Hampshire Basin. Such folding does not occur in the London Basin so subsequent erosion may have removed all evidence of them.

Further geotechnical data from other London (and Hampshire) areas would be most helpful.

Yours faithfully,
PETER G. FOOKES

Imperial College,
London.
16 March, 1966.

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The Secretary,
The Institution of Civil Engineers.

DEAR SIR,

THE STABILITY OF A SLURRY TRENCH IN COHESIONLESS SOILS

by N. Morgenstern and I. Amir-Tahmasseb (*Géotechnique* 15 : 4 : 387–395)

Bentonite slurry density readings were taken during the construction of the cofferdam cut-off wall at the Arrow Dam site, British Columbia, Canada.

The concrete diaphragm cut-off wall has been built in the cofferdam by Icanda Ltd., using their percussion hole and clamming technique. The wall is 2 ft 6 in. thick, has a surface area of 224 000 sq. ft and the maximum depth to bedrock is 170 ft. The cofferdam, approximately 80 ft high, was constructed by end dumping well-graded sands, gravels and cobbles. The river alluvium to bedrock consists of sands, gravels, cobbles, and boulders.

The calcium bentonite slurry had a density at the mixing plant of 1·03 to 1·04 grams/cu. cm. Slurry density readings were taken at different depths from ten excavated panels using a 'Frauteschy' sampling bottle. The in-situ slurry densities ranged from 1·07 to 1·16 grams/cu. cm being about constant with depth. The increase in slurry density from that at the mixing unit, was caused by suspended sand cuttings which ranged from 5% to 15% by weight of the slurry sample.

The length of the panels was approximately 24 ft and depths ranged from 90 to 145 ft. The river water level ranged from 8 to 15 ft below the fill level. No panels collapsed, although minor sloughing was observed in four of the panel walls in the upper 10–15 ft of the excavation.

Figure 1 is a plot of required slurry density versus the relative water level (m) computed from Morgenstern and Amir-Tahmasseb's equation 9, for values of $\phi = 35$, 40, and 45° and soil

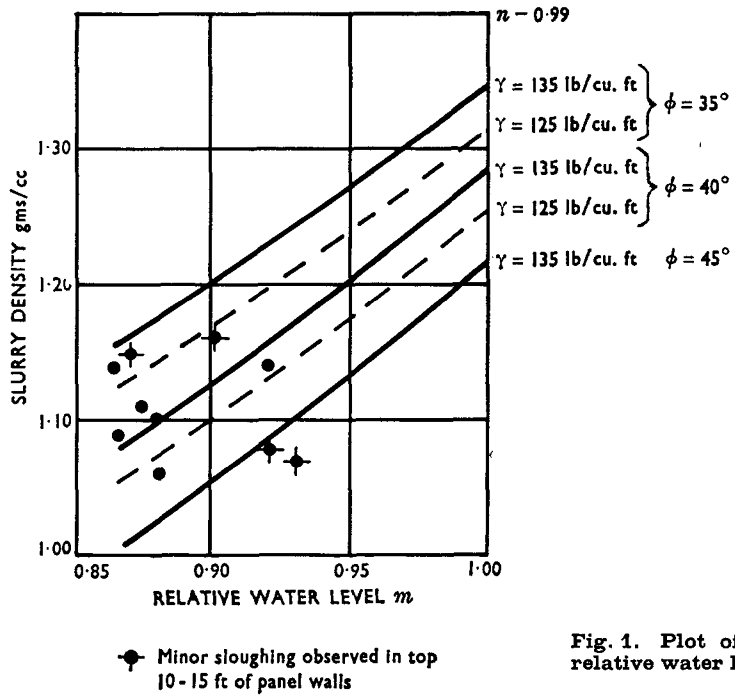

Fig. 1. Plot of required slurry density *vs* relative water level

densities of 125 and 135 lb/cu. ft (2·05 to 2·16 Tonnes/cu. m). The measured slurry densities and the ratio *m* for each panel tested have been plotted on Fig. 1.

The results of these tests support Morgenstern and Amir-Tahmasseb's observation that the slurry density is increased due to suspended soil particles; for the particular case mud densities were increased from 3·5% to 12%. These results do not support the suggestion that hydrostatic forces alone explain the trench stability.

Yours faithfully,
D. J. Bazett and J. W. Gadsby

C.B.A. Engineering Ltd.
4545 Main Street,
Vancouver 10, B.C.,
18 April, 1966.

The Secretary,
The Institution of Civil Engineers,
Dear Sir,

GROUND-WATER FLOW STUDIES BY RESISTANCE NETWORK

As a result of the recently published paper on the use of resistance networks for studying groundwater problems (*Géotechnique* 16:1:53–75) the Authors have found that many users of resistance networks are unaware of the inadequacy of a finite difference network in representing regions in which a rapid change in head occurs. In the Paper the rapid change in the