Pumping tests are one of the most effective tools for evaluating the hydraulic characteristics of the aquifers such as: hydraulic conductivity, transmissivity, storage coefficient…

PUMPING TEST

Pumping tests consist of pumping a well (control well) at a certain rate and recording the water-level response (drawdown) in the pumping well and in nearby observation wells over a certain time period.

The two most common types of pumping tests are:

- ✓ the constant-rate tests that maintain pumping at the control well over a given time period at one rate
- ✓ the step-drawdown tests where the well is pumped at successively greater rates over short periods of time.

Water levels both in observation wells and pumping well are measured by means of water level transducers. The flow rate is measured through an in-line flow meter.

The water level transducers and the flow meter are connected to the datalogger for real-time monitoring of the test.

APPLICATIONS

Pumping tests have different applications:

- ✓ Wells characteristics:
  - yield
  - performance of production
  - efficiency
- ✓ Hydraulic properties of the aquifer:
  - transmissivity
  - hydraulic conductivity
  - storage coefficient
  - effective porosity

EQUIPMENT

Multichannel datalogger 16 bit

Water level transducers

Range 0-10, 0-20, 0-50 m H_2O

Resolution ± 1 cm

Accuracy ± 0.1% F.S.

Electromagnetic flow meter

Range 0-40 l/min

Resolution 0.1 l/s

Accuracy 0.3% F.S.

Thermometer PT100

Range -50°C to 150°C

Resolution 0.01°C

Accuracy 0.2°C

Accessories

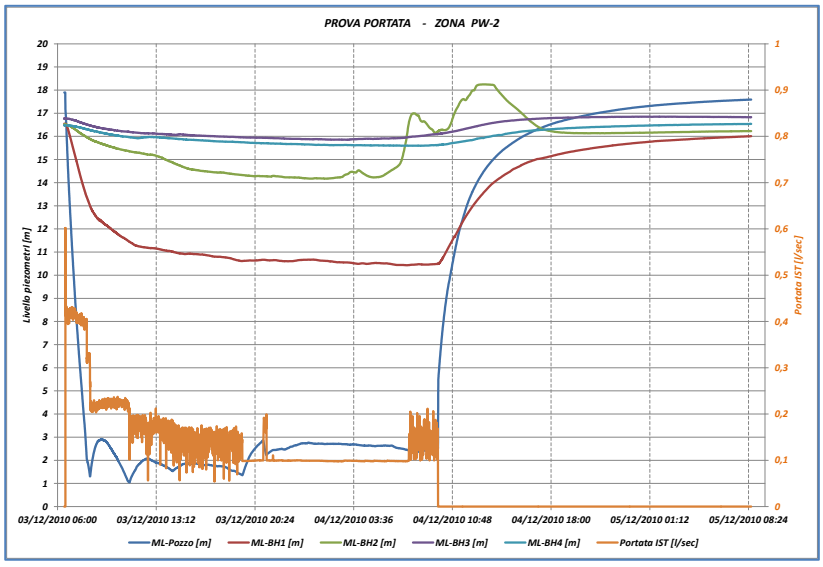
Terminal switch box

Electrical cables

Flow meter

Data acquisition system

DATA PROCESSING



There are several methods for interpreting pump test data according to the types of aquifers.

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