

STORAGE DAM EVAPORATION CONTROL

CRC Irrigation Futures, National Program for Sustainable Irrigation



Evaporation & Seepage Monitoring

Pressure sensitive transducers (PSTs) can be used to precisely measure water depth and therefore accurately determine the seepage and evaporation losses from water storages.

The seepage of a dam is determined by comparing measured water depth change with evaporation loss estimated using customised software (EvapCalc). The software uses information from an Automatic Weather Station and water temperature to estimate evaporation loss (Based on the Penman-Monteith equation and storage energy balance).

The PST systems used have a stated accuracy of $\pm 0.04\%$ ($\pm 1.4\text{mm}$) over a 3.5m range. The unit measures depth pressure according to the electrical resistivity of a deforming micro-machined silicon crystal. The units are suspended just above the bottom surface of the dam using a rope attached float-weight system.

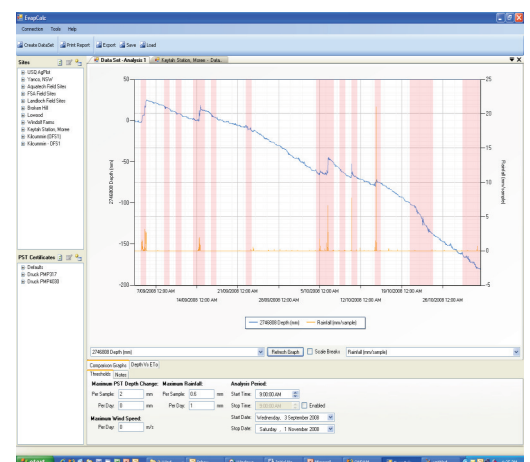


Pressure sensitive transducer (PST)

A datalogger records the average water depth over 15 minute time intervals as well as solar radiation, temperature, wind speed, humidity and rainfall from the AWS.

Measuring systems are available for purchase or lease as an Irrimate™ product.

EvapCalc software is used to manage data and exclude periods of rainfall, inflow and outflow. Statistical methods are used to assist in the estimation of seepage and evaporation losses.



EvapCalc software used for seepage and evaporation estimation

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