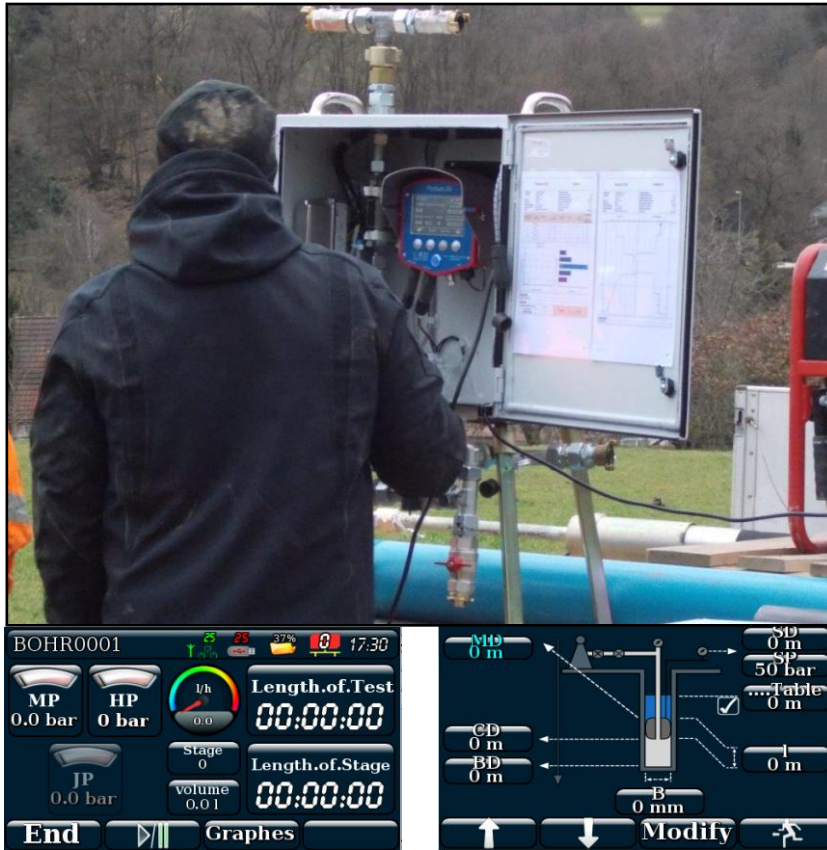




# PocketLIM / MiniLIM 5G - LUGEON

## LUGEON PERMEABILITY TEST DATA ACQUISITION



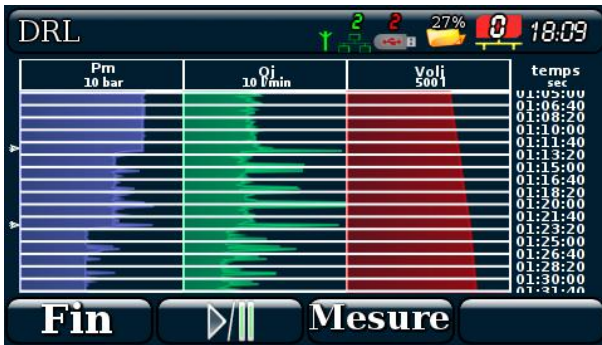
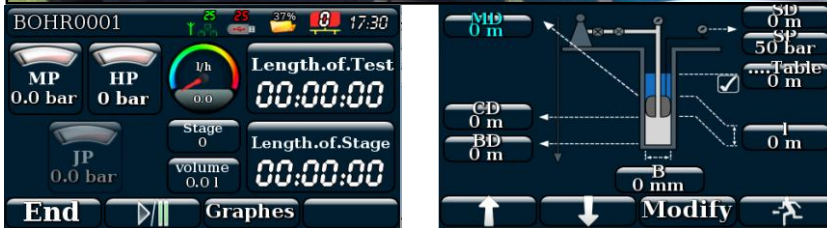
The **Lugeon test** is used to determine the permeability of soils. Done within the borehole in a cavity below a packer, the Lugeon test measures the variation of the water flow at different pressure values.

The LUGEON application of the **PocketLIM & MiniLIM 5G** records versus time every 1, 2, 4 or 8 seconds the pressure, flowrate and volume of the injected water during the **Lugeon test**.

