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Oskarshamn site investigation

Hydraulic interference tests, pumping borehole KLX07A

Subarea Laxemar

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December 2007

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Keywords: Site/project, Hydrogeology, Hydraulic tests, Pump tests, Interference tests, Hydraulic parameters, Transmissivity.

This report concerns a study which was conducted for SKB. The conclusions and viewpoints presented in the report are those of the authors and do not necessarily coincide with those of the client.

Data in SKB's database can be changed for different reasons. Minor changes in SKB's database will not necessarily result in a revised report. Data revisions may also be presented as supplements, available at www.skb.se.

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Abstract

Hydraulic interference tests have been performed at the Laxemar area in the active pumping borehole KLX07A in five different sections. During the pumping phase the pressure response in 22 observation boreholes was monitored in up to eight different intervals per borehole, which were separated with packers. A 5 L water sample was taken by SKB at the end of each pumping phase. Theses samples were analysed according to the class 3 level. The tests are part of the general program for site investigations and specifically for the Laxemar subarea. Prior the interference tests, hydraulic injection tests in 100 m and 20 m intervals had been performed /Rahm and Enachescu 2005/. The hydraulic testing programme has the aim to characterise the rock with respect to its hydraulic properties and the interference tests have the purpose to resolve hydraulic connectivity in the fracture network, especially to the selected lineament EW007. Data is subsequently delivered for the site descriptive model.

This report describes the results and primary data evaluation of the interference tests in borehole KLX07A performed between 24th October and 9th of December 2006. The data of the observation boreholes were delivered by SKB.

The main objective of the interference testing was to characterize the rock around the borehole with special respect to connectivity of lineaments. Transient evaluation of the flow and recovery period of the constant rate interference pump tests provided additional information such as transmissivities, flow regimes and hydraulic boundaries.

Sammanfattning

Hydrauliska interferenstester har utförts i Laxemarområdet med pumpning i borrhål KLX07A i fem sektioner. Under pumpningen har tryckresponsen uppmätts i 22 observationshål i upp till åtta sektioner per borrhål med dubbelmanschett. I slutet av varje pumpfas togs av SKB ett 5 liters vattenprov för klass 3 analys. Interferenstesterna är en del av platsundersökningarna och specifikt för Laxemar området. Före interferenstesterna utfördes hydrauliska injektionstester om 100 och 20 m sektioner /Rahm och Enachescu 2005/. Hydraultestprogrammet har som mål att karakterisera berget utifrån dess hydrauliska egenskaper och interferenstesterna har som syfte att undersöka konnektiviteten mellan sprickzoner, särskilt till lineament EW007. Erhållna data utgör sedan indata för den platsspecifika modellen.

Följande rapport redovisar resultaten och primärdata från utvärderingen av interferenstesterna i borrhål KLX07A utförda mellan den 24 oktober till den 9 december 2006. Data från observationshålen levererades av SKB.

Huvudsyftet med interferenstesterna var att karakterisera berget i anslutning till borrhålet med avseende på konnektivitet mellan olika lineament. Transient utvärdering av flödes- och återhämtningsfasen för pumptesterna utförda med konstant flöde vid interferenstesten har givit ytterligare information med avseende på transmissivitet, flödesregim och hydrauliska gränser.

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1 Introduction

A general program for site investigations presenting survey methods has been prepared /SKB 2001/ as well as a site specific program for the investigations in the Laxemar area /SKB 2006/. The hydraulic interference tests form part of the site characterization program in the work breakdown structure of the execution program /SKB 2002/.

Hydraulic interference tests (pumping tests) have been performed in borehole KLX07A in five different sections with section lengths of 45 m, 90 m and 120 m. Monitoring of pressure response was carried out by SKB in 22 additional boreholes (see Figure 1-1), monitoring data were delivered by SKB for further analyses.

Measurements were carried out between 24th October and 9th of December 2005 following the methodologies described in SKB MD 321.003 (pump tests), SKB MD 330.003 (interference tests), the activity plan AP PS 400-05-045 (SKB internal controlling documents) and the Supplement belonging to this Activity Plan specifying in detail the interference tests campaign. Data and results were delivered to the SKB site characterization database SICADA.

The hydraulic testing programme has the aim to characterise the rock with respect to its hydraulic properties of the fractured zones and rock mass between them. This report describes the results and primary data evaluation of the interference tests in borehole KLX07A. The commission was conducted by Golder Associates AB and Golder Associates GmbH.

The work was carried out in accordance with activity plan AP PS 400-05-045 and its Supplement. In Table 1-1 SKB's internal controlling documents for performing this activity are listed. Both activity plan and method descriptions are SKB's internal controlling documents. Measurements were conducted utilising SKB's custom made testing equipment PSS2.

Table 1-1. KB internal controlling documents for the performance of the activity.

Activity plan	Number	Version
Hydraulic pumping and injection tests in borehole KLX07A	AP PS 400-05-045	1.0
Interference tests in KLX07A	Supplement to Activityplan AP PS 400-05-045	2005-09-12
Method descriptions	Number	Version
Analysis of injection and single-hole pumping tests	SKB MD 320.004e	1.0
Hydraulic injection tests	SKB MD 323.001	1.0
Metodbeskrivning för interferenstester	SKB MD 330.003	1.0
Metodbeskrivning för hydrauliska enhålspumptester	SKB MD 321.003	1.0
Instruktion för rengöring av borrhålsutrustning och viss markbaserad utrustning	SKB MD 600.004	1.0
Instruktion för längdkalibrering vid undersökningar i kärnborrhål	SKB MD 620.010	1.0
Allmäna ordning-, skydds- och miljöregler för platsundersökningar Oskarshamn	SKB SDPO-003	1.0
Miljökontrollprogram Platsundersökningar	SKB SDP-301	1.0
Hantering av primärdata vid platsundersökningar	SKB SDP-508	1.0

The pumping borehole KLX07A is situated in the Laxemar area approximately 2 km north-west of the nuclear power plant of Simpevarp, Figure 1-1. The borehole was drilled from November 2004 to May 2005 at 844.73 m length with an inner diameter of 76 mm and an inclination of –60.04°. The upper 11.80 m is cased with large diameter telescopic casing ranging from diameter (outer diameter) 208 mm–323 mm.

Most of the observation boreholes are located along the lineament EW007, which is located appr. 300 m south of the pumping hole and runs from west to east.

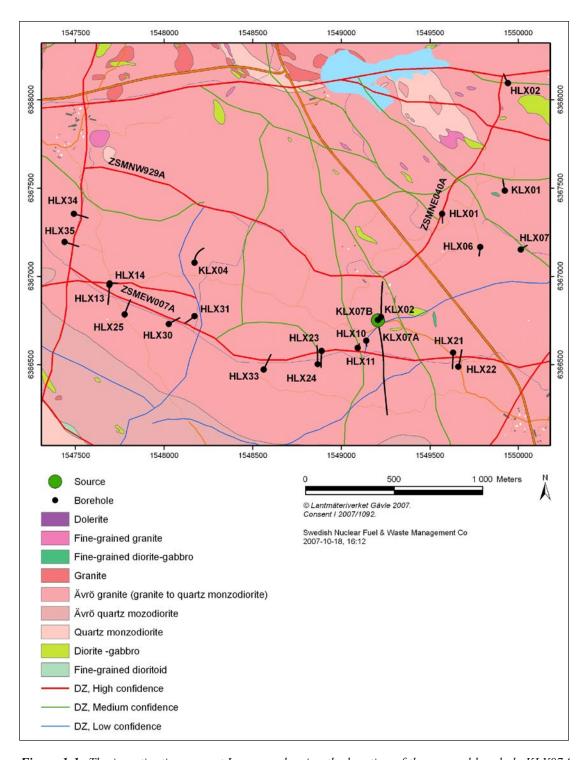


Figure 1-1. The investigation area at Laxemar showing the location of the pumped borehole KLX07A (green circle) and all observation holes.

2 Objective

The major objective of the performed testing program was the interference testing in order to resolve the hydraulic connectivity of the fracture network and to deliver data for the structural and hydrogeological modelling of the investigation area of Laxemar.

Further objective of the pumping interference tests was to take water samples after each test. The water samples were taken and delivered by SKB to the chemistry laboratory at Äspö for class 3 analysis. In addition, both phases of each pump test (perturbation and recovery) were analysed to provide more information to characterize the rock around the borehole and the hydraulic properties of the tested lineament EW007.

3 Scope of work

The scope of work consisted of preparation of the PSS2 tool which included cleaning of the pump and the pump basket, calibration and functional checks and pumping tests in five different sections (45 m, 90 m and 120 m section length). The cleaning of the down-hole tools was done during the foregoing hydraulic injection tests (20th August – 1st September). The analysis and reporting for this report contains the measurements in KLX07A, as well as the data of the observation boreholes, recorded, collected and delivered by SKB.

Preparation for testing mainly consists of functions checks of the equipment to be used, the PSS2 tool. Calibration checks and function checks were documented in the daily log and/or relevant documents.

The following pump tests were performed between 24th October and 9th of December 2005 (Table 3-1).

3.1 Conditions that possibly affect the observed responses besides responses due to the source intended to study

Besides the response due to the pumping in KLX07A (source) the observed responses were influenced by earth-tidal effects.

3.2 Pumped borehole

Technical data of the borehole KLX07A is shown in Table 3-2. The reference point in the borehole is the centre of top of casing (ToC), given as Elevation in the table below. The Swedish National coordinate system (RT90) is used in the x-y direction and RHB70 in the z-direction. Northing and Easting refer to the top of the boreholes at the ground surface. Information to the observed boreholes is not presented.

Table 3-1. Performed test programme.

Borehole	Priority	Secup [mbToC]	Seclow [mbToC]	Seclen [m]	Duration Pumping [h]	Duration Recovery [h]
KLX07A	1	747.0	792.0	45	65.7	91.0
KLX07A	2	610.0	655.0	45	72.5	116.9
KLX07A	1	335.0	455.0	120	80.4	97.6
KLX07A	1	193.0	313.0	120	67.8	124.9
KLX07A	1	103.2	193.2	90	72.8	92.5
Total:					359.2	522.9

Table 3-2. Information about KLX07A (from SICADA 2005-11-07 15:39:46).

Title	Value				
Old idcode name(s):	KLX07				
Comment:	No comment	exists			
Borehole length (m):	844.73				
Reference level:	TOC				
Drilling Period(s):	From Date 2004-11-23 2005-01-06	To Date 2004-12-07 2005-05-04	Secup (m) 0.000 100.460	Seclow (m) 100.460 844.730	Drilling Type Percussion drilling Core drilling
Starting point coordinate: (centerpoint of TOC)	Length (m) 0.000	Northing (m) 6366752.094	Easting (m) 1549206.855	Elevation (m.a.s.l.) 18.470	Coord System RT90-RHB70 Measured
Angles:	Length (m) 0.000	Bearing 174.179	Inclination (– = 0 –60.038	down)	RT90-RHB70 Measured
Borehole diameter:	Secup (m) 0.000 8.900 11.800 100.300 100.400 100.460 101.980	Seclow (m) 8.900 11.800 100.300 100.400 100.460 101.980 844.730	Hole Diam (m) 0.343 0.252 0.198 0.165 0.165 0.086 0.076		
Core diameter:	Secup (m) 100.460 204.670 210.020 212.060 217.650 226.850 232.450 238.570 241.090 407.060 413.150 416.050 426.850 431.060 432.550 447.700 468.370 469.040 552.630	Seclow (m) 204.670 210.020 212.060 217.650 226.850 232.450 238.570 241.090 407.060 413.150 416.050 426.850 431.060 432.550 447.700 468.370 486.040 552.630 844.730	Core Diam (m) 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045 0.050 0.045		
Casing diameter:	Secup (m) 0.000 0.000	Seclow (m) 11.800 8.900	Case In (m) 0.200 0.310	Case Out (m) 0.208 0.323	
Grove milling:	Length (m) 110.000 150.000 200.000 250.000 300.000 349.000 450.000 550.000 600.000 650.000 750.000 800.000	Trace detectable YES			

3.3 Tests

The tests performed in KLX07A are listed in Table 3-4. They were conducted according to the Activity Plan AP PS 400-05-045 (SKB internal document) and the Supplement. All tests were conducted as constant rate pump tests. Interference tests were carried out with additional installation of pressure transducers in selected monitoring boreholes. Groundwater data of further monitoring boreholes were provided by SKB.

At the end of each test, a 5 L water sample was taken by SKB and submitted to the SKB Äspö Laboratory for analysis.

Observations were made in the following boreholes:

Table 3-3. Observation boreholes.

Bh ID	No of Intervals monitored	Log time [s]	Bh ID	No of Intervals monitored	Log time [s]	Bh ID	No of Intervals monitored	Log time [s]
KLX01	4	60	HLX10	1	10	HLX25	2	60
KLX02	8	10	HLX11	2	60	HLX30	2	60
KLX04	8	60	HLX13	1	60	HLX31	1	60
KLX07B	3	10	HLX14	1	60	HLX33	2	60
HLX01	1	60	HLX21	2	60	HLX34	1	60
HLX02	1	60	HLX22	2	60	HLX35	2	60
HLX06	1	60	HLX23	2	60			
HLX07	1	60	HLX24	2	60			

Table 3-4. Tests performed.

Bh ID	Test section (mbToC)	Test type*	Test no	Test start Date, time (yyyy-mm-dd hh:mm:ss)	Test stop Date, time (yyyy-mm-dd hh:mm:ss)
KLX07A	103.2–193.2	1B	1	2005-10-28 09:51:38	2005-11-03 15:53:11
KLX07A	335.0–455.0	1B	1	2005-11-04 21:35:50	2005-11-12 08:36:30
KLX07A	193.0–313.0	1B	1	2005-11-12 18:54:39	2005-11-20 20:17:29
KLX07A	747.0–792.0	1B	1	2005-11-22 21:14:52	2005-11-29 10:56:05
KLX07A	610.0–655.0	1B	1	2005-11-30 10:14:30	2005-12-08 08:54:40

^{* 1}B: pumping test-submersible pump.

3.4 Control of equipment

Control of equipment was performed. The basis for equipment handling is described in thethe SKB internal controlling document "Mätssystembeskrivning" SKB MD 345.101-123 which is composed of two parts 1) management description, 2) drawings and technical documents of the modified PSS2 tool.

Function checks were performed before and during the tests. Among these pressure sensors were checked at ground level and while running in the hole calculated to the static head. Temperature was checked at ground level and while running in.

Any malfunction was recorded, and measures were taken accordingly for proper operation. Approval was made according to SKB site manager, or Quality plan and the "Mätssystembeskrivning".

4 Equipment

4.1 Description of equipment

The equipment called PSS2 (Pipe String System 2) is a highly integrated tool for testing boreholes at great depth (see conceptual drawing in the next figure). The system is built inside a container suitable for testing at any weather. Briefly, the components consists of a hydraulic rig, down-hole equipment including packers, pressure gauges, shut-in tool and level indicator, racks for pump, gauge carriers, breakpins, etc shelfs and drawers for tools and spare parts.

There are three spools for a multi-signal cable, a test valve hose and a packer inflation hose. There is a water tank for injection purposes, pressure vessels for injection of packers, to open test valve and for low flow injection. The PSS2 has been upgraded with a computerized flow regulation system. The office part of the container consists of a computer, regulation valves for the nitrogen system, a 24 V back-up system in case of power shut-offs and a flow regulation board.

PSS2 is documented in photographs 1–8.

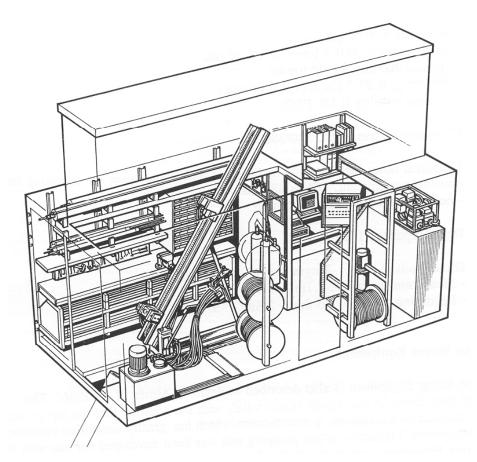


Figure 4-1. A view of the layout and equipment of PSS2.



Photo 1. Hydraulic rig.

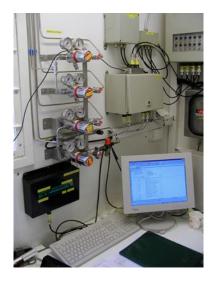


Photo 3. Computer room, displays and gas regulators.



Photo 2. Rack for pump, down-hole equipment, workbench and drawers for tools.



Photo 4. Pressure vessels for test valve, packers and injection.



Photo 5. Positioner, bottom end of down-in-hole string.



Photo 6. Packer and gauge carrier.



Photo 7. Top of test string with shunt valve and nylon line down to the pump basket.

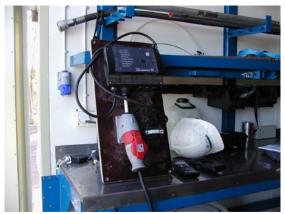


Photo 8. Control board of the pump with remote control.

The down-hole equipment consists from bottom to top of the following equipment:

- Level indicator SS 630 mm pipe with OD 73 mm with 3 plastic wheels connected to a Hallswitch.
- Gauge carrier SS 1.5 m carrying bottom section pressure transducer and connections from positioner.
- Lower packer SS and PUR 1.5 m with OD 72 mm, stiff ends, tightening length 1.0 m, maximum pressure 6.5 MPa, working pressure 1.6 MPa.
- Gauge carrier with breakpin SS 1.75 m carrying test section pressure transducer, temperature sensor and connections for sensors below. Breakpin with maximum load of 47.3 (± 1.0) kN. The gauge carrier is covered by split pipes and connected to a stone catcher on the top.
- Pop joint SS 1.0 or 0.5 m with OD 33 mm and ID 21 mm, double O-ring fittings, trapezoid thread, friction loss of 3 kPa/m at 50 L/min.
- Pipe string SS 3.0 m with OD 33 mm and ID 21 mm, double O-ring fittings, trapezoid thread, friction loss of 3 kPa/m at 50 L/min.
- Contact carrier SS 1.0 m carrying connections for sensors below the test section.
- Upper packer SS and PUR 1.5 m with OD 72 mm, fixed ends, seal length 1.0 m, maximum pressure 6.5 MPa, working pressure 1.6 MPa
- Breakpin SS 250 mm with OD 33.7 mm. Maximum load of 47.3 (± 1.0) kN.
- Gauge carrier SS 1.5 m carrying top section pressure transducer, connections from sensors below. Flow pipe is double bent at both ends to give room for sensor equipment. The pipe gauge carrier is covered by split pipes.
- Shut-in tool (test valve) SS 1.0 m with a OD of 48 mm, Teflon coated valve piston, friction loss of 11 kPa at 10 L/min (260 kPa–50 L/min). Working pressure 2.8–4.0 MPa. Breakpipe with maximum load of 47.3 (± 1.0) kN. The shut-in tool is covered by split pipes and connected to a stone catcher on the top.

The 3"-pump is placed in a pump basket and connected to the test string at about 50–90 m below ToC. The pumping frequency of the pump is set with a remote control on surface. The flow can be regulated with a shunt-valve on top of the test string, a nylon line connects the valve with the pump basket, so that the water can circulate and the pump cannot run out of water (photo 7).

The tool scheme is presented in Figure 4-2.

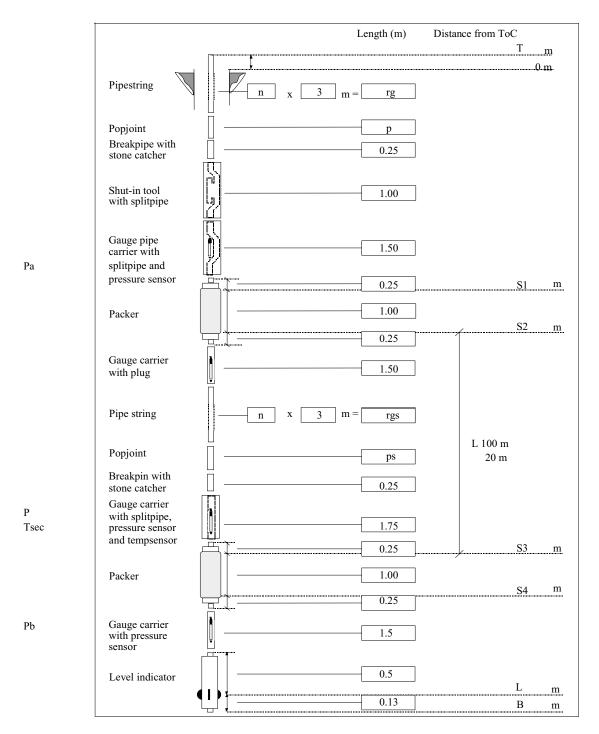


Figure 4-2. Schematic drawing of the down-hole equipment in the PSS2 system.

4.2 Sensors

Table 4-1. Technical specifications of sensors.

Keyword	Sensor	Name	Value/range	Unit	Comments
$P_{sec,a,b}$	Pressure	Druck PTX 162-1464abs	9–30 4–20 0–13.5 ± 0.1	VDC mA MPa % of FS	
$T_{sec,surf,air}$	Temperature	BGI	18–24 4–20 0–32 ± 0.1	VDC mA °C °C	
Q_{big}	Flow	Micro motion Elite sensor	0–100 ± 0.1	kg/min %	Massflow
Q_{small}	Flow	Micro motion Elite sensor	0–1.8 ± 0.1	kg/min %	Massflow
p _{air}	Pressure	Druck PTX 630	9–30 4–20 0–120 ± 0.1	VDC mA KPa % of FS	
p_{pack}	Pressure	Druck PTX 630	9–30 4–20 0–4 ± 0.1	VDC mA MPa % of FS	
$p_{\text{in,out}}$	Pressure	Druck PTX 1400	9–28 4–20 0–2.5 ± 0.15	VDC mA MPa % of FS	
L	Level Indicator				Length correction

Table 4-2. Sensor positions and wellbore storage (WBS) controlling factors.

Borehole information			Sensors I		Equipmen	Equipment affecting WBS coefficient		
ID	Test section (m)	Test no	Type	Position (m b ToC)	Position	Function	Outer diameter (mm)	Net water volume in test section (m³)
KLX07A	103.20–193.20	1	pa	101.31	Test	Signal cable	9.1	
			p T	192.57 section 192.40 195.21 196.45	Pump string	33	0.323	
			p _b L		Packer line	6		
KLX07A	193.00–313.00	1	pa	191.11	Test section	Signal cable	9.1	
			p T	312.37 312.20		Pump string	33	0.430
			p _b L			Packer line	6	
KLX07A	610.00-655.00	1	pa	608.11	Test	Signal cable	9.1	
			p T	654.37 section 654.20 657.01 658.25	section	Pump string	33	0.161
			p _b L			Packer line	6	

4.3 Data acquisition system

The data acquisition system in the PSS2 container contains a stationary PC with the software Orchestrator, pump- and injection test parameters such as pressure, temperature and flow are monitored and sensor data collected. A second laptop PC is connected to the stationary PC through a network containing evaluation software, Flowdim. While testing, data from previously tested section is converted with IPPlot and entered in Flowdim for evaluation.

The data acquisition system starts and stops the test automatically or can be disengaged for manual operation of magnetic and regulation valves within the injection/pumping system. The flow regulation board is used for differential pressure and valve settings prior testing and for monitoring valves during actual test. An outline of the data acquisition system is outlined in Figure 4-3.

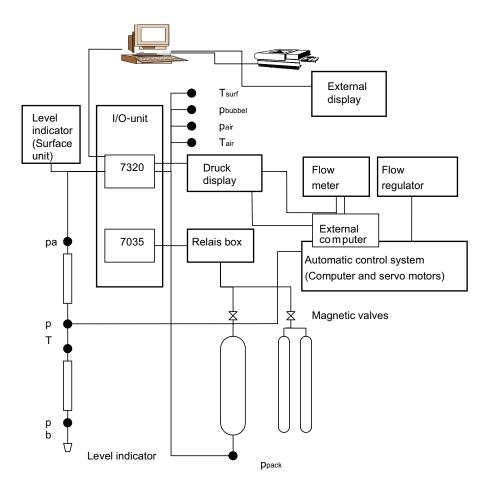


Figure 4-3. Schematic drawing of the data acquisition system and the flow regulation control system in PSS2.

5 Execution

5.1 Preparations

Due to the prior conducted hydraulic injection tests, the container was already placed. Cables, hoses and down-hole equipment (except pump and pump basket) have already been cleaned. Calibration constants were already entered and function checks were made. Before starting the interference tests, the pump and the pump basket were cleaned and disinfected with alcohol.

5.2 Length correction

By running in with the test tool, a level indicator is incorporated at the bottom of the tool. The level indicator is able to record groves milled into the borehole wall. The depths of this groves are given by SKB in the activity plan (see Table 3-2) and the measured depth is counter checked against the number/length of the tubes build in. The achieved correction value, based on linear interpolation between the reference marks, is used to adjust the location of the packers for the test sections to avoid wrong placements and minimize elongation effects of the test string.

5.3 Execution of tests/measurements

5.3.1 Test principle

Pump tests

The pump tests were conducted as constant flow rate tests (CRw phase) followed by a pressure recovery period (CRwr phase). The intention was to achieve a drawdown as high as possible, which is limited by several factors like flow capacity of the valves at the regulation unit, maximum flow rate and depth of the pump, head loss due to friction inside the tubing, etc. According to the Activity Plan, the pump phase should have lasted 3 days and the recovery phase 4 days. The actual durations of the phases are shown in Table 3-1.

Observation wells

For evaluation as interference tests, several boreholes were used to monitor the pressure change in different intervals. Recording and data collection was done by SKB. SKB delivered the data as ASCII files (mio-format). An overview of the monitored boreholes and their intervals is given in Table 3-3.

5.3.2 Test procedure

A test cycle includes the following phases: 1) Transfer of down-hole equipment to the next section. 2) Packer inflation. 3) Pressure stabilisation. 4) Constant rate withdrawal. 6) Pressure recovery. 7) Packer deflation. The pump tests in KLX07A have been carried out by applying a constant rate withdrawal with a drawdown as high as possible. The flow rates and resulting drawdowns are summarised in Table 5-1.

Table 5-1. Flow rate and drawdown of pumping tests.

Bh ID	Section [mbToC]	Flow rate [L/min]	Drawdown* [kPa]
KLX07A	747.0-792.0	20.9	160
KLX07A	610.0-655.0	17.6	309
KLX07A	335.0-455.0	18.1	114
KLX07A	193.0-313.0	36.4	60
KLX07A	103.2–193.2	40.8	46

^{*} Difference between pressure just before start and immediately before stop of pumping.

