

Closing in on old ironstone pollution problem

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Dr Richard Lord and Janet Atkinson from Teesside University at the polluted river

Pollution experts at Teesside University, UK, are close to solving a problem which has led to over 100 tonnes of discharges from old iron stone mine workings pouring into the Noth Sea every year.

A [pollution](#) problem which has turned an East Cleveland beck red for the past ten years is being tackled by a team of Teesside University researchers.

The team from the University's Clean [Environment](#) Management Centre (CLEMANCE) say they are close to finding a solution after identifying a way of pumping and treating the minewater to tackle the pollution seeping from old ironstone mine workings at Saltburn Gill, Saltburn, on the North East coast.

CLEMANCE'S team believes an existing shaft, or a new borehole, could drain away the polluted water instead of letting it coming to the surface in the Saltburn Gill Nature Reserve, which is a Site of Special Scientific Interest because of its ancient woodland.

The pollution began one night in May 1999, when a new discharge from abandoned ironstone mine workings turned the beck a rust colour, raising concerns for the health of the Saltburn Gill Beck, which runs into Skelton Beck through Valley Gardens Park and on to the beach.

The water is not toxic but contains high levels of dissolved iron. Nearly half a tonne of iron ochre is deposited on the stream bed every day, smothering it to such an extent that wildlife struggles to survive.

The discharge means that more than 100 tonnes of the [iron](#) flow into the North Sea every year via the beck.

The ongoing investigation into the problem has been carried out by organisations including CLEMANCE and the Environment Agency, working with Saltburn, Marske and New Marske Parish Council, Tees Valley Wildlife Trust and the Saltburn Gill Action Group (SGAG), which was set up on 2005 to work towards a solution.

The Environment Agency has secured £35,000 to follow up recommendations from the feasibility study this year, which could lead to a long-term solution. The feasibility study was funded by a £16.5K award from the Impetus Trust. The Coal Authority is supporting the work using expertise gained from treating coal minewater problems.

Drilling a borehole to pump and treat is seen as the best option by CLEMANCE after the idea of creating reed beds to filter the water at the discharge point in the steeply wooded valley of Saltburn Gill proved impractical because they would have to be huge to do the job properly.

Dr Richard Lord, CLEMANCE's Reader in Environmental Geochemistry & Sustainability, said: "We were excited when we found an old mine shaft which had not been closed off and we wondered if we could be somewhere to pump the water underground from, rather than letting it come to the surface naturally in the Gill."

"Through the use of CCTV cameras, we have been able to check the shaft's condition. It was disappointing when we discovered that the shaft was blocked off further down but the survey gave us critical information about the minewater levels and it did get us thinking about pumping as a way of controlling the pollution".

"Drilling a borehole nearby to pump the water from the underground workings, will allow it to be treated and discharged back into the Beck. That way we could make sure that it does not leak out untreated close to the Saltburn Gill nature reserve. We are hopeful that we are nearing a solution to this difficult problem at last."

Dr Lord said that the work was important because the European Union's Water Framework Directive calls for all catchments to be of good status by 2015. However, some former metal mining areas still experience serious problems from untreated minewater.

He said: "The work at Saltburn Gill is very exciting. There are plenty of becks and streams across the country with similar problems from old metal mines and if the solution works at Saltburn Gill, it could be used elsewhere. At the moment, many of them simply are not up to the standard that will be required."

The Environment Agency has already contributed £15,000 to finding a solution to the problems in Saltburn.

Environment Agency officer Don Mason said: "Saltburn has inherited problems caused by its industrial past, and this could have consequences

for the environment in the future. The ochre from the minewater is smothering the aquatic wildlife in the beck which has impact on larger creatures like birds who rely on them for food.

"This latest development is exciting news from the university which shows that by working together, we will hopefully improve the water quality in Saltburn so that the town's becks and woodland will be protected for future generations."

Source: Teesside University

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