Practical Use of Flexible Liner Transmissivity Profiling Results

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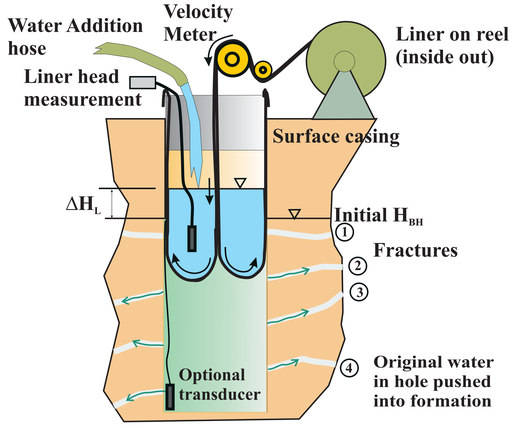
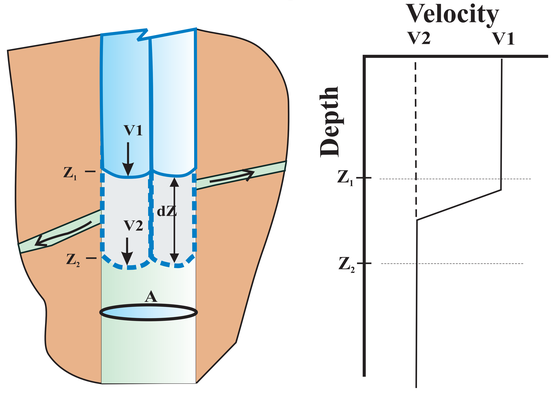
What is a ***FLUTe*** profile? Answer: A map of the transmissivity distribution in a borehole obtained with a liner.

The liner installation



The transmissity calculation

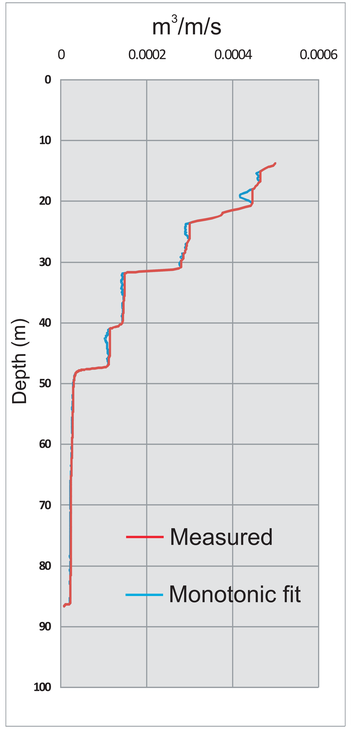


Flow rate into the fracture, $\Delta Q = A(V_1 - V_2)$, where $V_1 > V_2$

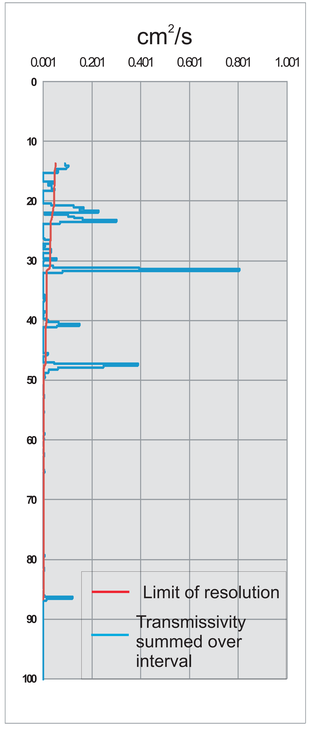
$T = \Delta Q \ln(r_0/r_w)/(2\pi\Delta H_{BH})$ in the interval Z_1 to Z_2

The liner descent rate multiplied by the hole cross-section is the flow rate out of the hole. A change in the liner descent velocity occurs when a flow path is sealed. The change in flow rate is the flow into the flow path (a bed or fracture). That flow rate change over that interval of the hole determines that flow feature's transmissivity.

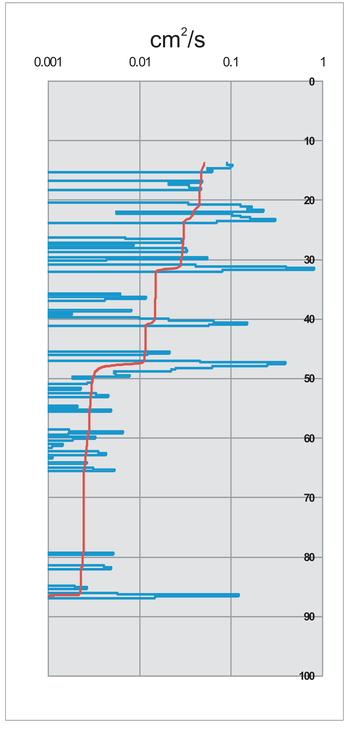
Measured flow rate with liner



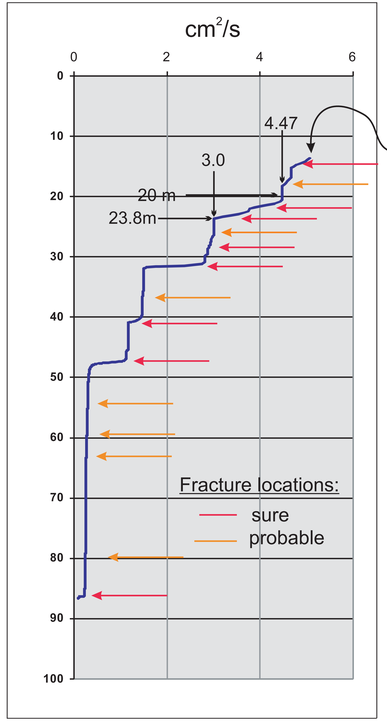
Transmissivity over 0.3m (linear scale)



Transmissivity over 0.3m (log scale)



Total Transmissivity below indicated depth



Using the "total transmissivity" curve:

Transmissivity from 20-23.8 m = 4.47-3.0 cm^2/s = 1.47 cm^2/s

Conductivity = 1.47cm^2/s/3800cm = 3.9e-04 cm/s

Other information:

Total borehole transmissivity 5.06 cm^2/s

Fractured interval from 25.3-31.0 m

Only smaller fractures below 50 m.

Deepest large fracture at 86 m ($Q/\Delta H$=2.1e-06 $m^3/m/s$)

Visit our booth for more information on profiling and other FLUTe methods

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