Before start of the pumping tests, approximately stable pressure conditions prevailed in the test section. After the perturbation period, the pressure recovery in the section was measured. Tidal effects were observed as disturbances of the pressure responses, no major rainfall happened during performance of the pump tests which may have disturbed the measurements.

The extracted water was collected in tanks, which were removed by SKB and discharged into the sea

5.4 Data handling

Pump tests

The data handling followed several stages. The data acquisition software (Orchestrator) produced an ASCII raw data file (*.ht2) which contains the data in voltage and milliampere format plus calibration coefficients. The *.ht2 files were processed to *.dat files using the SKB program called IPPlot. These files contain the time, pressure, flow rate and temperature data. The *.dat files were synthesised in Excel to a *.xls file for plotting purposes. Finally, the test data to be delivered to SKB were exported from Excel in *.csv format. These files were also used for the subsequent test analysis.

Observation wells

SKB was responsible for recording and collecting the data of the observation boreholes. The sample rate in those boreholes was 1 minute, except for KLX02, KLX07B and HLX10 where it was 10 seconds due to their position close to KLX07A. SKB delivered the ASCII data in mioformat. These files were imported and processed to Excel for further evaluation and analysis.

5.5 Analyses and interpretation of the pump tests

5.5.1 Analysis software

The pump tests were analysed using a type curve matching method. The analysis was performed using Golder's test analysis program FlowDim. FlowDim is an interactive analysis environment allowing the user to interpret constant pressure, constant rate and slug/pulse tests in source as well as observation boreholes. The program allows the calculation of type-curves for homogeneous, dual porosity and composite flow models in variable flow geometries from linear to spherical.

5.5.2 Analysis approach

Constant rate and pressure recovery tests are analysed using the method described by /Gringarten 1986/ and /Bourdet et al. 1989/ by using type curve derivatives calculated for different flow models.

5.5.3 Analysis methodology

Each of the relevant test phases is subsequently analyzed using the following steps:

- Identification of the flow model by evaluation of the derivative on the log-log diagnostic
 plot. Initial estimates of the model parameters are obtained by conventional straight-line
 analysis.
- Superposition type curve matching in log-log coordinates. A non-linear regression algorithm is used to provide optimized model parameters in the latter stages.
- Non-linear regression in semi-log coordinates (superposition HORNER plot; /Horner 1951/). In this stage of the analysis, the static formation pressure is selected for regression.

The test analysis methodology is best explained in /Horne 1990/.

5.5.4 Correlation between storativity and skin factor

For the analysis of the conducted hydraulic tests below 100 m depth a storativity of $1 \cdot 10^{-6}$ is assumed (SKB MD 320.004e). Based on this assumption the skin will be calculated. In the following the correlation between storativity and skin for the relevant test phases will be explained in greater detail.

Pump and recovery phase (CRw and CRwr)

The wellbore storage coefficient (C) is determined by matching the early time data with the corresponding type curve. The derived C-value is introduced in the equation of the type curve parameter:

$$(C_D e^{2\xi})_M = \frac{C \rho g}{2\pi r_{...}^2 S} e^{2\xi}$$

The equation above has two unknowns, the storativity (S) and the skin factor (ξ) which expresses the fact that for the case of constant rate and pressure recovery tests the storativity and the skin factor are 100% correlated. Therefore, the equation can only be either solved for skin by assuming that the storativity is known or solved for storativity by assuming the skin as known.

5.5.5 Steady state analysis

In addition to the type curve analysis, an interpretation based on the assumption of stationary conditions was performed as described by /Moye 1967/.

5.5.6 Flow models used for analysis

The flow models used in analysis were derived from the shape of the pressure derivative calculated with respect to log time and plotted in log-log coordinates.

In three cases a radial two shell composite flow model was used. The other test phases were analysed using an infinite acting radial flow model.

If there were different flow models matching the data in comparable quality, the simplest model was preferred.

The flow dimension displayed by the test can be diagnosed from the slope of the pressure derivative. A slope of 0.5 indicates linear flow, a slope of 0 (horizontal derivative) indicates radial flow and a slope of –0.5 indicates spherical flow. The flow dimension diagnosis was commented for each of the tests. All tests were analysed using a flow dimension of two (radial flow).

5.5.7 Calculation of the static formation pressure and equivalent freshwater head

The static formation pressure (p*) measured at transducer depth, was derived from the pressure recovery (CRwr) following the constant pressure injection phase by using:

- (1) straight line extrapolation in cases infinite acting radial flow (IARF) occurred,
- (2) type curve extrapolation in cases infinite acting radial flow (IARF) is unclear or was not reached.

The equivalent freshwater head (expressed in meters above sea level) was calculated from the extrapolated static formation pressure (p*), corrected for athmospheric pressure measured by the surface gauge and corrected for the vertical depth considering the inclination of the borehole, by assuming a water density of 1,000 kg/m³ (freshwater). The equivalent freshwater head is the static water level an individual test interval would show if isolated and connected to the surface by tubing full of freshwater. Figure 5-1 shows the methodology schematically.

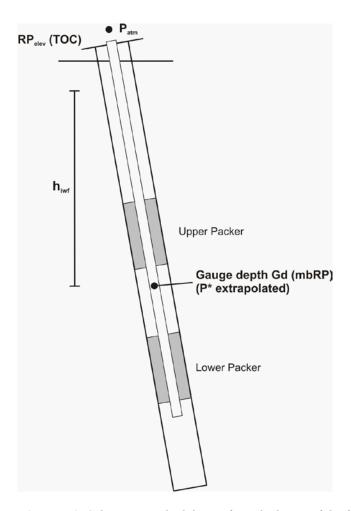


Figure 5-1. Schematic methodologies for calculation of the freshwater head.

The freshwater head in meters above sea level is calculated as following:

$$head = \frac{(p * - p_{atm})}{\rho \cdot g}$$

which is the p* value expressed in a water column of freshwater.

With consideration of the elevation of the reference point (RP) and the gauge depth (Gd), the freshwater head h_{iwf} is:

$$h_{iwf} = RP_{elev} - Gd + \frac{(p * - p_{atm})}{\rho \cdot g}$$

5.5.8 Derivation of the recommended transmissivity and the confidence range

In all cases both test phases were analysed (CRw and CRwr). The parameter sets (i.e. transmissivities) derived from the individual analyses of a specific test usually differ. In the case when the differences are small the recommended transmissivity value is chosen from the test phase that shows the best data and derivative quality, which is most of the cases at the CRwr phase. In cases when a composite flow model was deemed to be most representative for the hydraulic behaviour of the specific test section, than the most representative zone transmissivity was selected as recommended value.

The confidence range of the transmissivity was derived using expert judgement. Factors considered were the range of transmissivities derived from the individual analyses of the test as well as additional sources of uncertainty such as noise in the flow rate measurement, numeric effects in the calculation of the derivative or possible errors in the measurement of the wellbore storage coefficient. No statistical calculations were performed to derive the confidence range of transmissivity.

5.5.9 Calculation of the radius of the inner zone

The radius of influence was calculated as follows:

$$ri = 1.89 * \sqrt{\frac{T_{s1}}{S_T} * t_2}$$
 [m]

 T_{s1} recommended inner zone transmissivity of the recovery phase [m²/s]

t₂ time when hydraulic formation properties changes [s]

S_T for the calculation of the ri the storage coefficient (S) is estimated from the transmissivity /Rhen 2005/:

$$S_T = 0.007 * T_T^{0.5} [-]$$

5.6 Analysis and interpretation of the reponse in the observation holes

In 22 boreholes with a total of 50 sections (Table 3-3) the responses were monitored during the pumping tests in KLX07A. Those data were analysed according to the methodology description (SKB MD 330.003) to derive hydraulic connectivity parameters and by additional instructions from SKB (October 2006). Furthermore the data of the observation holes were analysed using a type curve matching method with Golder's test analysis program FlowDim.

5.6.1 Hydraulic connectivity parameters

Calculation of the Indices

For the interference test analysis, the data of the pumping hole and the observation holes were compared. Therefore both data sets were plotted in one graph to decide if the observation borehole shows a response, which is related to the pumping. In case of a response in the observation sections due to pumping in KLX07A, the response time (dt_L) and the maximum drawdown (s_p) in these sections were calculated. The 3D distance between the point of application in the pumping borehole and the observation borehole (r_s) was provided by SKB. These parameters combined with the pumping flow rate (Q_p) are the variables used to calculate the indices, which characterize the hydraulic connectivity between the pumping and the observed section. The parameters and the calculated hydraulic connectivity parameters are shown in the tables in Chapter 7 and Appendix 6. The indices are calculated as follows:

Index 1:

 $r_s^2/dt_L = \text{normalised distance } r_s \text{ with respect to the response time } [\text{m}^2/\text{s}],$

Index 2:

 s_p/Q_p = normalised drawdown with respect to the pumping rate [s/m²].

Additionally, a third index was calculated including drawdown and distance. This index is calculated as follows:

Index 2 new:

 $(s_p/Q_p) \cdot \ln(r_s/r_0)$ $r_0 = 1$ and for the pumped borehole $r_s = e^1$ (fictive borehole radius of 2.718).

The classification based on the indices is given as follows:

Index 1 (r_s^2/dt_L)		Index 2 (s_p/Q_p)		code
$r_s^2/dt_L > 100 \text{ m}^2/\text{s}$	Excellent	$s_p/Q_p > 1 \cdot 10^5 \text{ s/m}^2$	Excellent	
$10 < r_s^2/dt_L \le 100 \ m^2/s$	High	$3\!\cdot\! 10^4 \!< s_p\!/Q_p \!\le 1\!\cdot\! 10^5\; s/m^2$	High	
$1 < r_s^2/dt_L \le 10 \text{ m}^2/\text{s}$	Medium	$1\!\cdot\! 10^4 \le s_p/Q_p \le 3\!\cdot\! 10^4\; s/m^2$	Medium	
$0.1 < r_s^2/dt_L \le 1 \text{ m}^2/\text{s}$	Low	$s_p/Q_p \leq 1\!\cdot\! 10^4~\text{s/m}^2$	Low	
		$s_p < 0.1 \text{ m}$	No response	

Index 2 new $(s_p/Q_p) \cdot \ln(r_s/r_0)$

$$\begin{split} & (s_p/Q_p) \cdot \ln(r_s/r_0) > 5 \cdot 10^5 \text{ s/m}^2 & \text{Excellent} \\ & 5 \cdot 10^4 < (s_p/Q_p) \cdot \ln(r_s/r_0) \le 5 \cdot 10^5 \text{ s/m}^2 & \text{High} \\ & 5 \cdot 10^3 < (s_p/Q_p) \cdot \ln(r_s/r_0) \le 5 \cdot 10^4 \text{ s/m}^2 & \text{Medium} \\ & 5 \cdot 10^2 < (s_p/Q_p) \cdot \ln(r_s/r_0) \le 5 \cdot 10^3 \text{ s/m}^2 & \text{Low} \\ & sp < 0.1 \text{ m} & \text{No response} \end{split}$$



Calculated response indexes are given in Tables 7-2 to 7-4 and 8-3.

Derivation of the indices and limitations

To evaluate the hydraulic connectivity between the active and the observed section, the draw-down in the observation section (s_p) caused by pumping in the active section and the response time after start of pumping (dt_I) is needed.

To get these two values the data of both sections are plotted in one graph. The time, the observation hole needed to react to the pumping in KLX07A with a drawdown of at least 0.01 m and the amount of drawdown at the end of the pumping were taken out of the graph. Often it is not really clear if the section responds to the pumping or if the drawdown is based on natural processes exclusively. In unclear cases, the data sets were regarded in total to better differentiate between those effects. By looking at the pressure response of the days before and after the pumping phase, it is easier to distinguish between natural fluctuations and those induced by pumping. Furthermore it should be pointed out, that some of the responses could be caused by the drawdown in the section above or below of the same observation borehole.

All observation data are influenced by natural fluctuations of the groundwater level such as tidal effects. The pressure changes due to tidal effects are different for the observation boreholes and ranges between 0.03 m (e.g. HLX07) and 0.18 m (KLX02). The amplitudes of these tidal effects differ from borehole to borehole and between the different sections for each borehole. Regarding the deep boreholes KLX01, KLX02 and KLX04, a correlation between the depth of the section and the amplitude could be derived. The deeper sections show a larger pressure difference between high tide and low tide. In case of the performed pump tests in KLX07A, only tidal effects were observed as natural fluctuations.

The pressure changes in the observation sections generated by the pumping are often very marginal. In general, it is a combination of natural processes and the pumping in KLX07A producing the pressure changes in the monitored sections. If there is a reaction, it shows – in most of the cases – not a sharp but a smooth transition from undisturbed to disturbed (by pumping) behaviour, which makes it more difficult to determine the response time exactly. If neither start time nor stop time of pumping can provide reliable data for the response time Index 1 was not calculated. The second difficulty resulting out of the overlap of natural effects and those caused by the pumping is to determine the drawdown. In Figure 5-2, which shows the pressure in KLX07A, section 335.00–455.00 m, and the response in KLX02_6, the above mentioned uncertainties are shown.

The Figure 5-2 below explains the drawdown was calculated when the natural fluctuations preponderate the effects of pumping. In this example, the natural fluctuations are much larger than the influence of the pumping phase. Therefore, the pressure minima in the vicinity of start and stop of pumping were taken and the pressure difference was calculated (p2-p1), assuming that those pressure minima/maxima would have been the same value without pumping. This provides a value for the drawdown caused by pumping (s_p). The same calculation can be done with the maxima.

5.6.2 Approximate calculation of hydraulic diffusivity

The distance r_s between different borehole sections has been calculated as the spherical distance using co-ordinates for the mid-chainage of each section. The calculation of the hydraulic diffusivity is based on radial flow:

$$\eta = T / S = r_s^2 / [4 \cdot dt_L \cdot (1 + dt_L / tp) \cdot ln(1 + tp / dt_L)]$$

The time lag dt_L is defined as the time when the pressure response in an observation section is greater than ca 0.01 metres (The time difference between a certain first observable response in the observation section and the stop of the pumping). The pumping time is included as tp. /Streltsova 1988/.

The estimates of the hydraulic diffusivity according to above should be seen as indicative values of the hydraulic diffusivity. Observation sections straddling a planar, major conductive feature that also intersects the pumping section should provide reliable estimates of the hydraulic diffusivity, but these cases have to be judged based on the geological model of the site.

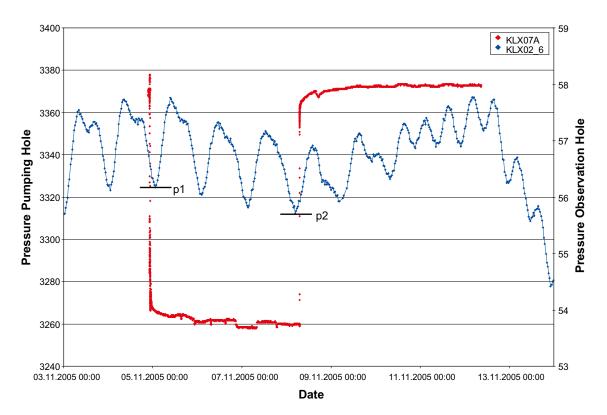


Figure 5-2. Pumping section in KLX07A 335.00–455.00 m bToC and Observation section KLX02 6.

For the calculation of the hydraulic diffusivity the recommended transmissivity T_T and Storativity S derived from the transient type curve analysis were used. No calculation based on dt_L was done, because of the often poor quality of dt_L and to ensure the consistency between the calculated diffusivity values.

Values of the hydraulic diffusivity are shown in Tables 7-2 to 7-4 and 8-3.

5.6.3 Response analysis

To derive transmissivities and storativities from the sections of the observation boreholes Golder's analysis software FlowDim was used.

Analysis approach

The interference tests are analysed using cylindrical source type curves calculated for different flow models as identified from the log-log derivative of the pressure response.

Assumptions

To understand the assumption used in the analysis of observation zone data it is useful to imagine in a first instance a source zone connected with the observation zones through fractures of equal transmissivity (T_1 to T_4). In Figure 5-3 the case of a source zone connected with 4 observation zones is presented.

If we note the flow rate at the source as q, each of the response in each of the observation zones will be influenced by a flow rate of q/4 because the transmissivities of the 4 fractures are equal, so the rate will be evenly distributed between the fractures as well.

We complicate now the system by adding a new fracture of much higher transmissivity (T_5) to the system (see Figure 5-4).

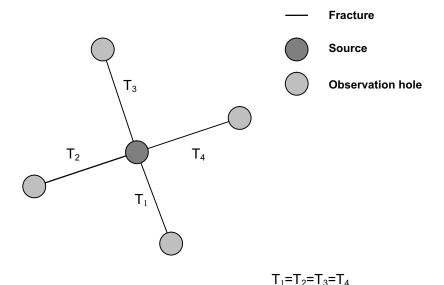


Figure 5-3. Schematic sketch of a pumping hole (source) and observation holes.

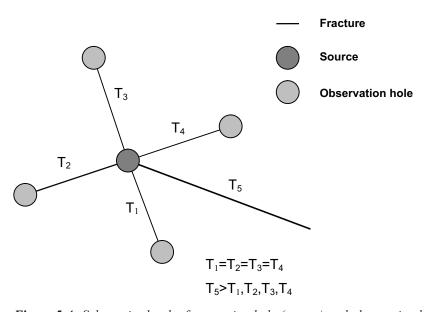


Figure 5-4. Schematic sketch of a pumping hole (source) and observation holes with an added fracture.

Because of the larger transmissivity, most of the flow rate of the source will be captured by this fracture, so the other 4 fractures will receive less flow. Because of this, the magnitude of the response at the 4 observation zones will be smaller than in the first case. The pathway transmissivity derived from the analysis of the observation zones will be in the second case much higher than in the first case. However, the pathway transmissivity between source and any of the observation zones did not change. The transmissivity derived in the second case is false because the analysis is conducted under the assumption that the flow rate of the source is evenly distributed in space. This assumption is clearly not valid in the second case. In reality, the flow rate around the source will be distributed inversely proportional to the transmissivity of the individual pathways:

$$q = q_1 + q_2 + \dots + q_n$$

$$\frac{T_1}{q_1} = \frac{T_2}{q_2} = \ldots = \frac{T_n}{q_n}$$

The analysis of observation zones (i.e. interference test analysis) assumes that:

$$q_1 = q_2 = ... = q_n$$

This assumption will typically result in similar transmissivities:

$$T_1 = T_2 = \dots = T_n$$

The distance used for the analysis is the shortest way between the source and the observation hole and no pathway tortuosity was considered. This assumption influences the storativity derived from the transient analysis.

Methodology

Each of the relevant test phases is subsequently analyzed using the following steps:

- Identification of the flow model by evaluation of the derivative on the log-log diagnostic
 plot. Initial estimates of the model parameters are obtained by conventional straight-line
 analysis.
- Superposition type curve matching in log-log coordinates. The type curves are based on /Theis 1935/ calculated for a cylindrical source (i.e. finite wellbore radius).

Flow models used for analysis

The flow models used in analysis were derived from the shape of the pressure derivative calculated with respect to log time and plotted in log-log coordinates.

In the most cases a homogenous flow model was used, otherwise a two shell composite flow model was chosen for the analysis.

If there were different flow models matching the data in comparable quality, the simplest model was preferred.

The flow dimension displayed by the test can be diagnosed from the slope of the pressure derivative. A slope of 0.5 indicates linear flow, a slope of 0 (horizontal derivative) indicates radial flow and a slope of -0.5 indicates spherical flow. The flow dimension diagnosis was commented for each of the tests. All tests were analysed using a flow dimension of two (radial flow).

6 Results pump tests

In the following, results of the pump tests conducted in KLX07A are presented and analysed. The results are given as general comments to test performance, the identified flow regimes and calculated parameters and finally the parameters which are considered as most representative are chosen and justification is given. All results are also summarized in the Tables 8-1, 8-2 of the synthesis chapter and in the summary sheets (Appendix 3). No disturbing activities like heavy rainfall were observed during the pump tests in borehole KLX07A. The only disturbing effects observed were caused by tidal influence. As at all performed pump tests the derivative is flat at late times, all pump tests were evaluated using a flow dimension of 2. In some cases, there was a flat derivative at middle times at a different level. In these cases, a composite model was chosen with a change of transmissivity in some distance from the borehole to match the different flat parts of the derivative and the connecting slope.

6.1 Section 103.20–193.20 m, test no. 1, pumping

Comments to test

The test was conducted as a constant rate pump phase (CRw) followed by a pressure recovery phase (CRwr). The flow rate during the pumping phase was at about 40.8 L/min at a drawdown of ca 46 kPa at the end of the perturbation phase. A connection to the lower and upper section was observed. After approx. 73 hours of pumping, the water sample was taken by SKB. The CRwr phase took 92.5 hours. Both phases are noisy but still adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test, the CRw and the CRwr phase show a flat derivative at late times, indicating a flow dimension of 2. For the analysis of both phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 2-1.

Selected representative parameters

The recommended transmissivity of $2.8 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the transmissivity is estimated to be $9.0 \cdot 10^{-5}$ to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 1,481.2 kPa.

The analysis of the CRw and CRwr phases shows good consistency. No further analysis is recommended.

6.2 Section 193.00–313.00 m, test no. 1, pumping

Comments to test

The test was conducted as a constant rate pump phase (CRw) followed by a pressure recovery phase (CRwr). The flow rate during the pumping phase was at about 36.4 L/min at a drawdown of ca 60 kPa at the end of the perturbation phase. A hydraulic connection to the section above was observed (drawdown of approx. 15 kPa), while the effect to the lower section was much smaller (5 kPa). After 67.8 hours of pumping, a water sample was taken by SKB. The CRwr

phase lasted 124.9 hours. Both phases are noisy due to tidal effects and gauge resolution limits. However, they are both adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test, the CRw phase shows a noisy but horizontal derivative at middle and late times, indicating a flow dimension of 2. The CRwr phase is flat at middle times, too. At late times, it shows an upward trend. This upward trend is interpreted as a result of the data quality and was ignored for the analysis. For the analysis of both phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 2-2.

Selected representative parameters

The recommended transmissivity of $2.5 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the better data and derivative quality. The confidence range for the transmissivity is estimated to be $1.0 \cdot 10^{-4}$ to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 2.365.3 kPa.

The analyses of the CRw and CRwr phases show good consistency. No further analysis is recommended.

6.3 Section 335.00-455.00 m, test no. 1, pumping

Comments to test

The test was conducted as a constant rate pump phase (CRw) followed by a pressure recovery phase (CRwr). The flow rate during the pumping phase was at about 18.1 L/min at a drawdown of ca 114 kPa at the end of the perturbation phase. A slight connection to the section below was observed. The flow rate is a little noisy and between 47 and 59 hours after start of pumping, the flow rate rose by approx. 0.5 L/min. The reason for this is unknown. After 80.4 hours of pumping a water sample was taken by SKB. The CRwr phase took 97.6 hours. Both phases are noisy and effected by tidal effects but still adequate for quantitative analysis. For The analysis of the CRw phase only the second part of the data can be used.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test, the CRw and the CRwr phase show a very noisy but horizontal derivative at late times, indicating a flow dimension of 2. For the analysis of both phases an infinite acting homogeneous radial flow model was chosen. The analysis is presented in Appendix 2-3.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the transmissivity is estimated to be $8.0 \cdot 10^{-5}$ to $2.0 \cdot 10^{-4}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 3,374.6 kPa.

The analysis of the CRw and CRwr phases shows good consistency. No further analysis is recommended.

6.4 Section 610.00-655.00 m, test no. 1, pumping

Comments to test

The test was conducted as a constant rate pump phase (CRw) followed by a pressure recovery phase (CRwr). The flow rate during the pumping phase was very noisy in the range between 15 and 19 L/min with an average of at about 17.6 L/min at a drawdown of ca 309 kPa at the end of the perturbation phase. A hydraulic connection to the section below was observed. After 72.5 hours of pumping, a water sample was taken by SKB. The CRwr phase took 116.9 hours. Both phases are of good quality and adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test, the CRw and the CRwr phase show a flat derivative at middle times, indicating a flow dimension of 2. This part is followed by a downward trend of the derivative and a second stabilisation at a lower level. This is interpreted as a transition to a zone of higher transmissivity at some distance from the borehole. For the analysis of both phases a radial two shell composite flow model was chosen. The analysis is presented in Appendix 2-4.

Selected representative parameters

The recommended transmissivity of $9.0 \cdot 10^{-6}$ m²/s was derived from the analysis of the CRwr phase (inner zone), which shows the better data and derivative quality. The confidence range for the transmissivity is estimated to be $8.0 \cdot 10^{-6}$ to $2.0 \cdot 10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 4,875.9 kPa.

The analyses of the CRw and CRwr phases show good consistency. No further analysis is recommended.

6.5 Section 747.00-792.00 m, test no. 1, pumping

Comments to test

The test was conducted as a constant rate pump phase (CRw) followed by a pressure recovery phase (CRwr). The flow rate during the pumping phase was at about 20.9 L/min at a drawdown of ca 160 kPa at the end of the perturbation phase. A hydraulic connection to the section below was observed. After 65.7 hours of pumping, a water sample was taken by SKB. The CRwr phase took 91.0 hours. Both phases are a little noisy but still adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. In case of the present test, the derivative of the CRw phase shows a downward trend at middle times followed by a stabilisation at late times indicating radial flow. A composite two shell flow model with increasing transmissivity away from the borehole was chosen for the analysis of the CRw phase. The CRwr phase shows a horizontal derivative at middle and late times, indicating a flow dimension of 2. For the analysis of CRwr phase an infinite acting homogeneous radial flow model was chosen. The derivatives are noisier at late times due to the fact that tidal and other effects dominate more and more over small pressure recovery steps. The analysis is presented in Appendix 2-5.

Selected representative parameters

The recommended transmissivity of $3.4\cdot10^{-5}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the transmissivity is estimated to be $2.0\cdot10^{-5}$ to $5.0\cdot10^{-5}$ m²/s. The flow dimension displayed during the test is 2. The static pressure measured at transducer depth, was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 5,957.7 kPa.

Apart from the different flow models, the analysis of the CRw and CRwr show good consistency. No further analysis is recommended.

6.6 Water sampling

Just prior to pumpstop water samples were collected from each section which which submitted to SKB Äspölaboratoriet for class 3 analysis. Sample information and some of the analysis results are shown in Table 6-1.

Table 6-1. Water samples taken during pumping of the source section in KLX07A.

