

Case study

Wimbleball Dam Willowstick Survey

Atkins use Willowstick to significantly reduce cost of remediation scheme at concrete dam

The cost of a proposed leakage remediation scheme at Wimbleball dam was dramatically reduced after Willowstick identified different leakage path than previously assumed.

Leaking grout "curtain" suspected

During construction a grout "curtain" was installed as a barrier to potential leakage beneath the 63m high concrete buttress dam. Despite efforts to minimize and control leakage through the dam's foundation, leakage out of the reservoir steadily increased over the 30 years prior to the survey to a point where it became a major concern.

The leakage was thought to be coming through the compromised grout "curtain". As a result a major remediation scheme was proposed by the client to grout from a newly constructed tunnel under the reservoir.



The proposed remediation project involved significant costs and "may not" have remediated the seepage problem as the exact location of the leakage could not be confirmed.

Willowstick survey identified alternative leakage path

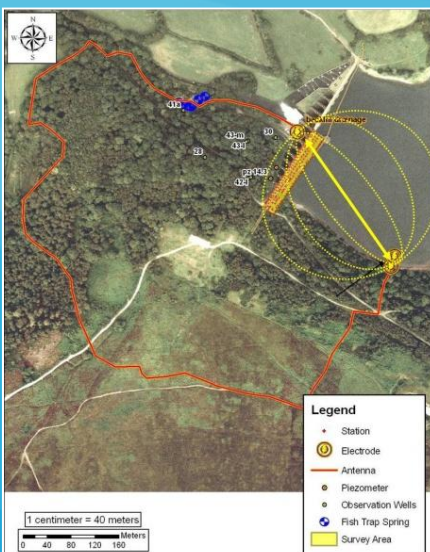
Prior to commencing the scheme the client asked Atkins to 'prove' the leakage points using 'Willowstick', which up to then had been largely assumed on incomplete information.

The Willowstick survey quickly identified a completely different leakage path than previously assumed. No leakage was detected under the dam itself and, despite what was initially assumed, the grout curtain was performing as designed. Instead a series of channels seeping around the end of the concrete buttress section were discovered.

As a result the degree of proposed grouting work was dramatically revised down delivering a 90% cost saving to the client.



Plan view of the surveyed leakage paths through the left abutment



A plan view of one of the survey layouts