

CASE STUDY / INTERVIEW

After 18 years and 15 experts, Samanalawewa Dam Turns to AquaTrack™ to Find Their Leak

INTERVIEW WITH DR ANDY HUGHES – DIRECTOR OF DAMS & WATER RESOURCES FOR ATKINS GLOBAL, DAM PANELIST AND EXPERT WITNESS TO UK GOVERNMENT, FORMER ICOLD MEMBER, VP OF INTERNATIONAL COALITION OF LARGE DAMS—THE WORLDS LEADING ORGANIZATION ON TOPICS RELATED TO DAM ENGINEERING & SAFETY

BACKGROUND

The Samanalawewa dam is a 100 meter high, 530 meter long rockfill dam with a clay core; built on a karst foundation in Sri Lanka.



THE DAM HAS BEEN LEAKING FOR 18 YEARS, CAUSING LOSSES TRANSLATING INTO A SIGNIFICANT COST TO THE OWNER

THE PROBLEM

IMMEDIATELY UPON FILLING THE 100 metre high dam, a significant leak occurred—in excess of 8 cumecs—which removed 25,000 cubic metres of fill downstream of the dam. Dr Andy Hughes of Atkins Global, a world-

renowned expert witness and former presidency member of ICOLD, was engaged to solve the problem.

Q: WHAT ALTERNATIVES WERE CONSIDERED?
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“DURING THE FIRST 18 YEARS AFTER THE leak occurred, the owner spent more than £55M drilling grouting galleries over 2 kilometres long and depositing more than 500,000 cubic metres of clay into the reservoir basin to try to stem the leak. More than 15 experts from around the world spent many years trying to solve the problem, but to no avail.”