Stop Date	Secup Seclow Sample No. (m) (m)		Sample No	pH (pH unit)	El. Cond (mS/m)	Drill Water (%)	Charge Balance			
2005-10-31	103.00	193.00	10580	8.21	65.6	0.90	-0.18			
2005-11-15	193.00	313.00	10610	8.26	92.0	2.71	0.75			
2005-11-25	747.00	792.00	10651	7.82	435.0	7.13	-0.16			
2005-12-03	610.00	655.00	10661	7.84	446.0	10.10	1.04			
2006-12-05	753.00	780.00	11462	7.69	287.0	4.01				

7 Results response analysis

In the following, the data of the observation zones which responded to pumping is represented and analysed. The results of the analysis are also summarized in the Table 8-3 of the synthesis chapter and the summary sheets (Appendix 6 and 8).

Table 7-1 summarises all the tests and the observed boreholes. Furthermore it shows the response matrix based on the calculated indices 1 (r_s^2/dt_L) , 2 (s_p/Q_p) and 2 new $(s_p/Q_p) \cdot \ln(r_s/r_0)$ (see Chapter 5.6.1).

Table 7-1. Response matrix with Index 1, Index 2 and Index 2 new.

Pumping Hole Section (m b TOC) Flow rate (I/min) Drawdown (kPa)		KLX07A 103.20– 193.20 40.8 46			KLX07A 193.00- 313.00 36.4 60			KLX07A 335.00- 455.00 18.1 114			KLX07A 610.00- 655.00 17.6 309			KLX07A 747.00- 792.00 20.9			
Observation	Sec	Section						R	espo	nse i	ndice	es					
borehole	No	(m)	1	2	2n	1	2	2n	1	2	2n	1	2	2n	1	2	2n
KLX07A	Pa	11.80-102.20	М			na	na	na	na	na	na	na	na	na	na	na	na
	Pb	194.20-844.73	Е			na	na	na	na	na	na	na	na	na	na	na	na
KLX07A	Pa	11.80–192.00	na	na	na	Е			na	na	na	na	na	na	na	na	na
	Pb	314.00-844.73	na	na	na	Н			na	na	na	na	na	na	na	na	na
KLX07A	Pa	11.80-334.00	na	na	na	na	na	na				na	na	na	na	na	na
	Pb	456.00-844.73	na	na	na	na	na	na				na	na	na	na	na	na
KLX07A	Pa	11.80-609.00	na	na	na	na	na	na	na	na	na				na	na	na
	Pb	656.00-844.73	na	na	na	na	na	na	na	na	na	Н			na	na	na
KLX07A	Pa	11.80–746.00	na	na	na	na	na	na	na	na	na	na	na	na			
	Pb	793.00-844.73	na	na	na	na	na	na	na	na	na	na	na	na	Н		
HLX01	1	16.00-100.63															
HLX02	1	0.60-132.00															
HLX06	1	1.00-100.00															
HLX07	1	16.00-100.00															
HLX10	1	3.00-85.00	Н			Е											
HLX11	1	17.00-70.00	Н			Н			Н								
	2	6.00-16.00	М			Н			Н								
HLX13	1	11.87–200.02															
HLX14	1	11.00–115.90															
HLX21	1	81.00-150.00	Н			nc			nc								
	2	9.10-80.00	Н			nc			nc								
HLX22	1	86.00-163.20	Н			nc			nc								
	2	9.19-85.00	Н			nc			nc								
HLX23	1	61.00-160.20															
	2	6.10-60.00															
HLX24	1	41.00–175.20															
	2	9.10-40.00															
HLX25	1	61.00-202.50															
	2	6.12-60.00															
HLX30	1	101.00-163.40															
	2	9.10-100.00															

		Pumping Hole	KLX07A 103.20-		KL	(07A		KLX	(07A		KL	(07A		KLX07A				
		Section (m b TOC)			193.00-			335.00-			610.00-			747.00-				
			193.20		313.00			455.00			655.00			792.00				
		Flow rate (I/min)	40.8 46			36.4 60			18.1 114			17.6 309			20.9			
		Drawdown (kPa)													160			
Observation borehole	Sec No	Section (m)						R	espo	nse	indice	es						
			1	2	2n	1	2	2n	1	2	2n	1	2	2n	1	2	2n	
HLX31	1	9.10–133.20																
HLX33	1	31.00-202.10																
	2	9.10-30.00																
HLX34	1	9.00-151.80																
HLX35	1	65.00-151.50																
	2	6.00-64.00																
KLX01	1	705.00-1,077.99																
	2	191.00-704.00																
	3	171.00-190.00																
	4	1.00-170.00																
KLX02	1	1,165.00-1,700.00																
	2	1,145.00-1,164.00																
	3	718.00-1,144.00																
	4	495.00-717.00																
	5	452.00-494.00																
	6	348.00-451.00	Н			nc												
	7	209.00-347.00	Н			Н			nc									
	8	202.95-208.00	М			Н			nc									
KLX04	1	898.00-1,000.00																
	2	870.00-897.00																
	3	686.00-869.00																
	4	531.00-685.00																
	5	507.00-530.00																
	6	231.00-506.00																
	7	163.00-230.00																
	8	12.24-162.00																
KLX07B	1	112.00-200.00	Н			Н			Н									
	2	49.00-111.00	Н			Е			Н									
	3	0.00-48.00	М			Е			Е								\top	

Index 1 (r²/t_L)

$$\begin{split} r_s^2/dt_L &> 100 \text{ m}^2/\text{s} & \text{Excellent} \\ 10 &< r_s^2/dt_L \leq 100 \text{ m}^2/\text{s} & \text{High} \\ 1 &< r_s^2/dt_L \leq 10 \text{ m}^2/\text{s} & \text{Medium} \\ 0.1 &< r_s^2/dt_L \leq 1 \text{ m}^2/\text{s} & \text{Low} \\ \text{Not calculated due to strong natural fluctuations} \end{split}$$

Index 2 (s_p/Q_p)

 $\begin{array}{lll} E & s_p/Q_p > 1 \cdot 10^5 \; \text{s/m}^2 \\ H & 3 \cdot 10^4 < s_p/Q_p \leq 1 \cdot 10^5 \; \text{s/m}^2 \\ M & 1 \cdot 10^4 < s_p/Q_p \leq 3 \cdot 10^4 \; \text{s/m}^2 \\ L & s_p/Q_p \leq 1 \cdot 10^4 \; \text{s/m}^2 \\ \text{nc} & s_p < 0.1 \; \text{m} \end{array}$

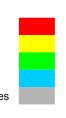
Excellent High Medium Low No response indices

but analysed

Index 2 new $(s_p/Q_p)\cdot ln(r_s/r_0)$

$$\begin{split} &(s_p/Q_p) \cdot ln(r_s/r_0) > 5 \cdot 10^5 \text{ s/m}^2 \\ &5 \cdot 10^4 < (s_p/Q_p) \cdot ln(r_s/r_0) \leq 5 \cdot 10^5 \text{ s/m}^2 \\ &5 \cdot 10^3 < (s_p/Q_p) \cdot ln(r_s/r_0) \leq 5 \cdot 10^4 \text{ s/m}^2 \\ &5 \cdot 10^2 < (s_p/Q_p) \cdot ln(r_s/r_0) \leq 5 \cdot 10^3 \text{ s/m}^2 \\ &s_p < 0.1 \text{ m} \end{split}$$

Excellent
High
Medium
Low
No response indices
but analysed



blank = observed but no response at all na = not applicable

7.1 KLX07A Test section 103.20-193.20 m pumped

This interference test was conducted as constant rate pump test phase followed by a recovery pressure phase in the source section. The mean flow rate was 40.8 l/min with a drawdown of 46 kPa. In sum 15 observation sections responded due to the pumping. In addition, the zone above and below the pumped section reacted. Table 7-2 summarizes the responding test sections and selected parameters. Figure 7-1 shows the drawdown of the observed sections related to the distance and Figure 7-2 the borehole response map. The pumped borehole KLX07A is shown with consideration of the effective borehole radius $r_{\rm wf}$, calculation based on the skin factor (ξ).

$$r_{\rm wf} = r_{\rm w} \cdot e^{-\xi}$$

In the following chapters the response analysis of each responded section is presented.

Table 7-2. Observed test sections and selected parameters (Section 103.20–193.20 m pumped).

Source borehole		Section (m)	Flow rate Qm (I/min)	Draw- down (m)	r _{wf} (m)				
KLX07A		103.20–193.20	40.8	4.69	3.8E-03				
Observa- tion borehole	Sec No	Section (m)	Distance r _s (m)	Draw- down s _p (m)	dt _L (s)	Index 1 r _s ²/dt _L (m²/s)	Index 2 s _p /Q _p (s/m²)	Index 2 New (s_p/Q_p) · $In(r_s/r_0)$ (s/m^2)	Diffusivity ŋ (m²/s)
KLX07A	Pa Pb	11.80–102.20 194.00–844.73	94.00 368.37	1.02 1.53	4,630 26	1.91 M 5,235.06 E	1,499.07 2,248.61	6,810.72 13,287.18	_ _
HLX01	1	16.00-100.63	751.43	n.r.	_	_	_	_	_
HLX02	1	0.60-132.00	1,619.95	n.r.	_	_	_	_	_
HLX06	1	1.00-100.00	739.57	n.r.	_	_	_	_	_
HLX07	1	16.00-100.00	958.88	n.r.	_	_	_	_	_
HLX10	1	3.00-85.00	105.46	1.17	209	53.21 H	1,723.93	8,030.64	1.49E00
HLX11	1 2	14.00–70.00 6.00–13.00	160.20 175.11	0.83 0.80	1,521 6,321	16.87 H 4.85 M	1,214.25 1,169.28	6,164.05 6,039.78	4.00E-01 9.15E-01
HLX13	1	11.87–200.02	1,552.42	n.r.	_	_	_	_	_
HLX14	1	11.00–155.90	1,516.45	n.r.	_	_	_	_	_
HLX21	1 2	81.00–150.00 9.10–80.00	435.74 434.21	0.27 0.24	10,924 9,379	17.38 H 20.10 H	389.76 359.78	2,368.58 2,185.12	2.92E00 3.12E00
HLX22	1 2	86.00–163.20 9.19–85.00	467.00 477.00	0.29 0.15	10,756 13,961	20.28 H 16.30 H	419.74 224.86	2,579.86 1,386.83	2.55E00 3.29E00
HLX23	1 2	61.00–160.20 6.10–60.00	362.14 361.12	0.05)* 0.09)*	n.c. n.c.	n.c. n.c.	n.c.	n.c. n.c.	8.36E00 4.11E00
HLX24	1 2	41.00–175.20 9.10–40.00	368.70 402.48	0.05)* n.r.	n.c. -	n.c. –	n.c.	n.c.	3.46E00 -
HLX25	1	61.00–202.50	1.434.55	n.r.	_	_	_	_	_
	2	6.12–60.00	1,439.90	n.r.	_	_	_	_	_
HLX30	1 2	101.00–163.40 9.10–100.00	1,163.08 1,143.48	n.r. n.r.			_ _		_
HLX31	1	9.10-133.20	1,099.48	n.r.	_	_	-	_	_
HLX33	1 2	31.00–202.10 9.10–30.00	633.76 685.95	n.r. n.r.					-
HLX34	1	9.00-151.80	1,790.10	n.r.	_	_	_	_	_
HLX35	1 2	65.00–151.50 6.00–64.00	1,788.07 1,846.24	n.r. n.r.				_ _	
KLX01	1 2	705.00–1,077.99 191.00–704.00	1,353.48 1,145.12	n.r. n.r.	_ _	- -	_ _	- -	_ _
	3 4	171.00–190.00 1.00–170.00	1,089.38 1,084.58	n.r. n.r.	_	_	_	_ _	_

Source borehole		Section (m)	Flow rate Qm (I/min)	Draw- down (m)	r _{wf} (m)				
KLX07A		103.20-193.20	40.8	4.69	3.8E-03				
Observa- tion borehole	Sec No	Section (m)	Distance r _s (m)	Draw- down s _p (m)	dt _L (s)	Index 1 r _s ²/dt _L (m²/s)	Index 2 s _p /Q _p (s/m²)	Index 2 New (s _p /Q _p)· In(r _s /r ₀) (s/m ²)	Diffusivity ŋ (m²/s)
KLX02	1	1,165.00-1,700.00	1,328.68	n.r.	_	_	_	_	_
	2	1,145.00-1,164.00	1,051.43	n.r.	_	_	_	_	_
	3	718.00-1,144.00	829.28	n.r.	_	_	_	_	_
	4	495.00-717.00	508.63	n.r.	_	_	_	_	_
	5	452.00-494.00	379.74	n.r.	_	_	_	_	_
	6	348.00-451.00	310.17	0.17	7,891	12.19 H	254.84	1,462.06	3.65E-01
	7	209.00-347.00	202.22	0.85	1,731	23.62 H	1,244.23	6,606.06	3.22E00
	8	202.95–208.00	148.53	0.43	8,571	2.57 M	629.61	3,148.54	3.07E00
KLX04	1	898.00-1,000.00	1,383.65	n.r.	_	_	_	_	_
	2	870.00-897.00	1,349.96	n.r.	_	_	_	_	_
	3	686.00-869.00	1,299.40	n.r.	_	_	_	_	_
	4	531.00-685.00	1,229.53	n.r.	_	_	_	_	_
	5	507.00-530.00	1,199.37	n.r.	_	_	_	_	_
	6	231.00-506.00	1,160.65	n.r.	_	_	_	_	_
	7	163.00-230.00	1,135.17	n.r.	_	_	_	_	_
	8	12.24-162.00	1,130.90	n.r.	_	_	_	_	_
KLX07B	1	112.00-200.00	83.50	1.03	328	21.26 H	1,514.06	6,699.49	1.11E00
	2	49.00-111.00	92.93	0.93	623	13.86 H	1,364.15	6,182.14	7.58E-01
	3	0.00-48.00	131.35	0.82	2,050	8.42 M	1,199.26	5,849.81	5.87E-01

^{)*} no response according to SKB 330.003 (Bilagor B); see Chapter 4.6.1 for greater detail.

Key for index 1, 2 and 2 new see Table 7-1.

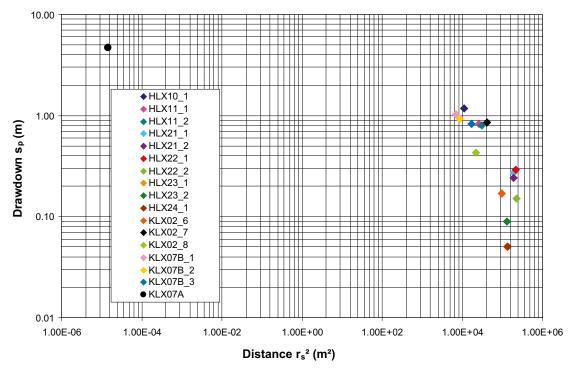


Figure 7-1. Distance vs. Drawdown for the responded test sections; KLX07A Section 103.20–193.20 m pumped.

n.c. not calculated due to strong natural fluctuations (tidal effects).

n.r. no response due to pumping in source.

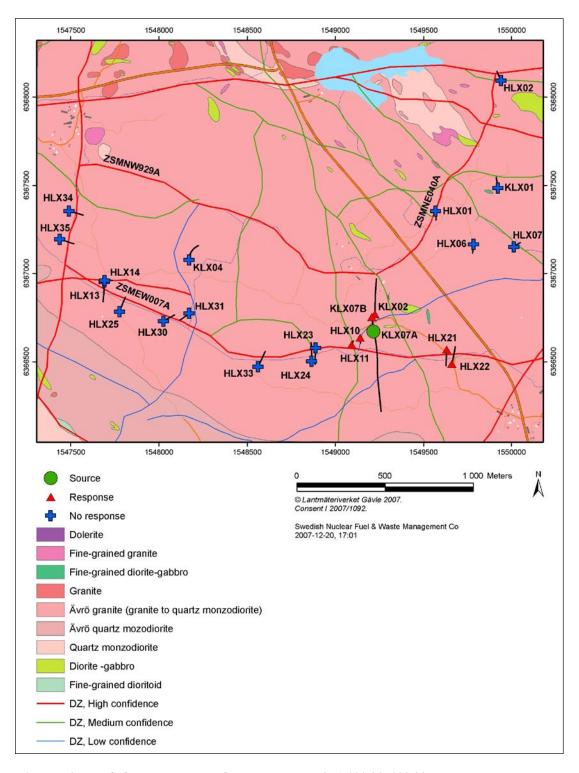


Figure 7-2. Borehole response map when pumping KLX07A 103.20–193.20 m.

7.1.1 Response HLX10, Section 1 (3.00-85.00 m)

Comments to test

A total drawdown during the flow period of 11.3 kPa (1.17 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 3.5 min (209 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

Due to the tidal effects the recorded Crw and Crwr phases are noisy. However, both phases were analysed but the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-1-1.

Selected representative parameters

The recommended transmissivity of $1.4\cdot10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $6.0\cdot10^{-5}$ m²/s to $5.0\cdot10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.1.2 Response HLX11, Section 1 (17.00–70.00 m)

Comments to test

A total drawdown during the flow period of 8.1 kPa (0.83 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 25.4 min (1,521 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-2.

Selected representative parameters

The recommended transmissivity of $2.1 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. The measured freshwater head was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 6.91 m asl.

7.1.3 Response HLX11, Section 2 (6.00–16.00 m)

Comments to test

A total drawdown during the flow period of 7.8 kPa (0.80 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 1.76 h (6,321 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "medium response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-3.

Selected representative parameters

The recommended transmissivity of $1.4 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $3.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. The measured freshwater head was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 6.83 m asl.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.1.4 Response HLX21, Section 1 (81.00–150.00 m)

Comments to test

A total drawdown during the flow period of 2.6 kPa (0.27 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 3.03 h (10,924 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. However, both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-4.

Selected representative parameters

The recommended transmissivity of $4.0 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $1.0 \cdot 10^{-4}$ m²/s to $8.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.1.5 Response HLX21, Section 2 (9.10-80.00 m)

Comments to test

A total drawdown during the flow period of 2.4 kPa (0.24 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 2.61 h (9,379 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. However, both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-5.

Selected representative parameters

The recommended transmissivity of $3.9\cdot10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $1.0\cdot10^{-4}$ m²/s to $8.0\cdot10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.1.6 Response HLX22, Section 1 (86.00–163.20 m)

Comments to test

A total drawdown during the flow period of 2.8 kPa (0.29 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 2.99 h (10,756 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. However, both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-6.

Selected representative parameters

The recommended transmissivity of $3.8 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $1.0 \cdot 10^{-4}$ m²/s to $8.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.1.7 Response HLX22, Section 2 (9.19-85.00 m)

Comments to test

A total drawdown during the flow period of 1.5 kPa (0.15 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 3.88 h (13,961 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. However, both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-7.

Selected representative parameters

The recommended transmissivity of $6.8 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $4.0 \cdot 10^{-4}$ m²/s to $9.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.1.8 Response HLX23, Section 1 (61.00-160.20 m)

Comments to test

A total drawdown during the flow period of 0.5 kPa (0.05 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response". Although the response is very low it is clearly caused by the pumping in KLX07A (103.20–193.20) and a transient analysis was performed.

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-1-8.

Selected representative parameters

The recommended transmissivity of $2.6 \cdot 10^{-3}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $1.0 \cdot 10^{-3}$ m²/s to $5.0 \cdot 10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.1.9 Response HLX23, Section 2 (6.10-60.00 m)

Comments to test

A total drawdown during the flow period of 0.9 kPa (0.09 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response". Although the response is very low it is clearly caused by the pumping in KLX07A (103.20-193.20) and a transient analysis was performed.

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-1-9.

Selected representative parameters

The recommended transmissivity of $1.6\cdot10^{-3}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0\cdot10^{-4}$ m²/s to $4.0\cdot10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.1.10 Response HLX24, Section 1 (41.00–175.20 m)

Comments to test

A total drawdown during the flow period of 0.5 kPa (0.05 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response". Although the response is very low it is clearly caused by the pumping in KLX07A (103.20-193.20) and a transient analysis was performed.

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-1-10.

Selected representative parameters

The recommended transmissivity of $2.2 \cdot 10^{-3}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $1.0 \cdot 10^{-3}$ m²/s to $5.0 \cdot 10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.1.11 Response KLX02, Section 6 (348.00–451.00 m)

Comments to test

A total drawdown during the flow period of 1.7 kPa (0.17 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 2.19 h (7,891 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Due to the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. However, both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-1-11.

Selected representative parameters

The recommended transmissivity of $6.9 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $2.0 \cdot 10^{-4}$ m²/s to $1.0 \cdot 10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.1.12 Response KLX02, Section 7 (209.00–347.00 m)

Comments to test

A total drawdown during the flow period of 8.3 kPa (0.85 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 28.9 min (1,731 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-1-12.

Selected representative parameters

The recommended transmissivity of $2.3 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $5.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.1.13 Response KLX02, Section 8 (202.95-208.00 m)

Comments to test

A total drawdown during the flow period of 1.7 kPa (0.43 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 2.38 h (8,571 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "medium response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Due to the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. However, both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-13.

Selected representative parameters

The recommended transmissivity of $2.4\cdot10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $1.0\cdot10^{-4}$ m²/s to $4.0\cdot10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.1.14 Response KLX07B, Section 1 (112.00-200.00 m)

Comments to test

A total drawdown during the flow period of 10.1 kPa (1.09 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 5.5 min (328 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a two shell composite radial flow model was chosen. The analysis is presented in Appendix 7-1-14.

Selected representative parameters

The recommended transmissivity of $1.4\cdot10^{-4}$ m²/s was derived from the analysis of the CRw phase (inner zone), which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0\cdot10^{-5}$ m²/s to $4.0\cdot10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.1.15 Response KLX07B, Section 2 (49.00–111.00 m)

Comments to test

A total drawdown during the flow period of 9.1 kPa (0.93 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 10.4 min (623 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw phase a two shell composite and for the CRw phase a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-15.

Selected representative parameters

The recommended transmissivity of $1.7 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase (inner zone), which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0 \cdot 10^{-5}$ m²/s to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show some inconsistency concerning the chosen flow model. But the general results are very similar and no further analysis is recommended.

7.1.16 Response KLX07B, Section 3 (0.00-48.00 m)

Comments to test

A total drawdown during the flow period of 8.0 kPa (0.82 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 36.2 min (2,050 s) after pump start in KLX07A (103.20–193.20). The calculated index 1 (r_s^2/dt_L) is rated as "medium response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-1-16.

Selected representative parameters

The recommended transmissivity of $1.4\cdot10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $1.0\cdot10^{-4}$ m²/s to $4.0\cdot10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.2 KLX07A Test section 193.00-313.00 m pumped

This interference test was conducted as constant rate pump test phase followed by a recovery pressure phase in the source section. The mean flow rate was 36.4 l/min with a drawdown of 60 kPa. In sum 15 observation sections responded due to the pumping. In addition, the zone above and below the pumped section reacted. Table 7-3 summarizes the responding test sections and selected parameters. Figure 7-3 shows the drawdown of the observed sections related to the distance and Figure 7-4 the borehole response map. The pumped borehole KLX07A is shown with consideration of the effective borehole radius $r_{\rm wf}$. In the following chapters the response analysis of each responded section is presented.

Table 7-3. Observed test sections and selected parameters (Section 193.00–313.00 m pumped).

Source borehole		Section (m)	Flow rate Qm (I/min)	Draw- down (m)	r _{wf} (m)				
KLX07A		193.00–313.00	36.4	6.12	9.9E-04				
Observa- tion borehole	Sec No	Section (m)	Distance r _s (m)	Draw- down s _p (m)	dt _L (s)	Index 1 r _s ²/dt _L (m²/s)	Index 2 s _p /Q _p (s/m²)	Index 2 New (s_p/Q_p) · $In(r_s/r_0)$ (s/m^2)	Diffusivity ŋ (m²/s)
KLX07A	Pa Pb	11.80–192.00 314.00–844.73	151.10 326.37	1.53 0.53	23 3,321	990.9 E 32.07 H	2,520.42 840.14	12,647.30 4,862.74	- -
HLX01	1	16.00-100.63	815.97	n.r.	_	_	-	_	_
HLX02	1	0.60-132.00	1,680.05	n.r.	_	_	_	_	_
HLX06	1	1.00-100.00	788.33	n.r.	_	_	_	_	_
HLX07	1	16.00-100.00	995.41	n.r.	_	_	_	_	_
HLX10	1	3.00-85.00	144.23	1.38	186	111.8 E	1,276.31	6,345.06	1.45E01
HLX11	1 2	17.00–70.00 6.00–16.00	209.12 225.27	0.84 0.88	931 3,332	46.97 H 15.23 H	1,377.07 1,444.24	7,357.54 7,823.89	7.05E-01 1.47E00
HLX13	1	11.87-200.02	1,576.00	n.r.	_	_	-	_	_
HLX14	1	11.00–155.90	1,580.94	n.r.	_	_	_	_	_
HLX21	1 2	81.00–150.00 9.10–80.00	423.78 427.20	0.20 0.20	n.c n.c.	n.c. n.c.	335.87 335.87	2,031.75 2,034.46	2.55E00 2.05E00
HLX22	1 2	86.00–163.20 9.19–85.00	456.00 468.00	0.22 0.10	n.c. n.c.	n.c. n.c.	369.46 167.94	2,262.00 1,032.90	7.19E00 5.88E00
HLX23	1 2	61.00–160.20 6.10–60.00	375.47 379.29	0.04)* 0.08)*	n.c. n.c.	n.c. n.c.	n.c.	n.c. n.c.	2.14E01 1.76E01
HLX24	1 2	41.00–175.20 9.10–40.00	378.97 418.25	0.05)* n.r.	n.c. -	n.c. –	n.c.	n.c.	2.94E00 -
HLX25	1 2	61.00–202.50 6.12–60.00	1,456.14 1,462.60	n.r. n.r.	_ _	- -	_ _		
HLX30	1 2	101.00–163.40 9.10–100.00	1,162.90 1,184.40	n.r. n.r.			_ _	_	
HLX31	1	9.10-133.20	1,118.02	n.r.	_	_	-	_	_
HLX33	1 2	31.00–202.10 9.10–30.00	635.59 695.59	n.r. n.r.	_ _				
HLX34	1	9.00-151.80	1,825.88	n.r.	-	_	-	_	_
HLX35	1 2	65.00–151.50 6.00–64.00	1,818.48 1,880.36	n.r. n.r.	_ _		_ _		_ _
KLX01	1 2 3 4	705.00–1,077.99 191.00–704.00 171.00–190.00 1.00–170.00	1,351.68 1,171.07 1,133.85 1,135.29	n.r. n.r. n.r. n.r.	- - -	- - -	- - -	- - -	- - -

Source borehole		Section (m)	Flow rate Qm (I/min)	Draw- down (m)	r _{wf} (m)				
KLX07A		193.00-313.00	36.4	6.12	9.9E-04				
Observa- tion borehole	Sec No	Section (m)	Distance r _s (m)	Draw- down s _p (m)	dt _L (s)	Index 1 r _s ²/dt _L (m²/s)	Index 2 s _p /Q _p (s/m²)	Index 2 New (s _p /Q _p)· In(r _s /r ₀) (s/m ²)	Diffusivity ŋ (m²/s)
KLX02	1	1,165.00-1,700.00	1,269.39	n.r.	_	_	_	_	_
	2	1,145.00–1,164.00	994.36	n.r.	_	_	_	_	_
	3	718.00–1,144.00	775.50	n.r.	_	_	_	_	_
	4	495.00–717.00	465.70	n.r.	_	_	_	_	_
	5	452.00-494.00	347.39	n.r.	_	_	_	_	_
	6	348.00-451.00	287.87	0.17	n.c.	n.c.	285.49	1,616.59	2.00E00
	7	209.00-347.00	211.19	0.70	557	80.07 H	1,158.75	6,202.52	3.13E00
	8	202.95–208.00	189.75	0.64	1,717	20.97 H	1,057.99	5,549.95	1.16E01
KLX04	1	898.00-1,000.00	1,372.41	n.r.	_	_	_	_	_
	2	870.00-897.00	1,342.02	n.r.	_	_	_	_	_
	3	686.00-869.00	1,297.10	n.r.	_	_	_	_	_
	4	531.00-685.00	1,236.99	n.r.	_	_	_	_	_
	5	507.00-530.00	1,212.35	n.r.	_	_	_	_	_
	6	231.00-506.00	1,183.15	n.r.	_	_	_	_	_
	7	163.00-230.00	1,168.63	n.r.	_	_	_	_	_
	8	12.24-162.00	1,170.96	n.r.	_	_	_	_	-
KLX07B	1	112.00-200.00	149.70	0.79	978	22.91 H	1,293.10	6,476.68	1.02E01
	2	49.00-111.00	191.30	0.81	212	172.62 H	1,326.69	6,970.22	6.16E00
	3	0.00-48.00	233.32	0.80	52	1.046.89 E	1.309.90	7,142.09	1.89E00

^{)*} no response according to SKB 330.003 (Bilagor B); see Chapter 4.6.1 for greater detail.