The sensors used by the application are:

- one electromagnetic flowmeter fitted to the water pipe to measure the flow and volume;
- one pressure transducer either fitted to a membrane separator if the capture is done out of the borehole or with an adapted probe connected by cable to a winch if the capture is done at the depth of the test within the borehole .

The graphics of the 3 parameters, pressure, flow and volume are displayed in real time by the **PocketLIM / MiniLIM 5G - LUGEON**.



Site		Forage	
<b>Site00</b>		<b>sbj11/8</b>	
hc 37 m	hb 42 m	Date Debut mar., 05 oct. 2010 18:09:14	
l 1 m	B 101 mm	Date Fin mer., 20 juil. 2011 20:10:19	
hw 5.15 m	hm 36 m	Nom Fichier 50023101005160914L	
pg 10 bar	hg 0.5 m	Operateur	
Position GPS			



Specific probe to measure the Pressure in the cavity below packer within the borehole.



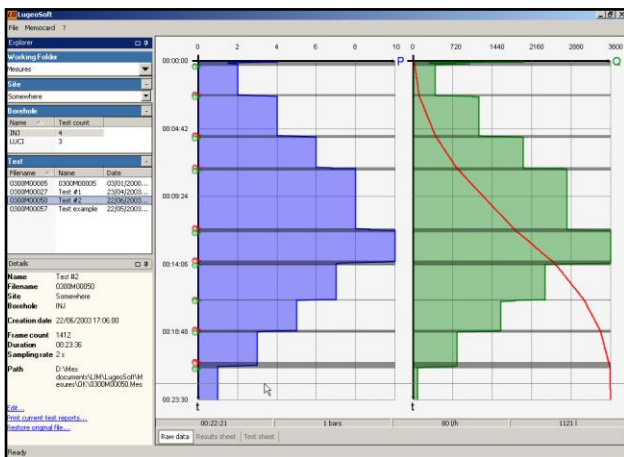
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## LUGEON PERMEABILITY TEST DATA ACQUISITION

The recorded data (".BOR") and graphic (".pdf") files are automatically synchronized in the USB flash drive of the **PocketLIM / MiniLIM 5G**. With **Lim@Mail**, they can also be transferred by mobile internet (3G/4G, Wifi) to the dedicated **GEO-LOG 4** internet server and to email addresses chosen by the operator.

Once downloaded to PC, the recorded Lugeon data is processed by the **LugeoSOFT** software that does the followings:

- Listing of the water flowrates for each value of pressure;
- Drawing of the recorded data and Lugeon curves;
- Calculation of the Lugeon value corresponding to a 1 Mpa pressure;
- Data export to EXCEL compatible TXT files.



### Report

Site	Somewhere 86 RUE DE LA POUDETTE	Depth of the ground water level	10 m
Address	69110 VILLEURBANNE	Depth of the section bottom	20 m
Date	22/06/2003	Depth of the section top	19 m
Borehole	INJ	Section diameter	400 mm
Test Duration	23 min 36 sec	Packer length	100 cm
Operator		Packer pressure	6 bar
File	0300M00050	Depth of the sensor	-1 m
		Soil type	

Measured pressure (MPa)	Duration (hh:mm:ss)	Water level (m)	Volume (l) (start/end)	Flow (l/min)	Pressure drop (MPa)	Adjusted pressure (MPa)	Lugeon
0.2	00:01:58	10	10 32	6,67	0,03	0,28	6,67
0.4	00:02:42	10	35 124	19,95	0,03	0,48	19,95
0.6	00:02:02	10	135 245	33,33	0,03	0,68	33,33
0.8	00:04:00	10	261 569	46,67	0,03	0,88	46,67
1	00:01:58	10	593 787	60	0,03	1,08	60
0.7	00:02:22	10	813 969	40	0,03	0,78	40
0.5	00:02:02	10	974 1062	26,8	0,03	0,58	26,8
0.3	00:02:02	10	1067 1111	13,33	0,03	0,38	13,33
0.1	00:02:12	10	1118 1123	1,33	0,03	0,18	1,33

**Observations**

Test factif

**Results**

1MPa flow	54,67 l/min	<b>Lugeon</b>	<b>54,67</b>
Section length	1 m		

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07/07/2003 10:38:00 - Page 1