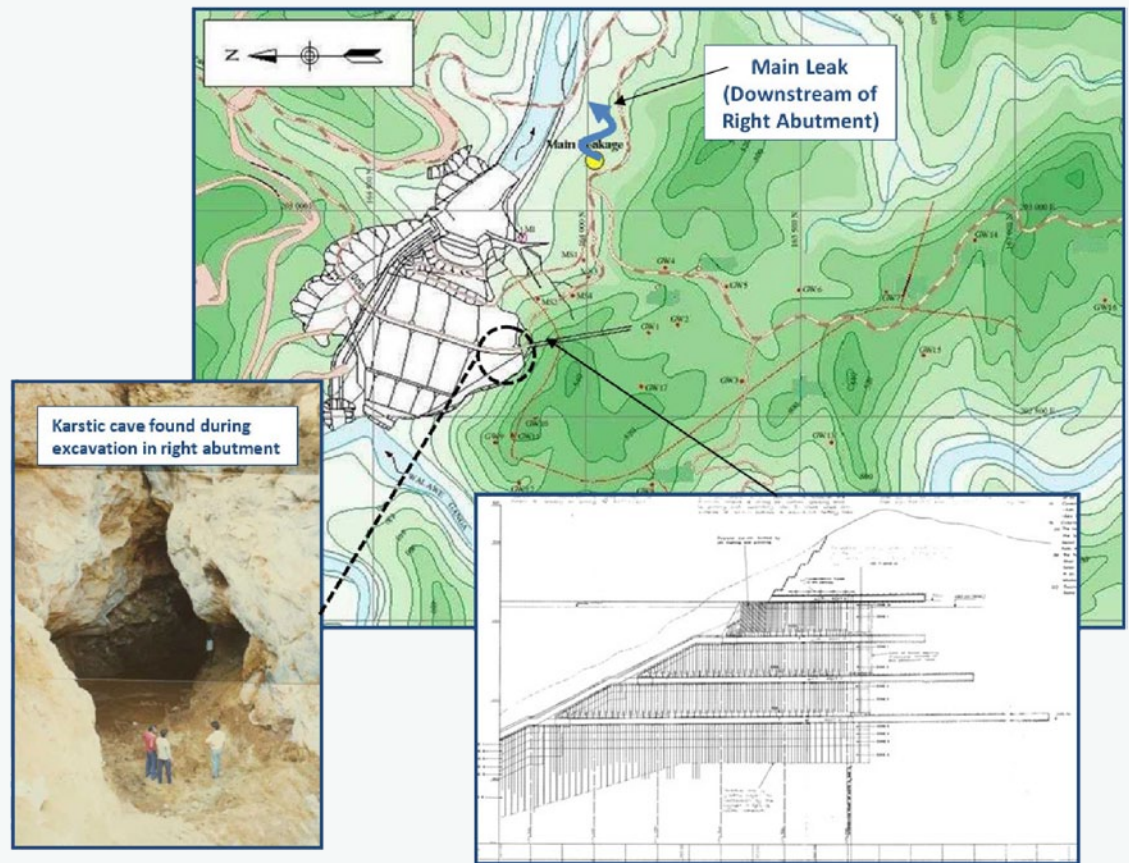


Q: WHY DID YOU CHOOSE WILLOWSTICK?
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“WILLOWSTICK IS THE ONLY TECHNOLOGY I have found that accurately maps preferential flow paths in plan view for very broad areas and at great depth, both necessary to pinpoint the flow paths for this dam. Willowstick is unique. I liken it to doing an MRI before surgery. Why would I waste more money drilling blindly? I brought Willowstick with me immediately on my initial trip to Sri Lanka.”

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DR ANDY HUGHES – ATKINS GLOBAL

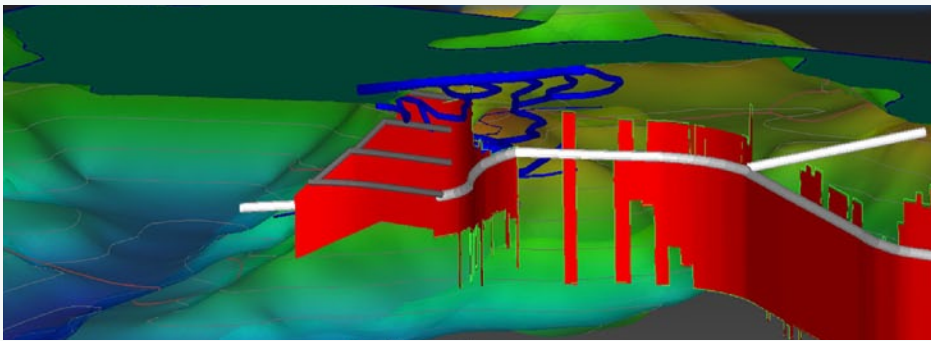


Q: WHAT WAS THE BENEFIT/ROI?

“THE RESERVOIR HAS BEEN DRAWN DOWN FOR OVER FIFTEEN YEARS BY SOME FIFTEEN meters. if we’d have done a willowstick survey day one that would have saved hundreds of thousands of pounds in lost revenues from irrigation and power generation. Furthermore, they may well have spent another £55M in blind drilling. Now that we’ve pinpointed the leaks the entire remediation will be less than £2M. You can argue the ROI will be well over £50M. In addition, Samanalawewa can now have peace of mind that the problem will be solved. Since Willowstick gives a global view underground, we know where all the preferential paths are. You don’t have the risk of stopping one path only to find out there were other paths you didn’t see.

“The ROI will be well over £50M”

DR ANDY HUGHES – ATKINS GLOBAL



FLOWPATHS SHOWN IN 3D LOOKING UP FROM BENEATH THE RESERVOIR

FAILED SPENDING BEFORE WILLOWSTICK

£55M

REMEDICATION COSTS AFTER WILLOWSTICK

£2M

“In just three weeks the Willowstick survey identified two discrete areas above the grout curtain where leakage was taking place.”

DR ANDY HUGHES – ATKINS GLOBAL

For more information on Willowstick and AquaTrack™, visit willowstick.com

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