Key for index 1, 2 and 2 new see Table 7-1.

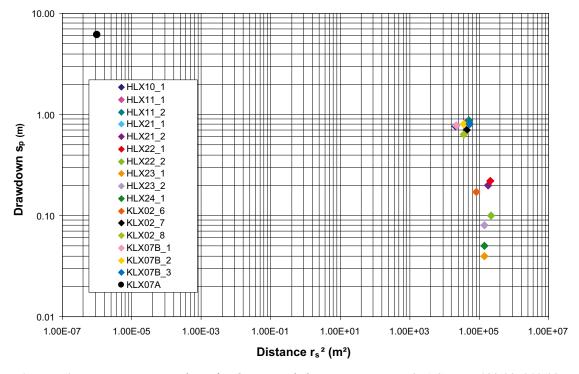


Figure 7-3. Distance vs. Drawdown for the responded test sections; KLX07A Section 193.00–313.00 m pumped.

n.c. not calculated due to strong natural fluctuations (tidal effects).

n.r. no response due to pumping in source.

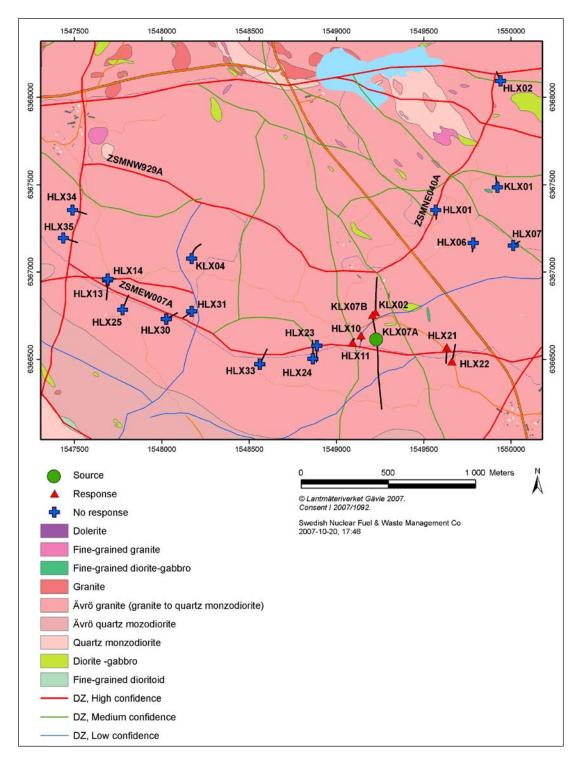


Figure 7-4. Borehole response map when pumping KLX07A 193.00–313.00 m.

7.2.1 Response HLX10, Section 1 (3.00-85.00 m)

Comments to test

A total drawdown during the flow period of 7.6 kPa (0.77 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 3.1 min (186 s) after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "excellent response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

Due to tidal effects the recorded CRw and CRwr phases are noisy. However, both phases were analysed but the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-1.

Selected representative parameters

The recommended transmissivity of $1.8 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $6.0 \cdot 10^{-5}$ m²/s to $5.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.2.2 Response HLX11, Section 1 (17.00–70.00 m)

Comments to test

A total drawdown during the flow period of 8.2 kPa (0.84 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 15.5 min (931 s) after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-2-2.

Selected representative parameters

The recommended transmissivity of $1.6 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0 \cdot 10^{-5}$ m²/s to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. The measured freshwater head was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 6.75 m asl.

7.2.3 Response HLX11, Section 2 (6.00–16.00 m)

Comments to test

A total drawdown during the flow period of 8.6 kPa (0.88 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 55.5 min (3,332 s) after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases show no problems and are adequate for quantitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-2-3.

Selected representative parameters

The recommended transmissivity of $1.1 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0 \cdot 10^{-5}$ m²/s to $3.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. The measured freshwater head was derived from the CRwr phase using straight line extrapolation in the Horner plot to a value of 6.66 m asl.

The analyses of the CRw and CRwr phases show discrepancies as far as the transmissivity is concerned. No further analysis recommended.

7.2.4 Response HLX21, Section 1 (81.00–150.00 m)

Comments to test

A total drawdown during the flow period of 2.0 kPa (0.20 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 $(s_p/Q_p) \cdot \ln(r_s/r_0)$ are rated as "low response"

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are very noisy. However, both phases were analysed but the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-4.

Selected representative parameters

The recommended transmissivity of $3.5 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $8.0 \cdot 10^{-4}$ m²/s (this range encompasses the transmissivity derived from the CRwr phase). The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.2.5 Response HLX21, Section 2 (9.10-80.00 m)

Comments to test

A total drawdown during the flow period of 2.0 kPa (0.20 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 $(s_p/Q_p) \cdot \ln(r_s/r_0)$ are rated as "low response"

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are very noisy. However, both phases were analysed but the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-5.

Selected representative parameters

The recommended transmissivity of $3.9\cdot10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0\cdot10^{-5}$ m²/s to $8.0\cdot10^{-4}$ m²/s (this range encompasses the transmissivity derived from the CRwr phase). The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.2.6 Response HLX22, Section 1 (86.00–163.20 m)

Comments to test

A total drawdown during the flow period of 2.2 kPa (0.22 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) are rated as "low response"

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are very noisy. However, both phases were analysed but the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-6.

Selected representative parameters

The recommended transmissivity of $9.1\cdot10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $3.0\cdot10^{-4}$ m²/s to $2.0\cdot10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.2.7 Response HLX22, Section 2 (9.19-85.00 m)

Comments to test

A total drawdown during the flow period of 1.0 kPa (0.10 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) are rated as "low response"

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are very noisy. However, both phases were analysed but the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-7.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-3}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $7.0 \cdot 10^{-4}$ m²/s to $4.0 \cdot 10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.2.8 Response HLX23, Section 1 (61.00-160.20 m)

Comments to test

A total drawdown during the flow period of 0.4 kPa (0.04 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response". Although the response is very low it is clearly caused by the pumping in KLX07A (193.00-313.00) and a transient analysis was performed.

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. The results of the analysis should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-8.

Selected representative parameters

The recommended transmissivity of $2.8 \cdot 10^{-3}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-4}$ m²/s to $5.0 \cdot 10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.2.9 Response HLX23, Section 2 (6.10–60.00 m)

Comments to test

A total drawdown during the flow period of 0.8 kPa (0.08 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response". Although the response is very low it is clearly caused by the pumping in KLX07A (193.00-313.00) and a transient analysis was performed.

The CRw and CRwr phases are influenced tidal effects and the recorded data is noisy. The results of the analysis should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a composite radial flow model with decreasing transmissivity away from the borehole was chosen. The analysis is presented in Appendix 7-2-9.

Selected representative parameters

The recommended transmissivity of $2.9 \cdot 10^{-3}$ m²/s was derived from the analysis of the CRw phase (inner zone), which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $7.0 \cdot 10^{-4}$ m²/s to $5.0 \cdot 10^{-3}$ m²/s (this range encompasses the outer zone transmissivity derived from the CRw phase). The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.2.10 Response HLX24, Section 1 (41.00–175.20 m)

Comments to test

A total drawdown during the flow period of 0.5 kPa (0.05 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response". Although the response is very low it is clearly caused by the pumping in KLX07A (193.00-313.00) and a transient analysis was performed.

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. The results of the analysis should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-10.

Selected representative parameters

The recommended transmissivity of $1.6\cdot10^{-3}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $7.0\cdot10^{-4}$ m²/s to $7.0\cdot10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.2.11 Response KLX02, Section 6 (348.00-451.00 m)

A total drawdown during the flow period of 1.7 kPa (0.17 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 $(s_p/Q_p) \cdot \ln(r_s/r_0)$ are rated as "low response"

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are very noisy. However, both phases were analysed but the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-2-11.

Selected representative parameters

The recommended transmissivity of $1.0 \cdot 10^{-3}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $6.0 \cdot 10^{-4}$ m²/s to $6.0 \cdot 10^{-3}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.2.12 Response KLX02, Section 7 (209.00-347.00 m)

Comments to test

A total drawdown during the flow period of 6.9 kPa (0.70 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 9.3 min (557 s) after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification for the CRw phase and this phase was conducted using the simplest model available, homogeneous radial flow. For the analysis of the CRwr phase a two shell composite radial flow model was chosen. The analysis is presented in Appendix 7-2-12.

Selected representative parameters

The recommended transmissivity of $2.4 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0 \cdot 10^{-5}$ m²/s to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show some inconsistency concerning the chosen flow model. But the general results are very similar and no further analysis is recommended.

7.2.13 Response KLX02, Section 8 (202.95-208.00 m)

Comments to test

A total drawdown during the flow period of 6.3 kPa (0.64 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 28.6 min (1,717 s) after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases were amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-2-13.

Selected representative parameters

The recommended transmissivity of $1.7\cdot10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0\cdot10^{-5}$ m²/s to $3.0\cdot10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.2.14 Response KLX07B, Section 1 (112.00-200.00 m)

Comments to test

A total drawdown during the flow period of 7.7 kPa (0.79 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 16.3 min (978 s) after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw phase a two shell composite and for the CRw phase a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-2-14.

Selected representative parameters

The recommended transmissivity of $1.2 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0 \cdot 10^{-5}$ m²/s to $3.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show some inconsistency concerning the chosen flow model. But the general results are very similar and no further analysis is recommended.

7.2.15 Response KLX07B, Section 2 (49.00–111.00 m)

Comments to test

A total drawdown during the flow period of 7.9 kPa (0.81 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 3.5 min (212 s) after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "excellent response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-2-15.

Selected representative parameters

The recommended transmissivity of $1.5 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0 \cdot 10^{-5}$ m²/s to $3.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.2.16 Response KLX07B, Section 3 (0.00-48.00 m)

Comments to test

A total drawdown during the flow period of 7.8 kPa (0.80 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 52 s after pump start in KLX07A (193.00–313.00). The calculated index 1 (r_s^2/dt_L) is rated as "excellent response time", index 2 (s_p/Q_p) as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

The CRw and CRwr phases are influenced by tidal effects and the recorded data is noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw and CRwr phases a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-2-16.

Selected representative parameters

The recommended transmissivity of $2.2 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $9.0 \cdot 10^{-5}$ m²/s to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.3 KLX07A Test section 335.00-455.00 m pumped

This interference test was conducted as constant rate pump test phase followed by a recovery pressure phase in the source section. The mean flow rate was 18.1 l/min with a draw down of 114 kPa. In sum 11 observation sections responded due to the pumping. Table 7-4 summarizes the responding test sections and selected parameters. Figure 7-5 shows the drawdown of the observed sections related to the distance and Figure 7-6 the borehole response map. The pumped borehole KLX07A is shown with consideration of the effective borehole radius $r_{\rm wf}$. In the following chapters the response analysis of each responded section is presented.

Table 7-4. Observed test sections and selected parameters (Section 335.00–455.00 m pumped).

Source borehole		Section (m)	Flow rate Qm (I/min)	Draw- down (m)	r _{wf} (m)				
KLX07A		335.00-455.00	18.1	11.62	1.6E-02				
Observa- tion borehole	Sec No	Section (m)	Distance r _s (m)	Draw- down s _p (m)	dt _L (s)	Index 1 r _s ²/dt _L (m²/s)	Index 2 s _p /Q _p (s/m²)	Index 2 New (s_p/Q_p) · $In(r_s/r_0)$ (s/m^2)	Diffusivity ŋ (m²/s)
KLX07A	Pa Pb	11.80–334.00 456.00–844.73	222.10 255.37	n.r. n.r.	_	_	_		
HLX01	1	16.00-100.63	921.51	n.r.	_	_	_	_	_
HLX02	1	0.60-132.00	1,775.52	n.r.	_	_	_	_	_
HLX06	1	1.00-100.00	877.25	n.r.	_	_	_	_	_
HLX07	1	16.00-100.00	1,066.39	n.r.	_	_	_	_	_
HLX10	1	3.00-85.00	259.56	n.r.	_	_	_	_	_
HLX11	1 2	17.00–70.00 6.00–16.00	318.19 333.03	0.2 0.2	2,203 7,020	45.96 H 15.80 H	675.08 675.08	3,890.24 3,921.01	6.22E-01 6.31E-01
HLX13	1	11.87-200.02	1,613.78	n.r.	_	_	_	_	_
HLX14	1	11.00-155.90	1,627.01	n.r.	_	_	_	_	_
HLX21	1 2	81.00–150.00 9.10–80.00	451.13 460.82	0.36 0.35	n.c. n.c.	n.c. n.c.	1,181.39 1,147.63	7,220.36 7,038.45	7.03E00 2.77E00
HLX22	1 2	86.00–163.20 9.19–85.00	483.00 500.00	0.37 0.20	n.c. n.c.	n.c. n.c.	1,215.14 675.08	7,509.59 4,195.35	2.32E00 3.80E00
HLX23	1 2	61.00–160.20 6.10–60.00	429.24 438.38	0.01)* 0.02)*	n.c. n.c.	n.c. n.c.	n.c.	n.c. n.c.	n.c. n.c.
HLX24	1 2	41.00–175.20 9.10–40.00	428.99 471.05	0.02)* n.r.	n.c. –	n.c.	n.c.	n.c.	n.c.
HLX25	1 2	61.00–202.50 6.12–60.00	1,492.02 1,499.84	n.r. n.r.	_ _		_		
HLX30	1 2	101.00–163.40 9.10–100.00	1,198.56 1,222.22	n.r. n.r.	_ _		_		
HLX31	1	9.10-133.20	1,154.65	n.r.	_	_	_	_	_
HLX33	1 2	31.00–202.10 9.10–30.00	658.22 726.43	n.r. n.r.	_ _	_			_ _
HLX34	1	9.00-151.80	1,879.72	n.r.	_	_	_	_	_
HLX35	1 2	65.00–151.50 6.00–64.00	1,864.73 1,931.18	n.r. n.r.	_ _	_ _	- -		_ _
KLX01	1 2	705.00–1,077.99 191.00–704.00	1,368.18 1,226.61	n.r. n.r.	_ _	_ _	_ _		_ _
	3 4	171.00–190.00 1.00–170.00	1,213.05 1,222.04	n.r. n.r.	_ _	_ _	_ _		_ _

Source borehole		Section (m)	Flow rate Qm (I/min)	Draw- down (m)	r _{wf} (m)				
KLX07A		335.00-455.00	18.1	11.62	1.6E-02				
Observa- tion borehole	Sec No	Section (m)	Distance r _s (m)	Draw- down s _p (m)	dt _L (s)	Index 1 r _s ²/dt _L (m²/s)	Index 2 s _p /Q _p (s/m²)	Index 2 New (s_p/Q_p) · $In(r_s/r_0)$ (s/m^2)	Diffusivity ŋ (m²/s)
KLX02	1	1,165.00-1,700.00	1,199.67	n.r.	_	_	-	_	_
	2	1,145.00–1,164.00	931.10	n.r.	-	_	-	_	_
	3	718.00–1,144.00	721.66	n.r.	-	_	-	_	_
	4	495.00–717.00	443.26	n.r.	_	_	-	_	_
	5	452.00-494.00	353.61	n.r.	_	_	_	_	-
	6	348.00–451.00	317.84	0.06)*	n.c.	n.c.	n.c.	n.c.	3.37E00
	7	209.00–347.00	293.03	0.20	n.c.	n.c.	506.31	2,875.97	7.31E00
	8	202.95–208.00	301.92	0.16	n.c.	n.c.	371.29	2,120.14	n.c.
KLX04	1	898.00-1,000.00	1,367.48	n.r.	_	_	_	_	_
	2	870.00-897.00	1,341.80	n.r.	_	_	_	_	_
	3	686.00-869.00	1,304.87	n.r.	_	_	_	_	_
	4	531.00-685.00	1,258.31	n.r.	_	_	_	_	_
	5	507.00-530.00	1,241.13	n.r.	_	_	_	_	_
	6	231.00-506.00	1,224.52	n.r.	_	_	_	_	_
	7	163.00-230.00	1,224.05	n.r.	_	_	_	_	_
	8	12.24-162.00	1,234.59	n.r.	_	_	_	_	_
KLX07B	1	112.00-200.00	280.96	0.16	2,238	35.27 H	540.06	3,044.99	1.65E01
	2	49.00-111.00	332.03	0.17	1,852	59.53 H	573.82	3,331.13	9.63E00
	3	0.00-48.00	375.09	0.16	1,165	120.77 E	540.06	3,201.04	5.18E00

^{)*} no response according to SKB 330.003 (Bilagor B); see Chapter 4.6.1 for greater detail.

Key for index 1, 2 and 2 new see Table 7-1.

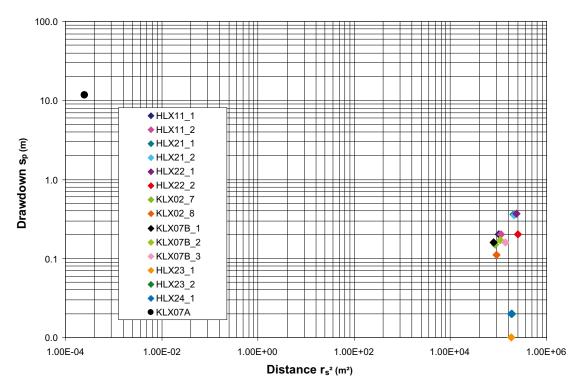


Figure 7-5. Distance vs. Drawdown for the responded test sections; KLX07A Section 335.00–455.00 m pumped.

n.c. not calculated due to strong natural fluctuations (tidal effects).

n.r. no response due to pumping in source.

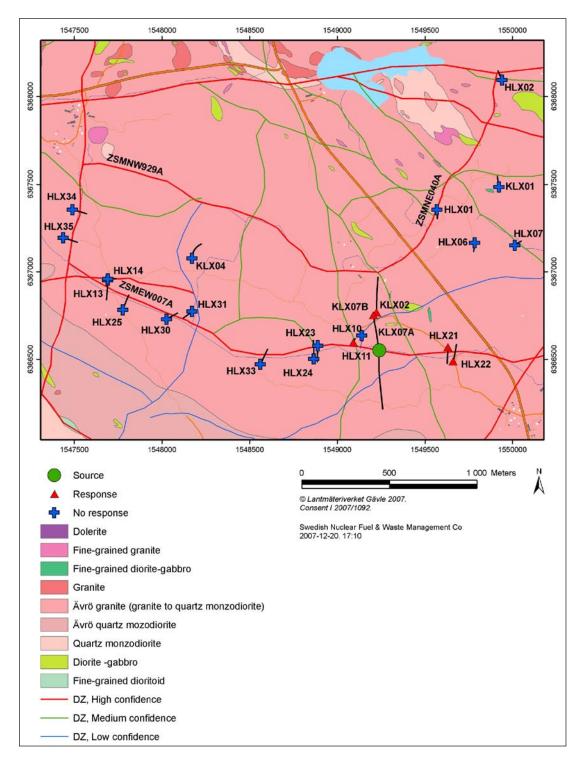


Figure 7-6. Borehole response map when pumping KLX07A 335.00-455.00 m.

7.3.1 Response HLX11, Section 1 (17.00–70.00 m)

Comments to test

A total drawdown during the flow period of 2.0 kPa (0.20 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 36.7 min (2,203 s) after pump start in KLX07A (335.00–455.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of the low response and overlaying tidal effects the recorded CRw phase is noisy, but is amenable for qualitative analysis. The CRwr phase is influenced by the changing flow rate in borehole HLX10 and the results of the analysis should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-1.

Selected representative parameters

The recommended transmissivity of $1.9 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.3.2 Response HLX11, Section 2 (6.00–16.00 m)

Comments to test

A total drawdown during the flow period of 2.0 kPa (0.20 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 1.95 h (7,020 s) after pump start in KLX07A (335.00–455.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because to the low response and overlaying tidal effects the recorded CRw phase is noisy, but is amenable for qualitative analysis. The CRwr phase is strongly influenced by the changing flow rate in borehole HLX10 and overlaying background effects and was not analysed.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw phase a homogeneous radial flow model was chosen. The analysis is presented in Appendix 7-3-2.

Selected representative parameters

The recommended transmissivity of $1.8\cdot10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0\cdot10^{-5}$ m²/s to $4.0\cdot10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

No further analysis recommended.

7.3.3 Response HLX21, Section 1 (81.00–150.00 m)

Comments to test

A total drawdown during the flow period of 3.5 kPa (0.36 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) is rated as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

Because of the low response and overlaying background effects the recorded CRw and CRwr phases are noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-3.

Selected representative parameters

The recommended transmissivity of $1.5\cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0\cdot 10^{-5}$ m²/s to $4.0\cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show good consistency. No further analysis recommended.

7.3.4 Response HLX21, Section 2 (9.10-80.00 m)

Comments to test

A total drawdown during the flow period of 3.4 kPa (0.35 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) is rated as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. For the analysis of the CRw phase a composite radial flow model was chosen. The poor quality of data did not allow for specific model identification for the analysis of the CRwr phases and the simplest model was chosen for the analysis, homogeneous radial flow. The analysis is presented in Appendix 7-3-4.

Selected representative parameters

The recommended transmissivity of $2.2 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase (outer zone), which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $7.0 \cdot 10^{-5}$ m²/s to $4.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show some inconsistency concerning the chosen flow model. But the general results are very similar and no further analysis is recommended.

7.3.5 Response HLX22, Section 1 (86.00–163.20 m)

Comments to test

A total drawdown during the flow period of 3.6 kPa (0.37 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) is rated as "low response" and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "medium response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-5.

Selected representative parameters

The recommended transmissivity of $1.7 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $7.0 \cdot 10^{-5}$ m²/s to $5.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.3.6 Response HLX22, Section 2 (9.19-85.00 m)

Comments to test

A total drawdown during the flow period of 2.0 kPa (0.20 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 $(s_p/Q_p) \cdot \ln(r_s/r_0)$ are rated as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. Both phases are amenable for qualitative analysis.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-6.

Selected representative parameters

The recommended transmissivity of $2.2 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRw phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $7.0 \cdot 10^{-5}$ m²/s to $5.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

7.3.7 Response HLX23, Section 1 (61.00–160.20 m)

Comments to test

A total drawdown during the flow period of 0.1 kPa (0.01 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response".

Although the response is very low it is clearly caused by the pumping in KLX07A (335.00–455.00). Due to the poor data quality a transmissivity range was estimated by plotting the pressure derivatives of both phases in log-log coordinates.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-7.

Selected representative parameters

The range for the borehole transmissivity is estimated to be $5.0 \cdot 10^{-4}$ m²/s to $7.0 \cdot 10^{-3}$ m²/s. Due to the poor data quality no better estimation is possible.

Because of the poor data quality no further analysis is recommended.

7.3.8 Response HLX23, Section 2 (6.10-60.00 m)

Comments to test

A total drawdown during the flow period of 0.2 kPa (0.02 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response".

Although the response is very low it is clearly caused by the pumping in KLX07A (335.00–455.00). Due to the poor data quality a transmissivity range was estimated by plotting the pressure derivatives of both phases in log-log coordinates.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-8.

Selected representative parameters

The range for the borehole transmissivity is estimated to be $6.0 \cdot 10^{-4}$ m²/s to $6.0 \cdot 10^{-3}$ m²/s. Due to the poor data quality no better estimation is possible.

Because of the poor data quality no further analysis is recommended.

7.3.9 Response HLX24, Section 1 (41.00–175.20 m)

Comments to test

A total drawdown during the flow period of 0.2 kPa (0.02 m) was observed in this section. Because of the low drawdown $s_p < 0.1$ m the indices are rated as "no response".

Although the response is very low it is clearly caused by the pumping in KLX07A (335.00–455.00). Due to the poor data quality a transmissivity range was estimated by plotting the pressure derivatives of both phases in log-log coordinates.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-9.

Selected representative parameters

The range for the borehole transmissivity is estimated to be $6.0 \cdot 10^{-4}$ m²/s to $8.0 \cdot 10^{-3}$ m²/s. Due to the poor data quality no better estimation is possible.

Because of the poor data quality no further analysis is recommended.

7.3.10 Response KLX02, Section 6 (348.00-451.00 m)

Comments to test

A total drawdown during the flow period of 0.6 kPa (0.06 m) was observed in this section. Because of the low drawdown $s_n < 0.1$ m the indices are rated as "no response".

Although the response is very low it is clearly caused by the pumping in KLX07A (335.00–455.00). Due to the poor data quality a transmissivity range was estimated by plotting the pressure derivatives of both phases in log-log coordinates.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-10.

