$$d_1 = d_0 + P - L - E - D + R \qquad for \;\; 0 < d_1 < d_{weir}$$

where

d_1 = the current aqueous depth for the day (m)

d_0 = the water depth of the previous day (m)

d_{weir} = weir level (m)

P = daily direct precipitation on water body (m)

L = leakage through sediment (m)

E = daily evaporation of runoff (m)

D = drainage due to weir height changes (m)

R = engineered flow into water body (m)