



BRIEFING

Cottage Pool reservoir distress, September, 2008

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The author's journey to the British Dam Society conference at Warwick took an interesting diversion via Brockton, Shropshire, following a phone call from Paul Clare, Mouchel's engineer working for Shropshire County Council.

During some local flooding resulting in damage to the road through Brockton, Paul, who was involved with nearby highway works, was asked by the council to check the small reservoir sited approximately 0.5 km upstream of the village. Paul visited the site over the weekend of 6–7 September, and found that the reservoir, which was impounded by a 5 m high earth embankment, was brimming full and had recently overtopped the dam. It was thought that the reservoir volume was approximately 12 000 m³.

The reservoir is privately owned, and was stocked with fish. The owner was on holiday in Spain, but his son was on site.

Small overflow spillways on either side of the dam had both been raised using timber stop logs, and further obstructed with wire mesh panels – presumably to increase the reservoir capacity for the fishery.

Paul and his team removed the obstructions, which started the process of lowering the water levels, and they also plugged a leak adjacent to the left hand spillway with cement filled bags. The embankment had been severely eroded by the overtopping water and the formation of deep gullies appeared to have been triggered by the presence of mature trees and bushes growing on the embankment (Figure 1). It was



Figure 1. Eroded downstream shoulder

estimated that the crest had been overtopped by 100–200 mm.

The dam appeared to be a homogeneous clay fill, and the remaining downstream shoulder material was still stiff and intact. There was no sign of leakage.

The safety of the downstream community was of paramount concern. The team had alerted the local police of the situation and recommended that the junior and infant school, less than 500 m downstream, be closed until the dam could be made safe.

The embankment had been left in a perilous condition and emptying the reservoir was the best practical option. The 350 mm scour outlet was inoperable, but after jetting to remove silt the valve was opened, having an immediate effect on lowering the water levels (Figure 2). The area immediately downstream of the outlet was protected with sand and cement-filled bags to protect against scouring the outlet channel. Within 24 h the reservoir was empty, and the owner, who cut short his holiday, had managed to rescue his stock of fish.

This incident highlights the importance of having an operable and effective scour facility even on small reservoirs, and also further reinforces the need for a new Reservoirs Act based on the risk posed to communities, rather than the current legislation concerning only raised reservoirs with a volume of over 25 000 m³.



Figure 2. Scour outlet