Selected representative parameters

The range for the borehole transmissivity is estimated to be $2.0 \cdot 10^{-4}$ m²/s to $5.0 \cdot 10^{-3}$ m²/s. Due to the poor data quality no better estimation is possible.

Because of the poor data quality no further analysis is recommended.

7.3.11 Response KLX02, Section 7 (209.00–347.00 m)

Comments to test

A total drawdown during the flow period of 1.5 kPa (0.15 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) are rated as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy and the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-11.

Selected representative parameters

The recommended transmissivity of $2.7 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $7.0 \cdot 10^{-5}$ m²/s to $6.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.3.12 Response KLX02, Section 8 (202.95-208.00 m)

Comments to test

A total drawdown during the flow period of 1.1 kPa (0.11 m) was observed in this section. Due to the strong natural fluctuations no response time was determined. The calculated index 2 (s_p/Q_p) and the new index 2 $(s_p/Q_p) \cdot \ln(r_s/r_0)$ are rated as "low response".

Because to the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy and the results should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-12.

Selected representative parameters

The recommended transmissivity of $3.5\cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase, which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0\cdot 10^{-5}$ m²/s to $7.0\cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.3.13 Respnse KLX07B, Section 1 (112.00-200.00 m)

Comments to test

A total drawdown during the flow period of 1.6 kPa (0.16 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 37.3 min (2,238 s) after pump start in KLX07A (335.00–455.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. Additionally, the CRwr phase is influenced by the changing flow rate in borehole HLX10 and only the early time data was used to derive the transmissivity. The results of the analysis should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-13.

Selected representative parameters

The recommended transmissivity of $2.3 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase (early time data), which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $6.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.3.14 Response KLX07B, Section 2 (49.00-111.00 m)

Comments to test

A total drawdown during the flow period of 1.7 kPa (0.17 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 30.9 min (1,852 s) after pump start in KLX07A (335.00–455.00). The calculated index 1 (r_s^2/dt_L) is rated as "high response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of to the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. Additionally, the CRwr phase is influenced by the changing flow rate in borehole HLX10 and only the early time data was used to derive the transmissivity. The results of the analysis should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-14.

Selected representative parameters

The recommended transmissivity of $2.6 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase (early time data), which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $6.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.3.15 Response KLX07B, Section 3 (0.00-48.00 m)

Comments to test

A total drawdown during the flow period of 1.6 kPa (0.16 m) was observed in this section. A drawdown of 0.01 m was reached after appr. 19.4 min (1,165 s) after pump start in KLX07A (335.00–455.00). The calculated index 1 (r_s^2/dt_L) is rated as "excellent response time", index 2 (s_p/Q_p) and the new index 2 (s_p/Q_p)·ln(r_s/r_0) as "low response".

Because of the low response and overlaying tidal effects the recorded CRw and CRwr phases are noisy. Additionally, the CRwr phase is influenced by the changing flow rate in borehole HLX10 and only the early time data was used to derive the transmissivity. The results of the analysis should be regarded as order of magnitude only.

Flow regime and calculated parameters

The flow dimension is interpreted from the slope of the semi-log derivative plotted in log-log coordinates. The poor quality of data did not allow for specific model identification. The analysis of the CRw and CRwr phases was conducted using the simplest model available, homogeneous radial flow. The analysis is presented in Appendix 7-3-15.

Selected representative parameters

The recommended transmissivity of $2.9 \cdot 10^{-4}$ m²/s was derived from the analysis of the CRwr phase (early time data), which shows the best data and derivative quality. The confidence range for the borehole transmissivity is estimated to be $8.0 \cdot 10^{-5}$ m²/s to $6.0 \cdot 10^{-4}$ m²/s. The flow dimension during the test is 2. According to the background effects no freshwater head could be derived from straight line interpolation in the Horner plot.

The analyses of the CRw and CRwr phases show consistency. No further analysis recommended.

7.4 KLX07A Test section 610.00–655.00 m pumped

This interference test was conducted as constant rate pump test phase followed by a recovery pressure phase in the source section. The mean flow rate was 17.6 l/min with a drawdown of 309 kPa. Only the section below the pumped section reacted due to pumping. No observation sections in the other boreholes responded. The calculated indices for the KLX07A bottom section (656.00–844.73 m) are "high response time" for index 1 (58.8 m²/s), "medium response" for index 2 (18,765.6 s/m²) and "high response" for index 2 new (88,269.7 s/m²).

7.5 KLX07A Test section 747.00-792.00 m pumped

This interference test was conducted as constant rate pump test phase followed by a recovery pressure phase in the source section. The mean flow rate was 20.9 l/min with a drawdown of 160 kPa. Only the section below the pumped section reacted due to pumping. No observation sections in the other boreholes responded. The calculated indices for the KLX07A bottom section (793.00–844.73 m) are "medium response time" for index 1 (8.8 m²/s), "medium response" for index 2 (15,510.0 s/m²) and "high response" for index 2 new (61,830.3 s/m²).

8 Synthesis

The synthesis chapter summarizes the basic test parameters and analysis results.

8.1 Summary of results

Table 8-1. General test data from constant rate pump tests.

Borehole ID	Borehole secup	Borehole Seclow	Test start	Date and time Test stop	Q _p	Q _m	tp	t _F	p ₀	p _i	p _p	p _F	Te _w	Analys	hases measured sed test phases
	(m)	(m)	YYYYMMDD hh:mm	YYYYMMDD hh:mm	(m³/s)	(m³/s)	(s)	(s)	(kPa)	(kPa)	(kPa)	(kPa)	(°C)	marke	d bold
KLX07A	103.20	193.20	20051028 09:51	20051103 15:53	6.59E-04	6.80E-04	261,960	333,120	1,478	1,478	1,432	1,480	9.3	CRw	CRwr
KLX07A	335.00	455.00	20051104 21:35	20051112 08:36	2.97E-04	3.02E-04	289,535	351,420	3,371	3,374	3,260	3,372	12.0	CRw	CRwr
KLX07A	193.00	313.00	20051112 18:54	20051120 20:17	6.07E-04	6.07E-04	244,010	449,640	2,361	2,361	2,301	2,368	10.7	CRw	CRwr
KLX07A	747.00	792.00	20051122 21:14	20051129 10:52	3.43E-04	3.48E-04	236,460	327,420	5,963	5,957	5,797	5,952	16.1	CRw	CRwr
KLX07A	610.00	655.00	20051130 10:14	20051208 08:54	2.83E-04	2.93E-04	261,120	420,780	4,896	4,880	4,571	4,873	14.3	CRw	CRwr

Nomenclature

Q_p Flow in test section immediately before stop of flow [m³/s].

 $Q_{m} \qquad \qquad \text{Arithmetical mean flow during perturbation phase } [m^{3}/s].$

 t_p Duration of perturbation phase [s].

 $t_{\scriptscriptstyle f} \qquad \qquad \text{Duration of recovery phase [s]}.$

p₀ Pressure in borehole before packer inflation [kPa].

Pressure in test section before start of flowing [kPa].

pp Pressure in test section before stop of flowing [kPa].

 $p_{\scriptscriptstyle F}$ Pressure in test section at the end of the recovery [kPa].

Te_w Temperature in test section.

Test phases CRw: constant rate pump (withdrawal) phase.

CRwr: recovery phase following the constant rate pump (withdrawal) phase.

Table 8-2. Results from analysis of constant rate pump tests.

Interval po	sition		Stationary		Transien	t analysis														
			paramete	rs	Flow regi	ime	Formation	n paramete	rs										Static co	nditions
Borehole ID	up m btoc	low m btoc	Q/s m²/s	T _M m²/s	Perturb. Phase	Recovery Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	C m³/Pa	ξ -	dt₁ min	dt ₂ min	r _{inner} m	p* kPa	h _{wif} masl
KLX07A	103.20	193.20	1.4E-04	1.8E-04	WBS2	WBS2	3.3E-04	#NV	2.8E-04	#NV	2.8E-04	9.0E-05	4.0E-04	4.1E-07	0.4	4	1,111	5,338.1	1,481.2	6.26
KLX07A	335.00	455.00	2.6E-05	3.4E-05	WBS2	WBS2	8.5E-05	#NV	1.2E-04	#NV	1.2E-04	8.0E-05	2.0E-04	1.6E-08	18.2	2	1,040	4,448.8	3,374.6	7.49
KLX07A	193.00	313.00	9.9E-05	1.3E-04	WBS2	WBS2	2.4E-04	#NV	2.5E-04	#NV	2.5E-04	1.0E-04	4.0E-04	5.7E-08	4.0	2	1,450	6,015.0	2,365.3	6.02
KLX07A	747.00	792.00	2.1E-05	2.5E-05	WBS22	WBS2	9.6E-06	4.1E-05	3.4E-05	#NV	3.4E-05	2.0E-05	5.0E-05	5.9E-08	-2.1	3	3,710	3,127.0	5,957.7	10.05
KLX07A	610.00	655.00	9.0E-06	1.1E-05	WBS22	WBS22	1.2E-05	2.2E-05	9.0E-06	2.2E-05	9.0E-06	8.0E-06	2.0E-05	3.6E-08	-4.1	5	60	234.3	4,875.9	6.45

Nomenclature

Q/s	Specific capacity.

T_M Transmissivity according to /Moye 1967/.

Flow regime The flow regime description refers to the recommended model used in the transient analysis. WBS denotes wellbore storage and skin and is followed by a set of numbers describing the flow dimension used in the analysis (1 = linear flow, 2 = radial flow, 3 = spherical flow). If only one number is used (e.g. WBS2 or 2) a homogeneous flow

model (1 composite zone) was used in the analysis, if two numbers are given (WBS22 or 22) a 2 zones composite model was used.

Transmissivity derived from the analysis of the perturbation phase (CRw). In case a homogeneous flow model was used only one T_f value is reported, in case a two zone composite flow model was used both T_{f1} (inner zone) and T_{f2} (outer zone) are given.

 T_s Transmissivity derived from the analysis of the recovery phase (CRwr). In case a homogeneous flow model was used only one T_s value is reported, in case a two zone

composite flow model was used both T_{s1} (inner zone) and T_{s2} (outer zone) are given.

T_T Recommended transmissivity.

T_{TMIN} / T_{TMAX} Confidence range lower/upper limit.

C Wellbore storage coefficient.

Skin factor (calculated based on a Storativity of 1.10^{-6}).

dt₁ / dt₂ Estimated start/stop time of evaluation for the recommended transmissivity (T_T).

r_{inner} Radius of the inner zone (see Chapter 5.5.9).

p* The parameter p* denoted the static formation pressure (measured at transducer depth) and was derived from the HORNER plot of the CHir phase using straight line or

type-curve extrapolation.

h_{wif} Fresh-water head (based on transducer depth and p*).

#NV Not analysed/no values.

Table 8-3. Results from analysis of the interference tests.

Pumped s	ection	Observation	borehole	Transier	nt analysi	s										Index cale	culation		
				Flow reg	gime	Formatio	n Parame	ter								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	Τ _τ m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt ₁ min	dt ₂ min	Index 1 r _{s²} /dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	103.20-193.20	KLX07A_Pa	11.80-102.20	_	-	_	_	_	_	_	-	_	_	_	_	1.91	1,499.07	6,810.72	_
		KLX07A_Pb	194.20-844.73	_	-	_	_	_	_	_	-	_	_	_	_	5,235.1	2,248.61	13,287.2	_
		HLX01_1	16.00-100.63	_	-	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	oumping	_
		HLX02_1	0.60-132.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	oumping	_
		HLX06_1	1.00-100.00	-	-	_	-	_	-	_	-	_	_	_	_	No respo	nse due to p	oumping	-
		HLX07_1	16.00-100.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX10_1	3.00-85.00	2	2	2.1E-04	-	1.4E-04	-	1.4E-04	6.0E-05	5.0E-04	9.3E-05	1,074	4,020	53.21	1,723.93	8,030.64	1.5E00
		HLX11_1	17.00-70.00	2	2	2.1E-04	-	7.8E-05	-	2.1E-04	8.0E-05	4.0E-04	2.2E-04	858	2,952	16.87	1,214.25	6,164.05	4.0E-01
		HLX11_2	6.00-16.00	2	2	1.4E-04	_	5.8E-05	-	1.4E-04	8.0E-05	3.0E-04	3.5E-04	1,788	2,718	4.85	1,169.28	6,039.78	9.2E-01
		HLX13_1	11.87–200.02	_	-	_	-	_	-	_	_	_	_	-	_	No respo	nse due to p	umping	-
		HLX14_1	11.00-115.90	_	-	-	-	-	-	-	_	-	_	-	-	No respo	nse due to p	oumping	-
		HLX21_1	81.00-150.00	2	2	4.0E-04	-	3.6E-04	-	4.0E-04	1.0E-04	8.0E-04	1.3E-04	2,238	3,984	17.38	389.76	2,368.58	2.9E00
		HLX21_2	9.10-80.00	2	2	3.9E-04	-	3.7E-04	-	3.9E-04	1.0E-04	8.0E-04	1.3E-04	1,548	4,122	20.10	359.78	2,185.12	3.1E00
		HLX22_1	86.00-163.20	2	2	3.8E-04	-	3.3E-04	-	3.8E-04	1.0E-04	8.0E-04	1.2E-04	1,536	3,996	20.28	419.74	2,579.86	2.6E00
		HLX22_2	9.19-85.00	2	2	6.8E-04	-	5.3E-04	-	6.8E-04	4.0E-04	9.0E-04	2.7E-04	2,352	3,996	16.30	224.86	1,386.83	3.3E00
		HLX23_1	61.00-160.20	2	2	2.6E-03	-	2.2E-03	-	2.6E-03	1.0E-03	5.0E-03	6.4E-04	1,548	3,984	n.a.	n.a.	n.a.	8.4E00
		HLX23_2	6.10-60.00	2	2	1.6E-03	-	1.3E-03	-	1.6E-03	9.0E-04	4.0E-03	2.0E-04	894	3,708	n.a.	n.a.	n.a.	4.1E00
		HLX24_1	41.00-175.20	2	2	2.2E-03	-	2.1E-03	-	2.2E-03	1.0E-03	5.0E-03	6.3E-04	1,872	3,912	n.a.	n.a.	n.a.	3.5E00
		HLX24_2	9.10-40.00	-	-	-	-	_	_	_	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX25_1	61.00-202.50	No response due to pumping		oumping	-												
		HLX25 2	6.12-60.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	oumpina	_

Pumped s	ection	Observation	borehole	Transier	nt analysi	s										Index ca	culation		
				Flow reg	gime	Formatio	n Parame	eter								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	S	dt₁ min	dt ₂ min	Index 1 r _s ² /dt _L	Index 2 s _p /Q _p	Index 2 new (s _p /Q _p)· In(r _s /r ₀)	Diffusivity ŋ (T/S)
KLX07A	103.20-193.20	HLX30_1	101.00–163.40	_	_	_	-	_	_	_	_	_	_	_	_	No respo	onse due to	pumping	_
		HLX30_2	9.10-100.00	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		HLX31_1	9.10-133.20	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		HLX33_1	31.00-202.10	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		HLX33_2	9.10-30.00	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		HLX34_1	9.00-151.80	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		HLX35_1	65.00-151.50	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		HLX35_2	6.00-64.00	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		KLX01_1	705.00-1,077.99	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	_
		KLX01_2	191.00-704.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX01_3	171.00–190.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX01_4	1.00-170.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX02_1	1,165.00-1,700.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX02_2	1,145.00-1,164.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX02_3	718.00–1,144.00	-	-	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	pumping	_
		KLX02_4	495.00-717.00	-	-	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	pumping	_
		KLX02_5	452.00-494.00	-	-	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	pumping	_
		KLX02_6	348.00-451.00	2	2	6.9E-04	_	6.3E-04	_	6.9E-04	2.0E-04	1.0E-05	2.3E-04	1,506	4,002	12.19	254.84	1,462.06	3.7E-01
		KLX02_7	209.00-347.00	2	2	2.3E-04	_	1.8E-04	_	2.3E-04	8.0E-05	5.0E-04	7.3E-05	1,242	4,038	23.62	1,244.23	6,606.06	3.2E00
		KLX02_8	202.95–208.00	2	2	2.4E-04	-	2.0E-04	-	2.4E-04	1.0E-04	4.0E-04	6.7E-04	1,008	2,340	2.57	629.61	3,148.54	3.1E00
		KLX04_1	898.00-1,000.00	-	_	_	_	_	_	_	-	_	_	_	_	No respo	onse due to	pumping	-
		KLX04_2	870.00–897.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	onse due to	pumping	-
		KLX04_3	686.00-869.00	-	-	-	-	_	-	_	-	_	_	_	_	No respo	nse due to	pumping	-

Pumped s	ection	Observation	borehole	Transier	nt analysi	s										Index cal	culation		
				Flow reg	jime	Formatio	n Paramet	er								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _{s²} /dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	103.20-193.20	KLX04_4	531.00-685.00	_	_	_	-	_	_	_	_	_	_	_	_	No respo	nse due to p	oumping	_
		KLX04_5	507.00-530.00	-	-	-	_	_	_	-	_	-	-	-	-	No respo	nse due to p	oumping	-
		KLX04_6	231.00-506.00	-	-	-	_	_	_	-	_	-	-	-	-	No respo	nse due to p	oumping	-
		KLX04_7	163.00–230.00	_	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		KLX04_8	12.24-162.00	_	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		KLX07B_1	112.00–200.00	22	22	1.4E-04	2.8E-04	1.3E-04	2.6E-04	1.4E-04	9.0E-05	4.0E-04	2.4E-04	144	366	21.26	1,514.06	6,699.49	1.1E00
		KLX07B_2	49.00-111.00	22	2	1.7E-04	3.8E-04	1.5E-04	-	1.7E-04	9.0E-05	4.0E-04	2.2E-04	-	-	13.86	1,364.15	6,182.14	7.6E-01
		KLX07B_3	0.00-48.00	2	2	2.6E-04	-	1.4E-04	-	1.4E-04	1.0E-04	4.0E-04	1.3E-04	1,038	3,810	8.42	1,199.26	5,849.81	5.9E-01
KLX07A	193.00-313.00	KLX07A_Pa	11.80–192.00	_	_	_	-	-	-	-	-	_	_	-	-	990.94	2,520.42	12,647.3	_
		KLX07A_Pb	314.00-844.73	_	-	_	_	_	_	_	_	_	_	-	-	32.07	840.14	4,862.74	-
		HLX01_1	16.00-100.63	_	-	_	_	_	_	_	_	_	_	-	-	No respo	nse due to p	oumping	-
		HLX02_1	0.60-132.00	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to p	oumping	-
		HLX06_1	1.00-100.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX07_1	16.00-100.00	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to p	oumping	-
		HLX10_1	3.00-85.00	2	2	2.3E-04	_	1.8E-04	_	1.8E-04	6.0E-05	5.0E-04	1.3E-05	162	3,384	111.84	1,276.31	6,345.06	1.5E01
		HLX11_1	17.00-70.00	2	2	1.6E-04	-	7.9E-05	-	1.6E-04	9.0E-05	4.0E-04	1.1E-04	1,212	4,020	46.97	1,377.07	7,357.54	7.1E-01
		HLX11_2	6.00-16.00	2	2	1.1E-04	-	5.6E-05	-	1.1E-04	9.0E-05	3.0E-04	1.6E-04	1,182	1,920	15.23	1,444.24	7,823.89	1.5E00
		HLX13_1	11.87–200.02	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX14_1	11.00–115.90	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX21_1	81.00-150.00	2	2	3.5E-04	-	7.0E-04	-	3.5E-04	8.0E-05	8.0E-04	1.7E-04	-	-	n.a.	335.87	2,031.75	2.6E00
		HLX21_2	9.10-80.00	2	2	3.9E-04	-	8.9E-04	-	3.9E-04	8.0E-05	8.0E-04	1.5E-04	-	-	n.a.	335.87	2,034.46	2.1E00
		HLX22_1	86.00-163.20	2	2	7.0E-04	-	9.1E-04	-	9.1E-04	3.0E-04	2.0E-03	1.6E-04	-	-	n.a.	369.46	2,262.00	7.2E00
		HLX22_2	9.19-85.00	2	2	1.2E-03	_	3.7E-03	_	1.2E-03	7.0E-04	4.0E-03	1.7E-04	-	-	n.a.	167.94	1,032.90	5.9E00

Pumped s	ection	Observation	n borehole	Transier	ıt analysi	s										Index cal	culation		
				Flow reg	ime	Formatio	n Paramet	er								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt₂ min	Index 1 r _{s²} /dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	193.00–313.00	HLX23_1	61.00–160.20	2	2	2.8E-03	_	3.1E-03	_	2.8E-03	8.0E-04	5.0E-03	1.6E-04	n.a.	n.a.	n.a.	n.a.	n.a	2.1E01
		HLX23_2	6.10-60.00	22	22	2.9E-03	9.9E-04	2.7E-03	7.7E-04	2.9E-03	7.0E-04	5.0E-03	1.3E-04	n.a.	n.a.	n.a.	n.a.	n.a.	1.8E01
		HLX24_1	41.00-175.20	2	2	1.6E-03	-	2.1E-03	-	1.6E-03	7.0E-04	7.0E-03	5.4E-04	n.a.	n.a.	n.a.	n.a.	n.a.	2.9E00
		HLX24_2	9.10-40.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX25_1	61.00-202.50	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX25_2	6.12-60.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX30_1	101.00-163.40	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX30_2	9.10-100.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX31_1	9.10-133.20	-	_	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		HLX33_1	31.00-202.10	-	_	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		HLX33_2	9.10-30.00	-	_	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		HLX34_1	9.00-151.80	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	-
		HLX35_1	65.00-151.50	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX35_2	6.00-64.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX01_1	705.00-1,077.99	-	_	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		KLX01_2	191.00-704.00	-	_	_	-	_	_	_	_	_	_	-	_	No respo	nse due to	pumping	_
		KLX01_3	171.00-190.00	-	_	_	-	_	_	_	_	_	_	-	_	No respo	nse due to	pumping	_
		KLX01_4	1.00-170.00	-	_	_	-	_	_	_	_	_	_	-	_	No respo	nse due to	pumping	_
		KLX02_1	1,165.00-1,700.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX02_2	1,145.00-1,164.00	-	_	_	_	_	_	_	_	_	_	-	_	No respo	nse due to	pumping	_
		KLX02_3	718.00–1,144.00		_	-	-	-	_	_	-	_	_	_	_	No respo	nse due to	pumping	_
		KLX02_4	495.00-717.00		_	-	-	-	_	_	-	_	_	_	_	No respo	nse due to	pumping	_
		KLX02_5	452.00-494.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_

Pumped s	section	Observation	borehole	Transien	t analysi	s										Index cald	culation		
				Flow reg	ime	Formatio	n Paramet	er								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _{s²} /dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	193.00–313.00	KLX02_6	348.00-451.00	2	2	1.0E-03	_	1.3E-03	_	1.0E-03	6.0E-04	6.0E-03	8.7E-05	n.a.	n.a.	n.a.	285.49	1,616.59	2.0E00
		KLX02_7	209.00-347.00	2	22	2.4E-04	_	3.0E-04	1.5E-04	2.4E-04	9.0E-05	4.0E-04	7.7E-05	990	2,400	80.07	1,158.75	6,202.52	3.1E00
		KLX02_8	202.95–208.00	2	2	2.0E-04	_	1.7E-04	-	1.7E-04	9.0E-05	3.0E-04	8.6E-05	2,064	3,708	20.97	1,057.99	5,549.95	1.2E01
		KLX04_1	898.00-1,000.00	-	-	-	-	-	-	-	-	_	_	-	-	No respon	nse due to p	umping	_
		KLX04_2	870.00-897.00	-	-	-	-	-	-	-	-	_	_	-	-	No respon	nse due to p	umping	_
		KLX04_3	686.00-869.00	-	-	-	_	-	-	-	_	_	_	-	-	No respon	nse due to p	umping	-
		KLX04_4	531.00-685.00	-	-	-	_	-	-	_	_	_	_	-	-	No respon	nse due to p	umping	-
		KLX04_5	507.00-530.00	-	-	-	_	-	-	_	_	_	_	-	-	No respon	nse due to p	umping	-
		KLX04_6	231.00-506.00	-	-	_	_	_	_	_	_	_	_	-	-	No respon	nse due to p	umping	-
		KLX04_7	163.00-230.00	-	-	_	-	-	_	-	_	_	_	_	_	No respon	nse due to p	umping	-
		KLX04_8	12.24-162.00	-	-	_	_	_	_	_	_	_	_	-	-	No respon	nse due to p	umping	-
		KLX07B_1	112.00-200.00	22	2	1.4E-04	2.5E-04	1.2E-04	_	1.2E-04	9.0E-05	3.0E-04	6.1E-05	510	3,378	22.91	1,293.10	6,476.68	1.0E01
		KLX07B_2	49.00-111.00	2	2	1.8E-04	_	1.5E-04	_	1.5E-04	9.0E-05	3.0E-04	2.4E-05	192	3,372	172.62	1,326.69	6,970.22	6.2E00
		KLX07B_3	0.00-48.00	2	2	2.2E-04	_	1.6E-04	_	2.2E-04	9.0E-05	4.0E-04	2.1E-05	246	2,964	1,046.8	1,309.90	7,142.09	1.9E00
KLX07A	335.00-455.00	KLX07A_Pa	11.80-334.00	-	-	_	-	-	_	-	_	_	_	_	-	No respon	nse due to p	umping	-
		KLX07A_Pb	456.00-844.73	-	-	_	_	_	_	_	_	_	_	-	-	No respon	nse due to p	umping	-
		HLX01_1	16.00-100.63	-	-	_	_	_	_	_	_	_	_	-	-	No respoi	nse due to p	umping	-
		HLX02_1	0.60-132.00	-	-	-	-	-	-	-	-	-	-	-	-	No respoi	nse due to p	umping	-
		HLX06_1	1.00-100.00	-	-	-	-	-	-	-	-	-	-	-	-	No respon	nse due to p	umping	-
		HLX07_1	16.00-100.00	-	-	-	-	-	-	-	-	-	-	-	-	No respon	nse due to p	umping	-
		HLX10_1	3.00-85.00	-	-	-	-	-	-	-	-	-	-	-	-	No respon	nse due to p	umping	-
		HLX11_1	17.00-70.00	2	2	1.9E-04	-	4.2E-04	-	1.9E-04	8.0E-05	4.0E-04	2.9E-04	n.a.	n.a.	45.96	675.08	3,890.24	6.2E-1
		HLX11_2	6.00-16.00	2	2	1.8E-04	-	-	-	1.8E-04	8.0E-05	4.0E-04	2.8E-04	3,228	4,110	15.80	675.08	3,921.01	6.3E-1

