at the site.