

## **Study of Tailwater Effect of Scour Downstream Protection Rockfill Weirs<sup>1</sup>**

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### **Abstract**

In this research a laboratory study was carried out to show the tailwater effect of scour downstream protection rockfill weirs. The study includes the measurement of maximum scour depth and length of scour hole downstream the weir. The shape of scour hole was also studied. Three sizes of aggregate diameters (0.7935, 1.111, 1.5875)cm were used as downstream bed protection. One downstream slope (1V : 5H) was tested for all sizes.

Laboratory results of this study showed that there is an inverse relation between scour depth and scour hole length with the ratio between tailwater depth to mean diameter of practical size ( $T_w/d_m$ ). Two empirical equations were obtained; one for the estimation of relative scour depth (Ds) and the second for the estimation of relative length of scour hole (Ls).

**Keywords:** Scour, tailwater, aggregation beds, rockfill weirs.

<sup>1</sup> For the paper in Arabic see pages (29-36).

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