Pumped s	ection	Observation	n borehole	Transier	nt analysi	s										Index cal	culation		
				Flow reg	jime	Formatio	n Paramet	er								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	Τ _τ m²/s	T _{TMIN} m ² /s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _s ²/dt _L	Index 2 s _p /Q _p	Index 2 new (s _p /Q _p)· In(r _s /r ₀)	Diffusivity ŋ (T/S)
KLX07A	335.00-455.00	HLX13_1	11.87–200.02	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	oumping	_
		HLX14_1	11.00–115.90	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to p	oumping	-
		HLX21_1	81.00-150.00	2	2	1.5E-04	-	1.9E-04	-	1.5E-04	8.0E-05	4.0E-04	5.3E-05	2,016	4,050	n.a.	1,181.39	7,220.36	7.0E00
		HLX21_2	9.10-80.00	22	2	8.2E-04	2.2E-04	2.1E-04	_	2.2E-04	7.0E-05	4.0E-04	2.8E-05	3,072	4,020	n.a.	1,147.63	7,038.45	2.8E00
		HLX22-1	86.00-163.20	2	2	1.7E-04	_	1.8E-04	_	1.7E-04	7.0E-05	5.0E-04	4.6E-05	2,466	4,590	n.a.	1,215.14	7,509.59	2.3E00
		HLX22_2	9.19-85.00	2	2	2.2E-04	_	4.2E-04	_	2.2E-04	7.0E-05	5.0E-04	9.5E-05	3,114	4,050	n.a.	675.08	4,195.35	3.8E00
		HLX23_1	61.00–160.20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.0E-04	7.0E-03	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
		HLX23_2	6.10-60.00	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.0E-04	6.0E-03	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
		HLX24_1	41.00–175.20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.0E-04	8.0E-03	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
		HLX24_2	9.10-40.00	_	_	-	-	_	-	_	-	-	_	-	-	No respo	nse due to p	oumping	-
		HLX25_1	61.00-202.50	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	oumping	_
		HLX25_2	6.12-60.00	-	-	-	-	-	-	_	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX30_1	101.00-163.40	-	-	-	-	-	-	_	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX30_2	9.10-100.00	-	-	-	-	-	-	_	-	-	-	-	-	No respo	nse due to p	oumping	-
		HLX31_1	9.10-133.20	-	-	-	-	-	-	_	_	-	-	-	-	No respo	nse due to p	oumping	-
		HLX33_1	31.00-202.10	-	-	-	-	-	-	_	_	-	-	-	-	No respo	nse due to p	oumping	-
		HLX33_2	9.10-30.00	-	-	-	-	-	-	_	_	-	-	-	-	No respo	nse due to p	oumping	-
		HLX34_1	9.00-151.80	_	_	_	_	_	_	_	_	_	_	-	-	No respo	nse due to p	oumping	_
		HLX35_1	65.00–151.50	_	_	_	_	_	_	-	-	_	-	-	-	No respo	nse due to p	oumping	_
		HLX35_2	6.00-64.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		KLX01_1	705.00–1,077.99	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		KLX01_2	191.00-704.00	_	_	-	-	_	-	-	-	-	-	-	-	No respo	nse due to p	oumping	-
		KLX01_3	171.00-190.00	_	_	_	_	_	_	_	_	-	-	_	_	No respo	nse due to p	oumping	-

Pumped s	ection	Observation	borehole	Transier	nt analysi	s										Index cale	culation		
				Flow reg	jime	Formatio	n Paramet	er								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _{s²} /dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	335.00-455.00	KLX01_4	1.00-170.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to p	umping	_
		KLX02_1	1,165.00-1,700.00	-	-	-	-	_	-	-	-	_	_	-	-	No respo	nse due to p	umping	_
		KLX02_2	1,145.00-1,164.00	-	-	-	-	_	-	-	-	_	_	-	-	No respo	nse due to p	umping	-
		KLX02_3	718.00–1,144.00	-	-	-	-	_	-	-	-	_	_	-	-	No respo	nse due to p	umping	-
		KLX02_4	495.00-717.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	umping	-
		KLX02_5	452.00-494.00	_	_	-	-	_	-	_	-	_	_	_	-	No respo	nse due to p	umping	_
		KLX02_6	348.00-451.00	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2.0E-04	5.0E-03	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3.4E00
		KLX02_7	209.00-347.00	2	2	4.7E-04	-	2.7E-04	-	2.7E-04	7.0E-05	6.0E-04	3.7E-05	2,550	3,918	n.a.	506.31	2,875.97	7.3E00
		KLX02_8	202.95–208.00	2	2	5.8E-04	-	3.5E-04	-	3.5E-04	8.0E-05	7.0E-04	1.0E-04	2,418	3,804	n.a.	371.29	2,120.14	n.a.
		KLX04_1	898.00-1,000.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	umping	-
		KLX04_2	870.00–897.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	umping	-
		KLX04_3	686.00-869.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	umping	-
		KLX04_4	531.00-685.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	umping	-
		KLX04_5	507.00-530.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	umping	-
		KLX04_6	231.00-506.00	-	-	-	-	-	-	-	-	-	-	-	-	No respon	nse due to p	umping	-
		KLX04_7	163.00–230.00	-	-	-	-	-	-	-	-	-	-	-	-	No respon	nse due to p	umping	-
		KLX04_8	12.24–162.00	-	-	_	-	-	-	_	_	_	_	-	-	No respon	nse due to p	umping	-
		KLX07B_1	112.00–200.00	2	2	3.6E-04	-	2.3E-04	-	2.3E-04	8.0E-05	6.0E-04	4.5E-05	252	354	35.27	540.06	3,044.99	1.7E01
		KLX07B_2	49.00–111.00	2	2	4.2E-04	-	2.6E-04	-	2.6E-04	8.0E-05	6.0E-04	2.7E-05	169	296	59.53	573.82	3,331.13	9.6E00
		KLX07B_3	0.00-48.00	2	2	4.3E-04	-	2.9E-04	-	2.9E-04	8.0E-05	6.0E-04	1.8E-05	156	306	120.77	540.06	3,201.04	5.2E00
KLX07A	610.00–655.00	KLX07A_Pa	11.80–334.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	umping	-
		KLX07A_Pb	456.00-844.73	-	-	-	-	-	-	-	-	-	-	-	-	58.84	18,765.64	88,269.7	-
		HLX01_1	16.00–100.63	-	-	-	-	_	-	-	-	-	-	-	-	No respo	nse due to p	umping	-

Pumped s	ection	Observation	n borehole	Transier	nt analysi	s										Index cal	culation		
				Flow reg	jime	Format	ion Param	eter											
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _s ²/dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	610.00-655.00	HLX02_1	0.60-132.00	_	_	_	_	-	_	-	-	-	_	_	_	No respo	nse due to	pumping	_
		HLX06_1	1.00-100.00	-	-	-	-	-	_	-	-	-	-	-	-	No respo	nse due to	pumping	-
		HLX07_1	16.00-100.00	-	_	_	_	_	_	-	_	_	-	-	-	No respo	nse due to	pumping	_
		HLX10_1	3.00-85.00	-	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX11_1	17.00–70.00	_	-	-	-	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX11_2	6.00-16.00	-	-	-	_	_	_	_	_	_	-	-	_	No respo	nse due to	pumping	_
		HLX13_1	11.87–200.02	-	_	-	_	_	_	_	_	_	-	-	_	No respo	nse due to	pumping	_
		HLX14_1	11.00–115.90	-	-	-	_	_	_	_	_	_	-	-	_	No respo	nse due to	pumping	_
		HLX21_1	81.00-150.00	-	_	-	-	_	_	_	_	_	-	-	_	No respo	nse due to	pumping	_
		HLX21_2	9.10-80.00	-	_	-	-	_	_	_	_	_	-	-	_	No respo	nse due to	pumping	_
		HLX22-1	86.00-163.20	-	_	-	-	_	_	_	_	_	-	-	_	No respo	nse due to	pumping	_
		HLX22_2	9.19–85.00	_	-	-	-	_	_	_	_	_	_	-	_	No respo	nse due to	pumping	_
		HLX23_1	61.00–160.20	-	_	-	-	_	_	_	_	_	-	-	_	No respo	nse due to	pumping	_
		HLX23_2	6.10-60.00	-	_	_	-	_	_	_	-	_	_	_	_	No respo	nse due to	pumping	_
		HLX24_1	41.00–175.20	-	_	_	-	_	_	_	-	-	_	_	_	No respo	nse due to	pumping	_
		HLX24_2	9.10-40.00	-	_	_	-	_	_	_	-	-	_	_	_	No respo	nse due to	pumping	_
		HLX25_1	61.00-202.50	-	_	_	-	_	_	_	-	-	_	_	_	No respo	nse due to	pumping	_
		HLX25_2	6.12-60.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX30_1	101.00-163.40	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX30_2	9.10-100.00	_	_	_	_	_	_	-	_	-	_	_	_	No respo	nse due to	pumping	_
		HLX31_1	9.10-133.20	_	_	_	_	_	_	_	_	-	_	_	_	No respo	nse due to	pumping	_
		HLX33_1	31.00–202.10	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX33_2	9.10–30.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_

Pumped s	section	Observation	borehole	Transier	nt analysi	s										Index cal	culation		
				Flow reg	jime	Formati	on Param	eter								_			
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _{s²} /dt _L	Index 2 s _p /Q _p	Index 2 new (s _p /Q _p)· In(r _s /r ₀)	Diffusivity ŋ (T/S)
KLX07A	610.00-655.00	HLX34_1	9.00-151.80	-	_	-	-	-	-	-	-	-	-	-	-	No respo	nse due to	pumping	_
		HLX35_1	65.00-151.50	-	-	-	-	-	_	-	_	_	-	-	-	No respo	nse due to	pumping	-
		HLX35_2	6.00-64.00	-	-	-	-	-	_	_	_	-	-	-	-	No respo	nse due to	pumping	-
		KLX01_1	705.00-1,077.99	-	-	-	-	-	-	_	_	-	-	-	-	No respo	nse due to	pumping	-
		KLX01_2	191.00-704.00	-	-	-	-	-	-	_	_	-	-	-	-	No respo	nse due to	pumping	-
		KLX01_3	171.00-190.00	-	-	-	-	-	-	-	_	-	-	-	-	No respo	nse due to	pumping	-
		KLX01_4	1.00-170.00	-	_	_	-	_	_	_	_	_	_	-	-	No respo	nse due to	pumping	-
		KLX02_1	1,165.00-1,700.00	-	_	-	-	-	-	-	-	_	-	-	-	No respo	nse due to	pumping	-
		KLX02_2	1,145.00-1,164.00	-	-	-	-	-	-	_	_	-	-	-	-	No respo	nse due to	pumping	-
		KLX02_3	718.00–1,144.00	-	-	-	-	-	-	_	_	-	-	-	-	No respo	nse due to	pumping	-
		KLX02_4	495.00-717.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to	pumping	-
		KLX02_5	452.00-494.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to	pumping	-
		KLX02_6	348.00-451.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to	pumping	-
		KLX02_7	209.00-347.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to	pumping	-
		KLX02_8	202.95–208.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	pumping	-
		KLX04_1	898.00-1,000.00	_	_	_	_	-	_	_	_	_	_	-	_	No respo	nse due to p	pumping	-
		KLX04_2	870.00-897.00	_	_	_	_	-	_	_	_	_	_	-	_	No respo	nse due to p	pumping	-
		KLX04_3	686.00-869.00	-	-	-	-	-	-	-	-	-	-	-	-	No respo	nse due to p	pumping	-
		KLX04_4	531.00-685.00	-	_	-	-	-	_	_	_	_	-	-	_	No respo	nse due to p	pumping	-
		KLX04_5	507.00-530.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX04_6	231.00-506.00	_	_	_	-	_	_	_	_	_	_	_	-	No respo	nse due to	pumping	_
		KLX04_7	163.00-230.00	_	-	_	-	_	_	_	_	_	-	-	-	No respo	nse due to	pumping	_
		KLX04_8	12.24–162.00	_	_	_	-	_	-	_	-	-	_	_	_	No respo	nse due to	pumping	_
KLX07A	610.00–655.00	KLX07B_1	112.00-200.00	-	-	_	-	-	-	-	-	-	-	_	-	No respo	nse due to	pumping	_
		KLX07B_2	49.00-111.00	-	-	_	-	-	-	-	-	-	-	-	-	No respo	nse due to	pumping	_
		KLX07B_3	0.00-48.00	-	_	_	-	-	_	_	_	_	_	-	_	No respo	nse due to	pumping	_

Pumped s	section	Observation	borehole	Transier	nt analysi	is										Index cal	culation		
				Flow reg	jime	Format	ion Param	eter					,						
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _s ²/dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	747.00–792.00	KLX07A_Pa	11.80–334.00	_	-	-	-	-	-	-	-	_	_		-	No respo	nse due to	pumping	_
		KLX07A_Pb	456.00-844.73	_	-	-	_	_	_	_	-	_	_	-	-	5.84	5,510.0	61,830.3	_
		HLX01_1	16.00-100.63	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX02_1	0.60-132.00	_	_	_	-	-	-	-	-	_	-	-	_	No respo	nse due to	pumping	_
		HLX06_1	1.00-100.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX07_1	16.00-100.00	-	-	-	-	-	_	-	-	-	-	-	-	No respo	nse due to	pumping	-
		HLX10_1	3.00-85.00	-	-	-	-	-	_	-	-	-	-	-	-	No respo	nse due to	pumping	-
		HLX11_1	17.00-70.00	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to	pumping	-
		HLX11_2	6.00-16.00	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to	pumping	-
		HLX13_1	11.87–200.02	-	-	-	-	-	_	_	-	_	-	-	-	No respo	nse due to	pumping	-
		HLX14_1	11.00-115.90	-	-	-	-	-	_	_	-	_	-	-	-	No respo	nse due to	pumping	-
		HLX21_1	81.00-150.00	-	-	-	-	-	_	-	-	-	-	-	-	No respo	nse due to	pumping	-
		HLX21_2	9.10-80.00	-	-	-	-	-	_	_	-	_	-	-	-	No respo	nse due to	pumping	-
		HLX22-1	86.00-163.20	-	-	-	-	-	-	_	-	_	-	-	-	No respo	nse due to	pumping	-
		HLX22_2	9.19-85.00	-	-	-	-	-	-	_	_	_	-	-	-	No respo	nse due to	pumping	-
		HLX23_1	61.00-160.20	-	-	-	-	-	-	_	-	-	-	-	-	No respo	nse due to	pumping	-
		HLX23_2	6.10-60.00	-	-	-	-	-	-	_	-	-	-	-	-	No respo	nse due to	pumping	-
		HLX24_1	41.00–175.20	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to	pumping	-
		HLX24_2	9.10-40.00	-	_	-	-	-	-	-	-	_	-	-	_	No respo	nse due to	pumping	_
		HLX25_1	61.00-202.50	-	_	_	_	_	_	_	_	_	_	-	_	No respo	nse due to	pumping	_

Pumped s	ection	Observation	n borehole	Transier	nt analysi	s										Index ca	culation		
				Flow reg	gime	Formati	ion Param	eter											
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	s	dt₁ min	dt ₂ min	Index 1 r _s ²/dt _L	Index 2 s _p /Q _p	$\begin{array}{c} \text{Index 2 new} \\ (s_p/Q_p) \cdot \\ \text{In}(r_s/r_0) \end{array}$	Diffusivity ŋ (T/S)
KLX07A	747.00–792.00	HLX25_2	6.12-60.00	_	_	_	_	_	-	_	_	_	_	_	_	No respo	nse due to	pumping	_
		HLX30_1	101.00-163.40	-	-	_	_	_	-	_	-	-	-	_	-	No respo	nse due to	pumping	_
		HLX30_2	9.10-100.00	_	_	_	_	_	_	_	-	-	_	_	_	No respo	nse due to	pumping	_
		HLX31_1	9.10-133.20	_	_	_	_	_	_	_	-	-	_	_	_	No respo	nse due to	pumping	_
		HLX33_1	31.00-202.10	_	_	_	_	_	_	_	-	-	_	_	_	No respo	nse due to	pumping	_
		HLX33_2	9.10-30.00	_	_	_	_	_	_	_	-	-	-	_	_	No respo	nse due to	pumping	_
		HLX34_1	9.00-151.80	_	_	_	_	_	_	_	-	_	-	_	_	No respo	nse due to	pumping	_
		HLX35_1	65.00-151.50	_	_	_	_	_	-	_	_	_	-		_	No respo	nse due to	pumping	_
		HLX35_2	6.00-64.00	-	_	_	_	_	_	_	-	_	-	_	_	No respo	nse due to	pumping	_
		KLX01_1	705.00-1,077.99	-	_	_	_	_	_	_	-	_	-	_	_	No respo	nse due to	pumping	_
		KLX01_2	191.00-704.00	_	_	_	_	_	-	_	_	_	-		_	No respo	nse due to	pumping	_
		KLX01_3	171.00-190.00	_	_	_	_	_	-	_	_	_	-		_	No respo	nse due to	pumping	_
		KLX01_4	1.00-170.00	-	_	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		KLX02_1	1,165.00-1,700.00	-	_	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		KLX02_2	1,145.00-1,164.00	-	-	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		KLX02_3	718.00–1,144.00	-	-	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		KLX02_4	495.00-717.00	-	-	_	-	_	_	_	_	_	-	_	_	No respo	nse due to	pumping	_
		KLX02_5	452.00-494.00	_	_	_	_	_	-	_	_	_	_	-	-	No respo	nse due to	pumping	_
		KLX02_6	348.00-451.00	-	-	_	_	_	_	_	_	_	-	-	-	No respo	nse due to	pumping	_
		KLX02_7	209.00-347.00	_	_	_	-	-	-	_	-	_	-	-	_	No respo	nse due to	pumping	_
		KLX02_8	202.95–208.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX04_1	898.00-1,000.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_
		KLX04_2	870.00-897.00	_	_	_	_	_	_	_	_	_	_	_	_	No respo	nse due to	pumping	_

n.a.

Pumped so	ection	Observation	borehole	Transie	nt analysi	s										Index cal	culation		
				Flow reg	gime	Format	ion Param	eter	,	,									
Borehole ID	Section m btoc	Borehole ID_Sec.	Section m btoc	Pertub. Phase	Rec. Phase	T _{f1} m²/s	T _{f2} m²/s	T _{s1} m²/s	T _{s2} m²/s	T _T m²/s	T _{TMIN} m²/s	T _{TMAX} m²/s	S	dt₁ min	dt ₂ min	Index 1 r _s ²/dt _L	Index 2 s _p /Q _p	Index 2 new (s_p/Q_p) · $In(r_s/r_0)$	Diffusivity ŋ (T/S)
KLX07A	747.00–792.00	KLX04_3	686.00-869.00	-	-	-	-	-	_	_	-	-	_	-	_	No respo	nse due to	pumping	_
		KLX04_4	531.00-685.00	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to	pumping	-
		KLX04_5	507.00-530.00	-	-	-	-	-	-	-	-	_	-	-	-	No respo	nse due to	pumping	-
		KLX04_6	231.00-506.00	-	-	-	_	-	-	-	_	_	_	-	_	No respo	nse due to	pumping	-
		KLX04_7	163.00-230.00	-	-	-	-	_	-	-	-	-	_	-	-	No respo	nse due to	pumping	-
		KLX04_8	12.24-162.00	-	-	-	-	_	-	-	-	-	_	-	-	No respo	nse due to	pumping	-
		KLX07B_1	112.00-200.00	-	-	-	-	_	-	-	-	-	_	-	-	No respo	nse due to	pumping	-
		KLX07B_2	49.00-111.00	-	-	-	-	_	-	-	-	-	_	-	-	No respo	nse due to	pumping	-
		KLX07B_3	0.00-48.00	-	-	-	-	_	-	-	-	-	_	-	-	No respo	nse due to	pumping	-
Nomencl	ature																		
Flow regir	dimensio	on used in the	eription refers to the e analysis (1 = linea ers are given (WBS	ar flow, 2 =	radial flo	ow, 3 = s	pherical f	ow). If onl	y one nun			•				•		•	
T_f		•	d from the analysis ner zone) and T_{f2} (o				CRw). In	case a hor	nogeneou	is flow mo	odel was u	sed only o	one T _f valu	ie is repo	orted, ir	n case a tw	o zone cor	nposite flow m	odel
Ts		•	d from the analysis cone) and T _{s2} (outer			ase (CR	wr). In cas	se a homo	geneous f	low mode	l was use	d only one	T _s value	is report	ed, in c	ase a two	zone comp	osite flow mod	lel was
T _T	Recomm	nended transi	missivity.																
T _{TMIN} / T _{TM}	LAX Confider	nce range low	ver/upper limit.																
S	Storativit	ty.																	
dt ₁ / dt ₂	Estimate	d start/stop t	ime of evaluation for	or the reco	mmende	d transm	nissivity (T	T).											
Index 1	r _s ²/dt _L (m	²/s) normalis	ed distance r _s with	respect to	the respo	onse tim	e.												
Index 2	sp/Qp (s	/m²) normalis	sed drawdown with	respect to	the pum	ping rate	e.												
Index 2 no	ew (sp/Qp)·I	n(r _s /r ₀) (s/m ²)	normalised drawd	own with re	espect to	the pun	nping rate	and dista	nce.										
Diffusivity	n T/S (m²/s	s).																	

Not analysed due to strong natural fluctuations (tidal effects).

The Figures 8-1 to 8-3 present the transmissivity, conductivity and hydraulic freshwater head profiles.

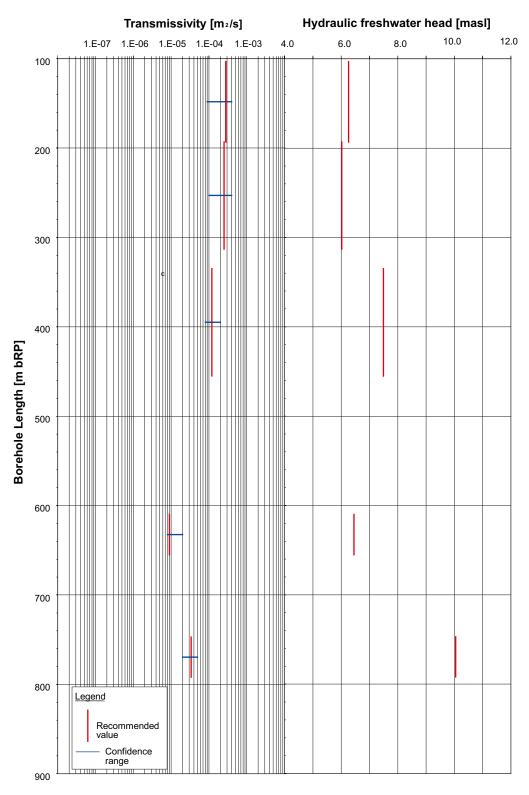


Figure 8-1. Results summary of KLX07A – profiles of transmissivity and equivalent freshwater head, transmissivities derived from the pump tests, freshwater head extrapolated.

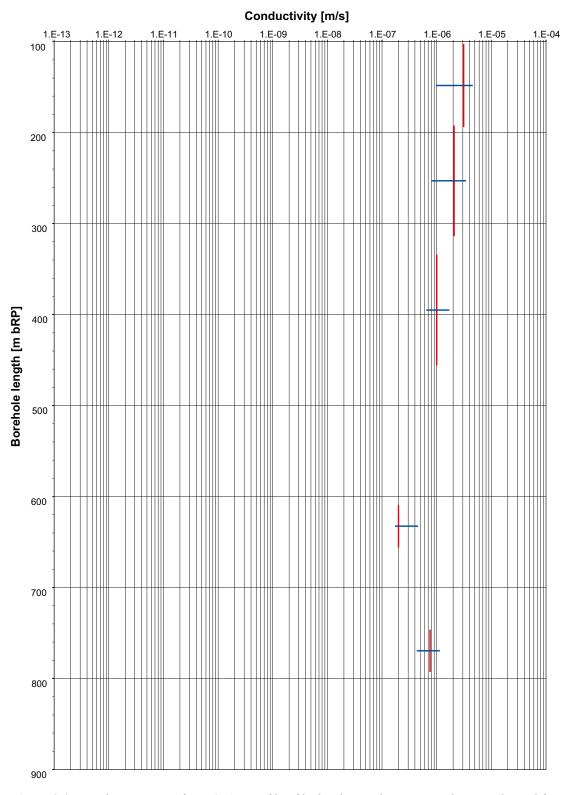


Figure 8-2. Results summary of KLX07A – profile of hydraulic conductivity, conductivity derived from the pump tests.

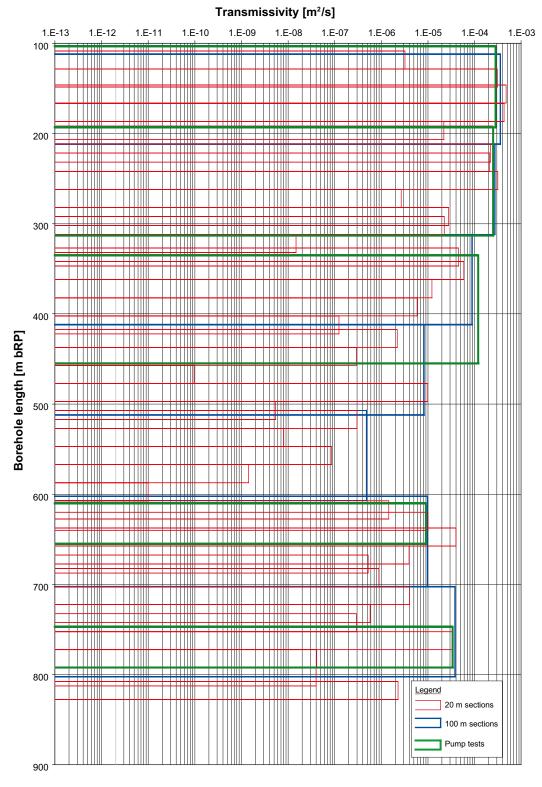


Figure 8-3. Results summary of KLX07A – comparison of the derived transmissivities of the former injection and the pump tests.

8.2 Correlation analysis

A correlation analysis was used with the aim of examining the consistency of results and deriving general conclusion regarding the testing and analysis methods used.

8.2.1 Comparison of steady state and transient analysis results

The steady state derived transmissivities (T_M and Q/s) were compared in a cross-plot with the recommended transmissivity values derived from the transient analysis for the pump tests (see following Figure 8-4).

The correlation analysis shows that most of the steady state derived transmissivities differ by less than one order of magnitude from the transmissivities derived from the transient analysis. In general, the values of the steady state analysis are in the most cases slightly lower than the recommended values.

8.2.2 Comparison between the matched and theoretical wellbore storage coefficient

The wellbore storage coefficient describes the capacity of the test interval to store fluid as result to a unit pressure change in the interval. For a closed system (i.e. closed downhole valve) the theoretical value of the wellbore storage coefficient is given by the product between the interval volume and the test zone compressibility. The interval volume is calculated from the borehole radius and interval length. There are uncertainties concerning the interval volume calculation. Cavities or high transmissivity fractures intersecting the interval may enlarge the effective volume of the interval.

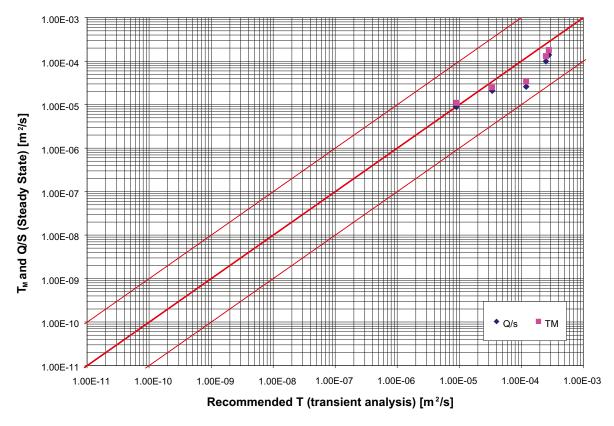


Figure 8-4. Correlation analysis of transmissivities derived by steady state and transient methods for the pump tests.

The test zone compressibility is given by the sum of compressibilities of the individual components present in the interval (water, packer elements, other test tool components and the borehole wall). The water compressibility depends on the temperature and salinity. However, for temperature and salinity values as encountered at the Oskarshamn site the water compressibility varies only slightly between $4.6 \cdot 10^{-10}$ 1/Pa and $5.0 \cdot 10^{-10}$ 1/Pa.

A water compressibility of ca $5 \cdot 10^{-10}$ 1/Pa and a rock compressibility of $1 \cdot 10^{-10}$ 1/Pa was assumed for the analysis. In addition, the test zone compressibility is influenced by the test tool (packer compliance). The test tool compressibility was calculated as follow:

$$c = \frac{\Delta V}{\Delta p} * \frac{1}{V} \quad [1/Pa]$$

 ΔV Volume change of 2 Packers (The volume change was estimated at $7 \cdot 10^{-7}$ m³/100 kPa based on the results of laboratory tests conducted by GEOSIGMA) [m³].

 Δp Pressure change in test section (usually 2·10⁵ Pa) [Pa].

V Volume in test section [m³].

The following Table 8-4 presents the calculated compressibilities for each relevant section length. The average value for the test tool compressibility based on different section length is $2 \cdot 10^{-11}$ 1/Pa.

The sum of the compressibilities (water, rock, test tool) leads to a test zone compressibility with a value of $6\cdot10^{-10}$ 1/Pa. This value is used for the calculation of the theoretical wellbore storage coefficient. The resulting theoretical wellbore storage coefficients are $3.9\cdot10^{-11}$ m³/Pa for the 45 m section, $7.8\cdot10^{-11}$ m³/Pa for the 90 m section and $1.0\cdot10^{-10}$ m³/Pa. The matched wellbore storage coefficient is derived from the transient type curve analysis by matching the unit slope early times derivative plotted in log-log coordinates.

The following Figure 8-5 presents a cross-plot of the theoretical and matched wellbore storage coefficients derived by the pump tests.

It can be seen that the matched wellbore storage coefficients are up to two orders of magnitude larger than the theoretical values for the 120 m and 45 m tests and up to three orders of magnitude larger for the 90 m test. This phenomenon was already observed at the injection tests in previous boreholes. A two or three orders of magnitude increase is difficult to explain by volume uncertainty. Even if large fractures are connected to the interval, a volume increase by three orders of magnitude does not seem probable. The discrepancy is not fully understood, but following hypothesis may be formulated:

- increased compressibility of the packer system,
- potentially the phenomenon of increased wellbore storage coefficients can be explained by turbulent flow induced by the test in the vicinity of the borehole. Considering the fact that deviations concerning the wellbore storage rather occur in test sections with a higher transmissivity (which can lead to turbulent flow) seems to rest upon this hypothesis.

Table 8-4. Test tool compressibility values based on packer displacement.

Length of test section [m]	Volume in test section [m³]	Compressibility [1/Pa]
45	0.204	3·10 ⁻¹¹
90	0.408	2·10 ⁻¹¹
120	0.544	1.10-11
Average compressibility:		2·10 ⁻¹¹

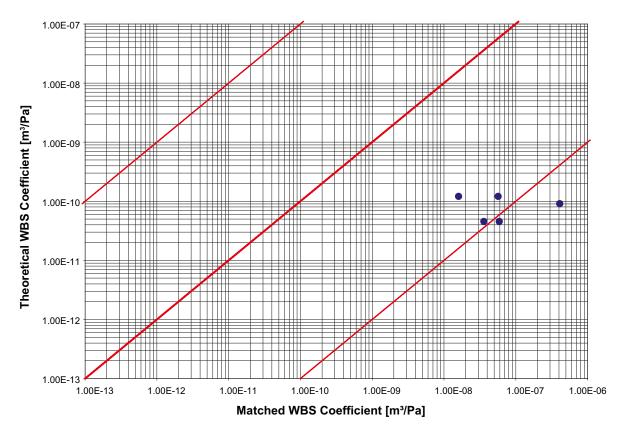


Figure 8-5. Correlation analysis of theoretical and matched wellbore storage coefficients.

9 Conclusions

9.1 Transmissivity derived from the pump tests

Figure 8-1 presents a profile of transmissivities, including the confidence range derived from the transient analysis. The method used for deriving the recommended transmissivity and its confidence range is described in Section 5.5.8.

Whenever possible, the transmissivities derived are representative for the "undisturbed formation" further away from the borehole. The borehole vicinity was typically described by using a skin effect. If a composite flow model was chosen the inner zone transmissivity was recommended.

The transmissivity profile in Figure 8-1 shows a transmissivity between $9.0 \cdot 10^{-6}$ m²/s and $2.8 \cdot 10^{-4}$ m²/s. The transmissivities derived from the pump tests are consistent with the results derived from the injection tests (see Figure 8-3).

9.2 Flow regimes encountered

The flow models used in analysis were derived from the shape of the pressure derivative calculated with respect to log time and plotted in log-log coordinates.

In several cases the pressure derivative suggests a change of transmissivity with the distance from the borehole. In such cases a composite flow model was used in the analysis.

The flow dimension displayed by the test can be diagnosed from the slope of the pressure derivative. A slope of 0.5 indicates linear flow, a slope of 0 (horizontal derivative) indicates radial flow and a slope of -0.5 indicates spherical flow. The flow dimension diagnosis was commented for each of the tests. However, in all cases it was possible to achieve to acceptable analysis results (good match quality) by using radial flow geometry (flow dimension of 2).

9.3 Interference tests and hydraulic connectivity

For the interference tests five constant rate tests were performed in KLX07A. 50 sections in 22 boreholes along the lineament EW007 and northeast of KLX07A were monitored. During the pump test in the test sections 103.20–193.20 m and 193.00–313.00 m 15 observed sections responded due to pumping and 11 sections responded during pumping in test section 335.00–455.00 m. No response was observed during performing the constant rate test in test sections 610.00–655.00 m and 747.00–792.00 m.

The responded observation sections are located in boreholes along the lineament EW007 approximately 300–400 m away from KLX07A and the sections in the observation holes KLX02 and KLX07B lying near by the pump hole KLX07A.

In average, the highest drawdown in the observation holes was measured during the pump test in section 103.20–193.20 and the lowest during pumping in test section 335.00–455.00 m. The evaluation of the interference test data shows a low to medium response and a medium to excellent response time.

The recommended transmissivities derived from the transient analysis ranges in the most cases from $1 \cdot 10^{-4}$ m²/s to $4 \cdot 10^{-4}$ m²/s and in a few cases up to $7 \cdot 10^{-4}$ m²/s.

Exceptions are the transmissivities derived form HLX23_1, HLX23_2 and HLX24 while pumping in section 103.20-193.20 m and while pumping in 193.00-313.00 m with values around $2\cdot10^{-3}$ m²/s and $3\cdot10^{-3}$ m²/s, respectively. During pumping in section 335.00-455.00 m a low pressure response was observed and no transmissivity was recommended due to the poor data quality. Both boreholes HLX23 and HLX24 are located near the lineament EW007. The relatively high transmissivity and low drawdown, respectively, is probably caused by the good connection to lineament EW007.

Other exceptions are the results from HLX22_1, HLX22_2 and KLX02_6 during pumping in section 193.00–313 m with a transmissivity between 9·10⁻⁴ m²/s and 1·10⁻³ m²/s. The transmissivities derived from the other test sections (103.20–193.20 m and 335.00–455.00 m) are in the range of the above mentioned. This derivation is probably because of the poor data quality and resulting uncertainties in the analysis. The differences are covered by the confidence range.

10 References

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Borehole: KLX07A

APPENDIX 1

File Description Table

Borehole: KLX07A	Page 1/1

HYDROTESTING WITH PSS TEST- AND FILEPROTOCOL			WITH	PSS	DRILLHOLE IDENTIFICATION NO.: KLX07A Testorder dated: 2005-09-12					
			PROTO	OCOL						
Teststart Interval boundaries		ies	Name of Datafiles		Testtype	Copied to	Plotted	Sign.		
Date	Time	Upper	Lower	(*.HT2-file)	(*.CSV-file)		disk/CD	(date)		
2005-10-28	09:51	103.20	193.20	KLX07A_0103.20_200510280951.ht2	KLX07A_103.20-193.20_051028_1_CRwr_Q_r.csv	CRwr	2005-12-09	2005-11-04		
2005-11-04	21:35	335.00	455.00	KLX07A_0335.00_200511042135.ht2	KLX07A_335.00-455.00_051104_1_CRwr_Q_r.csv	CRwr	2005-12-09	2005-11-12		
2005-11-12	18:54	193.00	313.00	KLX07A_0193.00_200511121854.ht2	KLX07A_193.00-313.00_051112_1_CRwr_Q_r.csv	CRwr	2005-12-09	2005-11-21		
2005-11-22	21:14	747.00	792.00	KLX07A_0747.00_200511222114.ht2	KLX07A_747.00-792.00_051122_1_CRwr_Q_r.csv	CRwr	2005-12-09	2005-12-09		
2005-11-30	10:14	610.00	655.00	KLX07A_0610.00_200511301014.ht2	KLX07A_610.00-655.00_051130_1_CRwr_Q_r.csv	CRwr	2005-12-09	2005-12-09		

Borehole: KLX07A

APPENDIX 2

Test: 103.20 – 193.20 m

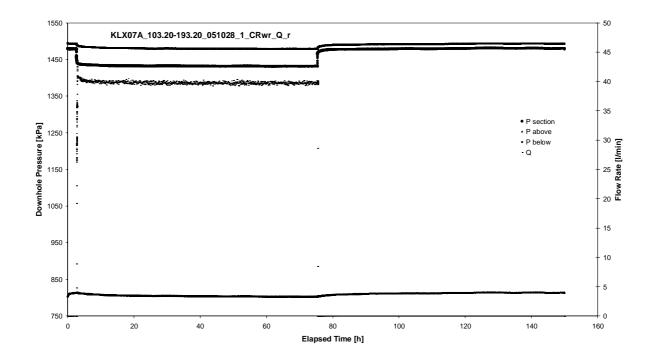
APPENDIX 2-1

Test 103.20 – 193.20 m

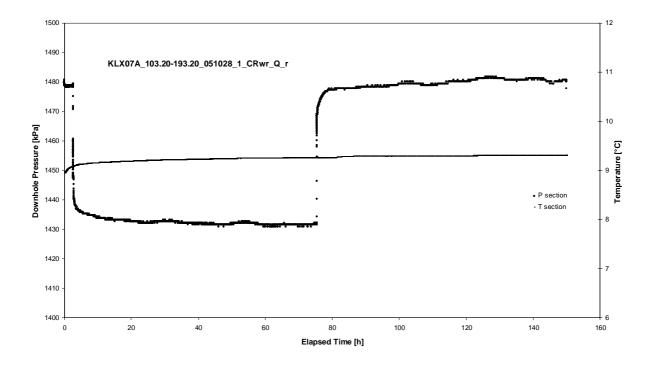
Page 2-1/2

Borehole: KLX07A

Test: 103.20 – 193.20 m

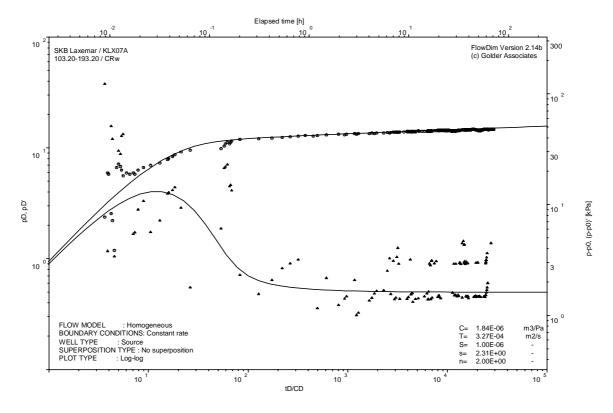


Pressure and flow rate vs. time; cartesian plot



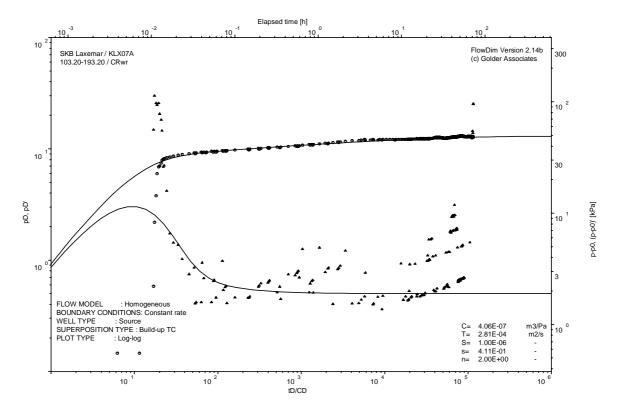
Interval pressure and temperature vs. time; cartesian plot

Test: 103.20 – 193.20 m

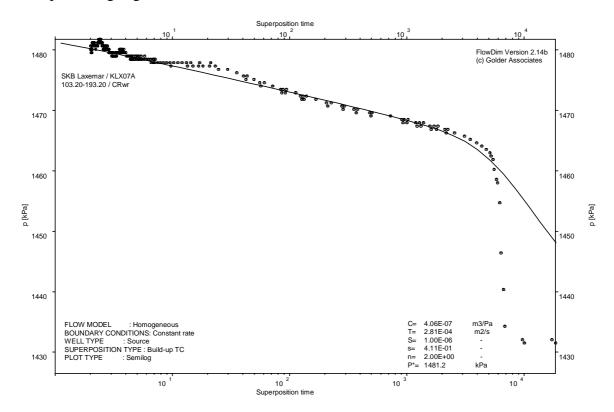


CRw phase; log-log match

Test: 103.20 – 193.20 m



CRwr phase; log-log match



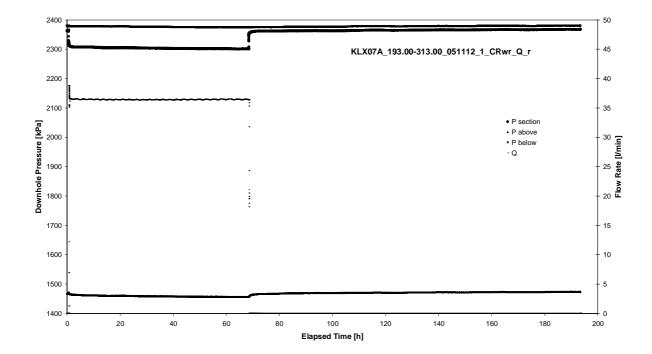
CRwr phase; HORNER match

Test: 193.00 – 313.00 m

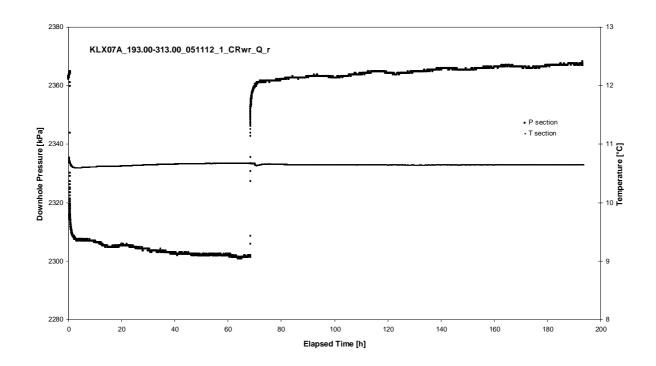
APPENDIX 2-2

Test 193.00 – 313.00 m

Test: 193.00 – 313.00 m

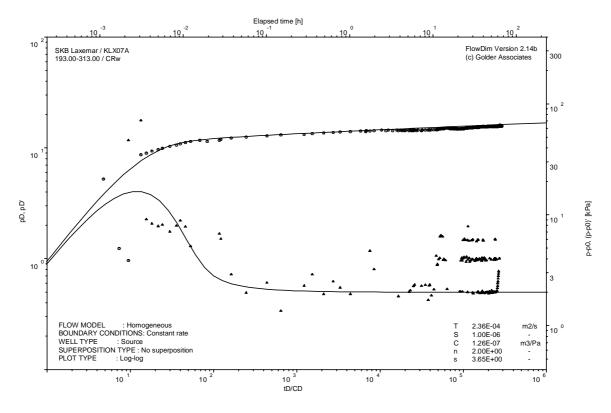


Pressure and flow rate vs. time; cartesian plot



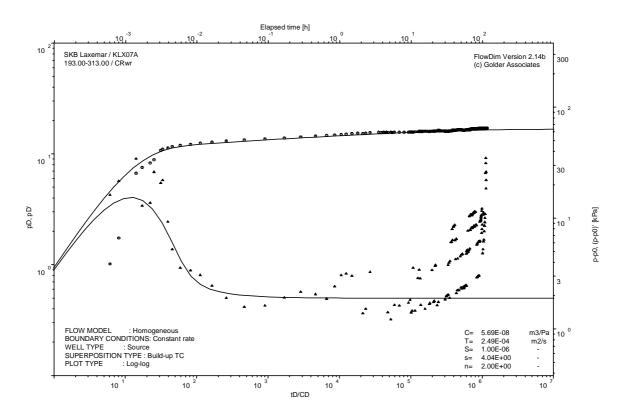
Interval pressure and temperature vs. time; cartesian plot

Test: 193.00 – 313.00 m

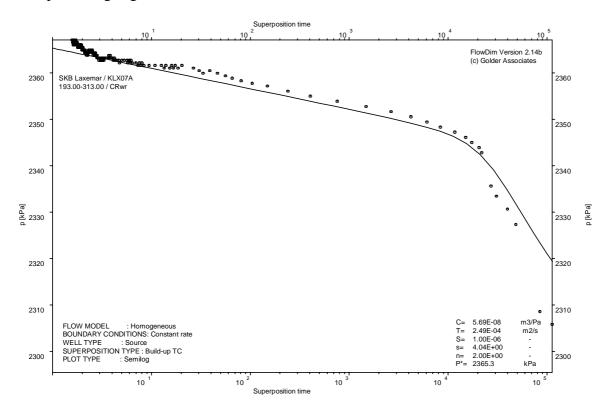


CRw phase; log-log match

Test: 193.00 – 313.00 m



CRwr phase; log-log match



CRwr phase; HORNER match

Test: 335.00 – 455.00 m

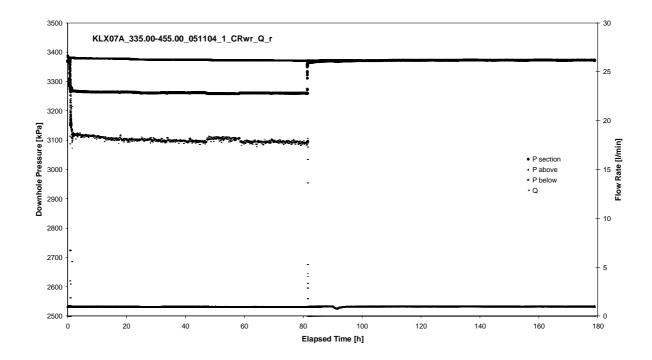
APPENDIX 2-3

Test 335.00 – 455.00 m

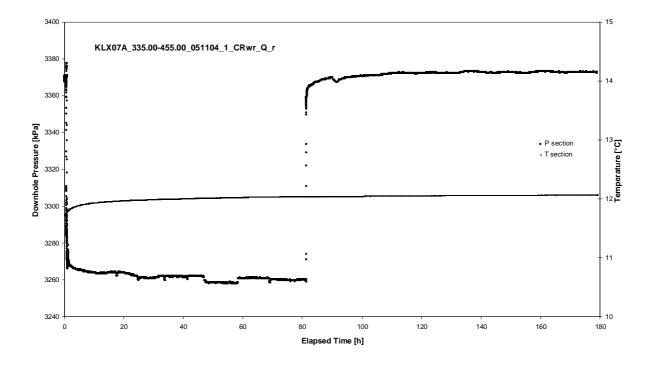
Page 2-3/2

Borehole: KLX07A

Test: 335.00 – 455.00 m

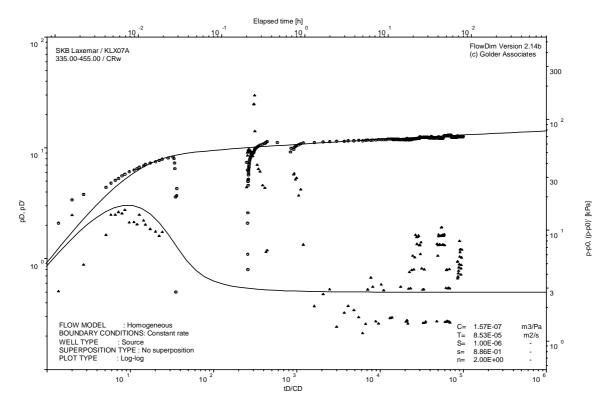


Pressure and flow rate vs. time; cartesian plot



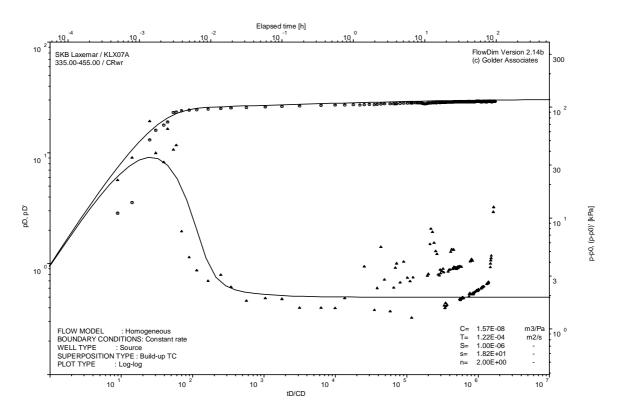
Interval pressure and temperature vs. time; cartesian plot

Test: 335.00 – 455.00 m

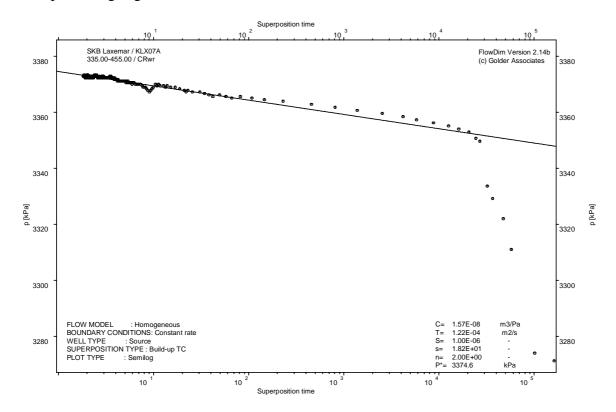


CRw phase; log-log match

Test: 335.00 – 455.00 m



CRwr phase; log-log match



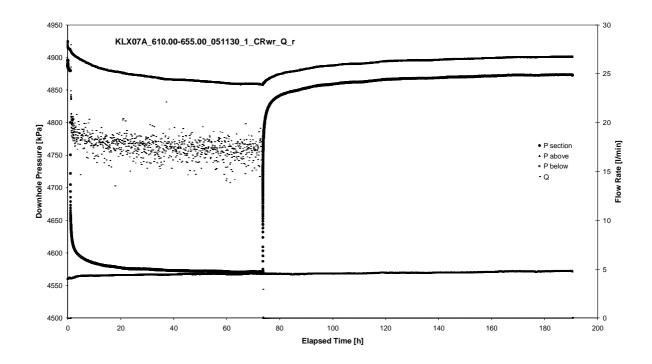
CRwr phase; HORNER match

Test: 610.00 – 655.00 m

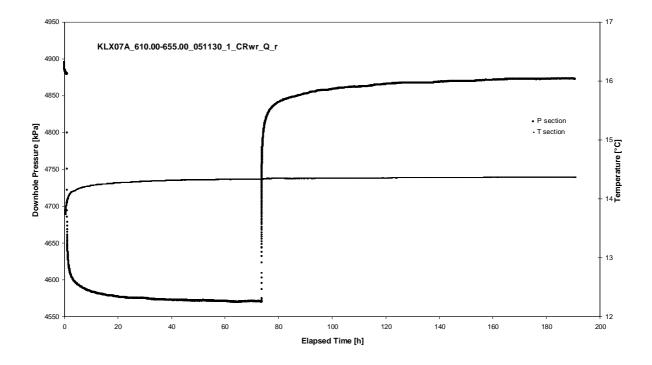
APPENDIX 2-4

Test 610.00 – 655.00 m

Test: 610.00 – 655.00 m

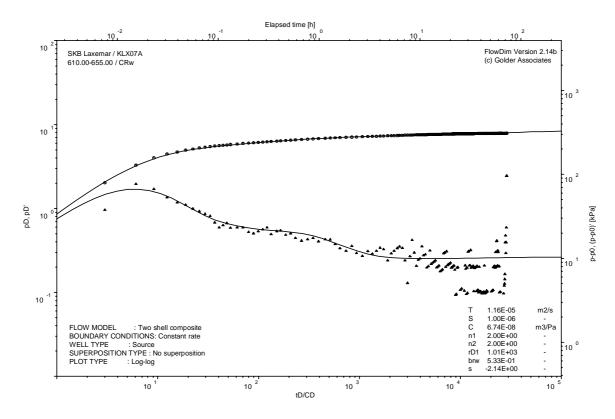


Pressure and flow rate vs. time; cartesian plot



Interval pressure and temperature vs. time; cartesian plot

Test: 610.00 – 655.00 m

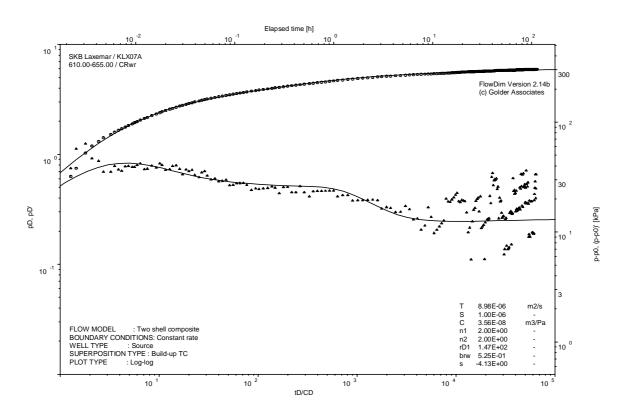


CRw phase; log-log match

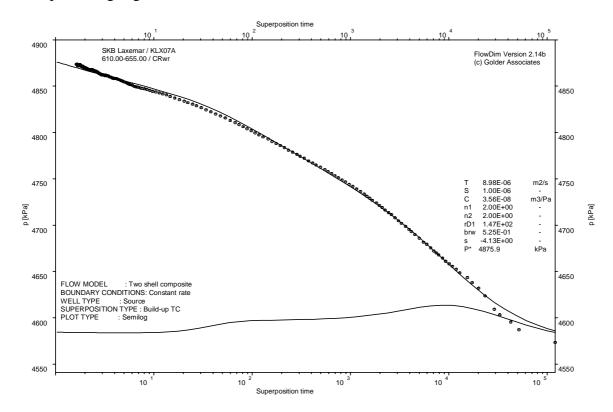
Page 2-4/4

Borehole: KLX07A

Test: 610.00 - 655.00 m



CRwr phase; log-log match



CRwr phase; HORNER match

Test: 747.00 – 792.00 m

APPENDIX 2-5

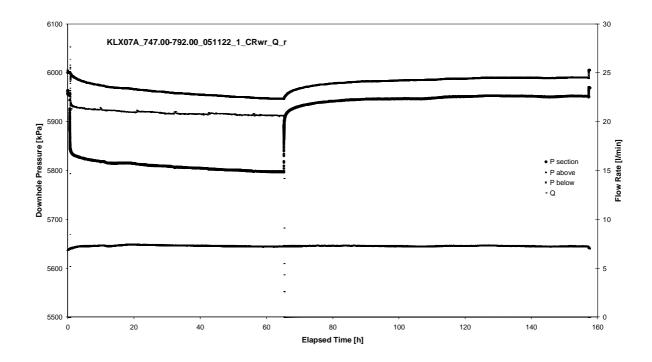
Test 747.00 – 792.00 m

Pump Test Analysis diagrams

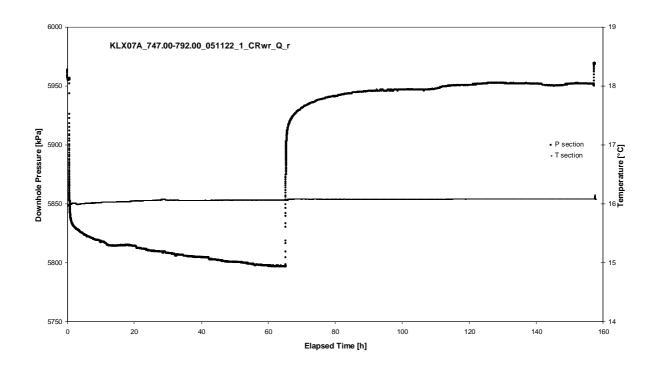
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Borehole: KLX07A

Test: 747.00 – 792.00 m

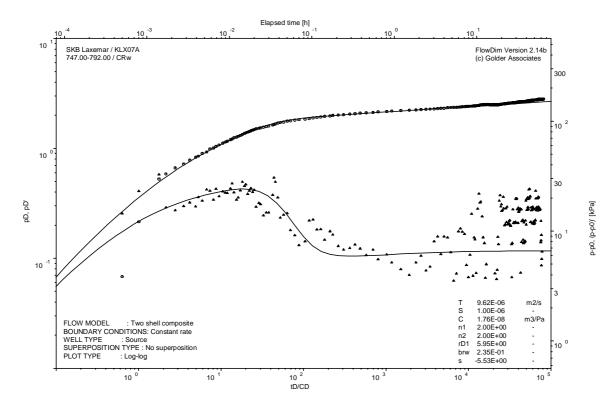


Pressure and flow rate vs. time; cartesian plot



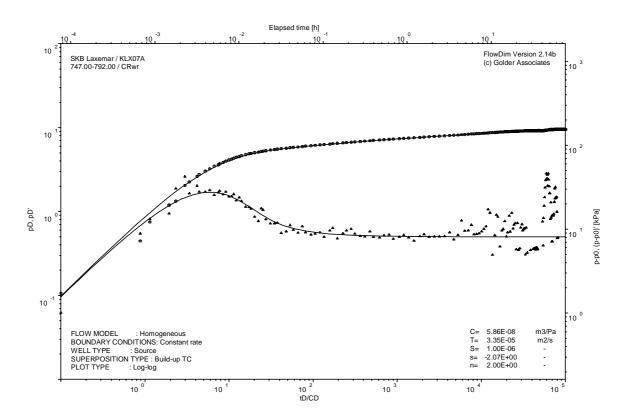
Interval pressure and temperature vs. time; cartesian plot

Test: 747.00 – 792.00 m

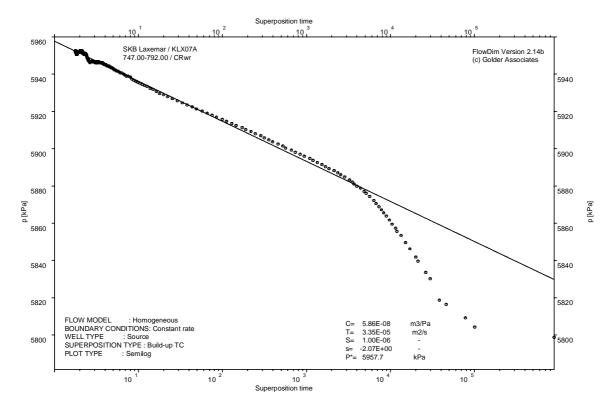


CRw phase; log-log match

Test: 747.00 – 792.00 m



CRwr phase; log-log match



CRwr phase; HORNER match

Borehole: KLX07A

APPENDIX 3

Pump Test Summary Sheets

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation	n Test type:[1]			CRwi
Area:	Laxema	r Test no:			1
Borehole ID:	KLX07	A Test start:			051028 09:51
- · · · · · · · · · · · · · · · · · · ·					
Test section from - to (m):	103.20-193.20 n	n Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.07	6 Responsible for		Cristi	an Enachescu
Linear plat O and p		test evaluation:		Dogovory poriod	
Linear plot Q and p		Flow period		Recovery period	
KLX07A_103.20-193.20_051028_1_CRwr_Q	r 500	Indata	1.450	Indata	
1450	-45	p ₀ (kPa) =	1478		
	-40	p _i (kPa) =	1478	<i>a</i> = .	
1350 -	·	$p_p(kPa) =$		p _F (kPa) =	148
1250 -	20	$Q_p (m^3/s) =$	6.59E-04		
	P section A P above	tp (s) =	261960		333120
1150 -	▲P above □ P below □ Q	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
1000	20	$EC_w (mS/m) =$			
	15	Temp _w (gr C)=	9.3		
950 -	10	Derivative fact.=	0.07	Derivative fact.=	0.0
850	,				
750		Results		Results	
0 20 40 60 Elap	80 100 120 140 160 .seed Time (h)		1.4E-04	Results	
Log-Log plot incl. derivates- f	low ported	Q/s $(m^2/s)=$	1.4E-04 1.8E-04		
Log-Log plot incl. derivates- fi	low period	$T_{\rm M}$ (m ² /s)=		Flavora eira a	tuanaiant
		Flow regime:	transient	Flow regime:	transient 4.37
10 ² 10 ¹ Elapsed time (h)	0 10 10 FlowDim Version 2.14b 300	$dt_1 (min) =$		dt ₁ (min) =	
10 SKB Laxemar / KLX07A 103.20-193.20 / CRw	FlowDim Version 2.14b (c) Golder Associates	$dt_2 (min) =$		$dt_2 (min) =$	1110.78
•	10 ²	$T (m^2/s) =$		$T (m^2/s) =$	2.8E-04
		S (-) =	1.0E-06		1.0E-06
10	30	$K_s (m/s) =$		K_s (m/s) =	3.1E-06
	10 1 0	$S_s(1/m) =$		$S_s (1/m) =$	1.1E-08
		C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	4.1E-0
10 °	a se man ê	$C_D(-) =$	NA	$C_D(-) =$	4.5E+0
	10°	ξ (-) =	2.31	ξ(-) =	0.4
		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ¹ 10 ²	10 3 10 4 10 2	$S_{GRF}(III / S) =$		$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	
		$D_{GRF}(\cdot) =$		$D_{GRF}(\cdot) =$	
Log-Log plot incl. derivatives-	rocovery period	Selected represe	ntativo paran	* *	
Log-Log piot incl. derivatives-	recovery period	dt ₁ (min) =	-		4.1E-07
_ Elapsed time (h)		$dt_1 (min) = $ $dt_2 (min) = $	1110.78	$C (m^3/Pa) =$	4.1E-07 4.5E+0
10, ³ 10, ² 10, ¹ SKB Laxemar / KLX07A 103.20-193.20 / CRwr	10 0 10 1 10 2 FlowDrm Version 2.14b (c) Golder Associates				4.5E+0°
INDERFINACIO / GRAWI	(a) manage - management	$T_T (m^2/s) =$	2.8E-04	ξ(-) =	0.4
**	10 2	S (-) =	1.0E-06 3.1E-06		
10 1	30	$K_s (m/s) =$			
·	.30	$S_s (1/m) =$	1.1E-08		
	10 1	Comments:		200104 27	1 . 10
• // • `		I he recommended		2.8•10-4 m2/s was	
• • • • • • • • • • • • • • • • • • • •		the analysis of the	as we drase. Wfi	en snows the best da	na anu
100	3	the analysis of the O			ssivity is
10 00	A CONTRACTOR OF THE PARTY OF TH	derivative quality.	The confidence i	ange for the transmi m2/s. The flow din	
10	3	derivative quality. The estimated to be 9.0 displayed during the	The confidence in 10-5 to 4.0•10-4 te test is 2. The s	ange for the transmi 4 m2/s. The flow din tatic pressure measu	nension red at
10 10 10 2 10 2 10 2	3	derivative quality. The estimated to be 9.0 displayed during the transducer depth, where the derivative depth is a superior depth.	The confidence in 10-5 to 4.0•10-4 te test is 2. The sas derived from	ange for the transmi m2/s. The flow din	nension red at ng straight line

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga	ation	Test type:[1]			CRwi
Area:	Laxe	mar	Test no:			1
Borehole ID:	KLX	07A	Test start:	051112 18		051112 18:54
Test section from - to (m):	103 00-313 0)() m	Responsible for			Stephan Rohs
• •	100.00 010.0	<i>7</i> 0 III	test execution:			
Section diameter, 2·r _w (m):	0.	.076	Responsible for		Cristi	an Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Emedi plot & and p			Indata		Indata	
2400		50	p ₀ (kPa) =	2361	maata	
2300	KLX07A_193.00-313.00_051112_1_CRwr_Q_r	45	p _i (kPa) =	2361		
2200 -	+	40	$p_{p}(kPa) =$ $p_{p}(kPa)$		p _F (kPa) =	236
2100	+:	35		6.07E-04		230
- € 2000 -	● P section ▲ P above	30	$Q_p (m^3/s) =$	244343		44020
ssure	■ P below = Q	[Vmin]	tp (s) =			44930
8 1900	†	ß Flow Rate [Vmin]	S el S* (-)=	1.00E-06	S el S [*] (-)=	1.00E-0
1800 -	+:	20	EC _w (mS/m)=	16 -		
1700 -	+	15	Temp _w (gr C)=	10.7		
1600 -	-	10	Derivative fact.=	0.05	Derivative fact.=	0.0
1500	+	5				
1400		0	D 1		.	
	.100 120 140 160 180 200 ad Time [h]	'	Results	2.05.05	Results	
			$Q/s (m^2/s) =$	9.9E-05		
Log-Log plot incl. derivates- flo	ow period		$T_{\rm M} ({\rm m}^2/{\rm s}) =$	1.3E-04		
			Flow regime:	transient	Flow regime:	transient
Elapsed time (h)	10,° 10,¹ 10,²		$dt_1 (min) =$		$dt_1 (min) =$	1.54
SKB Laxemar / KLX07A 193.00-313.00 / CRw	FlowDim Version 2.14b (c) Golder Associates 300)	$dt_2 (min) =$		$dt_2 (min) =$	1450.20
	-10	2	$T (m^2/s) =$		$T (m^2/s) =$	2.5E-04
			S (-) =	1.0E-06	` '	1.0E-06
10 1	30		$K_s (m/s) =$		K_s (m/s) =	2.1E-06
		Pa]	$S_s (1/m) =$	8.3E-09	$S_s (1/m) =$	8.3E-09
···· · · · ·	10 20 20 20 20 20 20 20 20 20 20 20 20 20	a, (p-pol) (k	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	5.7E-08
10 0	* Sheer	ā	$C_D(-) =$	NA	$C_D(-) =$	6.3E+00
			ξ (-) =	3.65	ξ(-) =	4.04
	10	U	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ¹ 10 ² 10 ³ tb/CD	10 ^{4'} 10 ^{5'} 10 ^{6'}		$S_{GRF}(\cdot) =$		$S_{GRF}(-) =$	
			D _{GRF} (-) =		D_{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran		
	7.		dt_1 (min) =		C (m³/Pa) =	5.7E-08
Elapsed time [h]			dt_2 (min) =	1450.20		6.3E+00
10 SKB Laxemar / KLX07A 193.00-313.00 / CRev	10, 0 10, 10, 2 FlowDim Version 2.14b (c) Golder Associates)	$T_T (m^2/s) =$	2.5E-04		4.04
			S (-) =	1.0E-06	- , ,	
	10	2	$K_s (m/s) =$	2.1E-06		
101	:		$S_s(1/m) =$	8.3E-09		
	: 30		Comments:	2.32 30	1	
· · · · · · · · · · · · · · · · · · ·		(p-p0) [kPa]		ransmissivity of	f 2.5•10-4 m2/s was	derived from
100	The same of the same of	P-P0. (p			ich shows the better	
	3		derivative quality. T	The confidence i	ange for the transmi	ssivity is
		0			4 m2/s. The flow din	
					tatic pressure measu the CHwr phase usi	
10 ¹ 10 ² 10 ³ tD/CD	10 4 10 5 10 7				the CHWr phase using value of 2365.3 kP	
			r similar in the	22.22 p.o. to t		

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation	n Test type:[1]			CRw
Area:	Laxem	ar Test no:			1
Borehole ID:	KI VOZ	A Test start:			051104 21:35
Borenole ID:	KLXU7	A rest start:			051104 21:35
Test section from - to (m):	335.00-455.00	m Responsible for			Stephan Rohs
Section diameter, 2-r _w (m):	0.07	test execution: 6 Responsible for		Crist	ian Enachescu
ocolion diamotor, 2 T _W (m).	0.07	test evaluation:		01100	an Endonesor
Linear plot Q and p		Flow period		Recovery period	
3900		Indata		Indata	
KLX07A_335.00-455.00_051104_1_CRwr_Q_	,	p_0 (kPa) =	3371		
	25	p _i (kPa) =	3374		
3300		$p_p(kPa) =$	3260	p _F (kPa) =	337
2000	- 20	$Q_{p} (m^{3}/s) =$	2.97E-04		
g 3100		tp (s) =	289815	t_F (s) =	35114
5 3000 -	● P section ▲ P above 15 ⊈ □ P below ■ 2	S el S [*] (-)=		S el S [*] (-)=	1.00E-0
900	■P below •Q	$EC_w (mS/m) =$		(/	
	10	Temp _w (gr C)=	12.0	i	
2900 -		Derivative fact.=	0.07	Derivative fact.=	0.0
2700	5				
2000 .					
2000 do 60 80 Elapset	100 120 140 160 180 180 180 180 180 180 180 180 180 18	Results		Results	
		$Q/s (m^2/s)=$	2.6E-05		
Log-Log plot incl. derivates- flo	ow period	$T_M (m^2/s) =$	3.4E-05		
		Flow regime:	transient	Flow regime:	transient
Elapsed time [h]	10.1 10.2	$dt_1 (min) =$	993.60	dt_1 (min) =	1.90
10 2 SKB Laxemar / KLX07A 335.00-455.00 / CRW	FlowDim Version 2.14b (c) Golder Associates	dt_2 (min) =	3217.20	dt_2 (min) =	1040.10
	300	$T (m^2/s) =$	8.5E-05	$T (m^2/s) =$	1.2E-0
:	10 2	S (-) =	1.0E-06	S (-) =	1.0E-06
10 1		$K_s (m/s) =$	7.1E-07	$K_s (m/s) =$	1.0E-0
	30	$S_s (1/m) =$	8.3E-09	$S_s (1/m) =$	8.3E-0
	<u>.</u>	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	1.6E-0
10.		$C_D(-) =$	NA	C_D (-) =	1.7E+0
	3	ξ(-) =	0.89		18.1
		5 ()		5 ()	
	10 10 10 10	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ¹ 10 ² 10 ³ 10 sD/CD	10 10 10	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran		
		$dt_1 (min) =$	1.90		1.6E-08
Elapsed time [h]	10,010,110,2	$dt_2 (min) =$	1040.10		1.7E+0
10 2 SKB Laxemar / KLX07A 335.00-455.00 / CRwr	FlowDim Version 2.14b (c) Golder Associates 300	$T_T (m^2/s) =$	1.2E-04		18.10
	3 6 6 0 653 2000 646	S (-) =	1.0E-06		
	10 2	$K_s (m/s) =$	1.0E-06		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ı	-5 (
10	30	$S_{-}(1/m) =$	8 3E-110		
	30	$S_s (1/m) =$	8.3E-09	l	
10 0	30	Commenter			dorived fr
	10	Comments: The recommended	transmissivity of	f 1.2•10-4 m2/s was	
	10 °	Comments: The recommended the analysis of the Comments	transmissivity of	f 1.2•10-4 m2/s was ich shows the best da	ata and
	10 °	Comments: The recommended the analysis of the derivative quality.	transmissivity of CRwr phase, whi The confidence i	f 1.2•10-4 m2/s was	ata and ssivity is
	The second secon	The recommended the analysis of the Coderivative quality. The estimated to be 8.00 displayed during the	transmissivity of CRwr phase, whi The confidence in 10-5 to 2.0•10-4 e test is 2. The s	f 1.2•10-4 m2/s was ich shows the best darange for the transmi 4 m2/s. The flow din tatic pressure measu	nta and ssivity is nension red at
	The second secon	The recommended the analysis of the Coderivative quality. The estimated to be 8.0 displayed during the transducer depth, w	transmissivity of CRwr phase, whi The confidence in 10-5 to 2.0•10-4 e test is 2. The seas derived from	f 1.2•10-4 m2/s was ich shows the best darange for the transmi 4 m2/s. The flow din	ata and ssivity is nension red at ng straight line

	Test Sun	nmary Sheet			
Project:	Oskarshamn site investigati	on Test type:[1]			CRwr
۸					
Area:	Laxem	ar Test no:			
Borehole ID:	KLX0	7A Test start:			051130 10:14
T ((()	040.00.055.00	D 31. (0
Test section from - to (m):	610.00-655.00	m Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.0	76 Responsible for		Crist	an Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
4050	30	Indata		Indata	
KLX07A_610.00-655.00_051130_1_CR	wr_Q_r	p_0 (kPa) =	4896		
	-25	$p_i (kPa) =$	4880		
4850		$p_p(kPa) =$	4571	p _F (kPa) =	4873
4000	20	$Q_p (m^3/s) =$	2.83E-04		
	● P section ▲ P above	tp (s) =	265014	t _F (s) =	416882
	P below 15 8 c s s s s s s s s s s s s s s s s s s	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-06
0 4700 P	No.	EC _w (mS/m)=			
4650	10	Temp _w (gr C)=	14.3		
		Derivative fact.=	0.02	Derivative fact.=	0.02
	-5				
4550					
4500 0 20 40 60 60	100 120 140 160 180 200	Results		Results	
Elaps	sed Time (h)	$Q/s (m^2/s) =$	9.0E-06		
Log-Log plot incl. derivates- fl	low period	$T_{\rm M} (m^2/s) =$	1.1E-05		
3 3 1 3 1	, p	Flow regime:	transient	Flow regime:	transient
Elapsed time II	rbi	$dt_1 (min) =$		$dt_1 \text{ (min)} =$	4.50
10 -2 10 -1 SKB Laxemar / KLX07A 610.00-655.00 / CRW	10 0 10 1 10 2 FlowDim Version 2.14b (c) Grider Associates	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	59.85
610.00-655.00 / CRW	(c) Colour Associatios	_ , 2, ,		$T (m^2/s) =$	9.0E-06
j	10	S (-) =	1.0E-06	` '	1.0E-06
10 1		$K_s (m/s) =$		$K_s (m/s) =$	2.0E-07
<u></u>	^ 10 ³	$S_s (1/m) =$		$S_s (1/m) =$	2.2E-08
10 0		$\frac{C_s(7/H)}{C_s(m^3/Pa)} =$	NA	$C_s(7/11) = C_s(7/11) = C_s(7/11)$	3.6E-08
1		$C_D(-) =$	NA	$C_D(-) =$	3.9E+00
10 1	20,000		-2.14		-4.13
	į	ξ (-) =	-2.14	ξ (-) =	-4.10
	10 °			T (=2/-)	
10 ¹ 10 ²	10 ³ 10 ⁴ 10 ⁵	$T_{GRF}(m^2/s) = S_{GRF}(-) =$		$T_{GRF}(m^2/s) =$	
				$S_{GRF}(-) =$	
Log-Log platingly desirestives	rocovery period		Intativo noss-	D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe dt ₁ (min) =	-		3.6E-08
Plan	al			$C (m^3/Pa) =$	3.6E-08
Elapsed time [h 10 -2 10 -1 SKB Laxemar / KLX07A 610.00655.00 / CRwr	7 10,0 10,1 10,2	$dt_2 (min) =$		$C_D(-) =$	3.9E+00 -4.13
610.00-655.00 / CRWF	FlowDim Version 2.14b (c) Golder Associates	$T_T (m^2/s) =$	9.0E-06		-4.13
	(c) Golder Associates		1.0E-06	1	
	(c) Golder Associates	S (-) =	0.05.07		
10 5	(c) Golder Associates	$K_s (m/s) =$	2.0E-07		
10 8	(c) Golder Associates	$K_s (m/s) = S_s (1/m) =$	2.0E-07 2.2E-08		
10	(c) Golder Associates	$K_s (m/s) = S_s (1/m) = Comments:$	2.2E-08		
0 o o o o o o o o o o o o o o o o o o o	(c) Golder Associates	K_s (m/s) = S_s (1/m) = $Comments$:	2.2E-08	f 9.0•10-6 m2/s was	
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	(c) Golder Associates	K_s (m/s) = S_s (1/m) = $Comments$: The recommended the analysis of the $Comments$	2.2E-08 transmissivity of CRwr phase (inn	f 9.0•10-6 m2/s was er zone), which show	ws the better
10 4	(c) Golder Associates 10 ² 30	K _s (m/s) = S _s (1/m) = Comments: The recommended the analysis of the Codata and derivative	2.2E-08 transmissivity of CRwr phase (inn quality. The cor	f 9.0•10-6 m2/s was	ws the better e transmissivity
10 ⁴	(c) Golder Associates 10 ² 10 ³	K _s (m/s) = S _s (1/m) = Comments: The recommended the analysis of the C data and derivative is estimated to be 8 displayed during the	2.2E-08 transmissivity of CRwr phase (inn quality. The cor0•10-6 to 2.0•10 e test is 2. The s	f 9.0•10-6 m2/s was er zone), which show fidence range for th 0-5 m2/s. The flow of tatic pressure measu	ws the better e transmissivity limension red at
10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 °	10 ² 30 30 30 30 30 30	K _s (m/s) = S _s (1/m) = Comments: The recommended the analysis of the C data and derivative is estimated to be 8 displayed during the transducer depth, w	2.2E-08 transmissivity of CRwr phase (inn quality. The cor. 0.0-10-6 to 2.0-10 e test is 2. The seas derived from	f 9.0•10-6 m2/s was er zone), which show fidence range for th 0-5 m2/s. The flow of	ws the better e transmissivity limension red at ng straight line

	Test Sumi	mary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CRwr
Area:	Laxema	Test no:			1
Borehole ID:	KI XO7A	Test start:			051122 21:14
Borenoie ib.					
Test section from - to (m):	747.00-792.00 m	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):	0.076	Responsible for		Cristi	an Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
6100	30	Indata		Indata	ı
KLX07A_747.00-792.00_051122_1_CR	wr_Q_r	p_0 (kPa) =	5963		
6000	.25	p _i (kPa) =	5957		
		$p_p(kPa) =$	5797	p _F (kPa) =	5952
5900	20	$Q_p (m^3/s) =$	3.43E-04		
[948]		tp (s) =	232783	t_F (s) =	331066
(Fg) 0.000 0	●P section ▲P above 15 & a a g c c c c c c c c c c c c c c c c c	S el S [*] (-)=	1.00E-06	S el S [*] (-)=	1.00E-06
Downth	• Q	EC _w (mS/m)=			
5700 -	10	Temp _w (gr C)=	16.1		
		Derivative fact.=	0.02	Derivative fact.=	0.02
5000 -	.5				
-		_			
o 20 40 60 Elag	80 100 120 140 180 ssed Time (h)	Results		Results	ı
		Q/s (m^2/s)=	2.1E-05		
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$	2.5E-05		
		Flow regime:	transient	Flow regime:	transient
10.4 10.3 Elapsed time (*)) 5.1 10.0 10.1	dt_1 (min) =		$dt_1 (min) =$	3.02
10 ¹ SKB Laxemar / KLX07A 747.00-792.00 / CRw	FlowDim Version 2.14b (c) Golder Associates	dt_2 (min) =		dt_2 (min) =	3710.40
	300	$T (m^2/s) =$	4.1E-05	$T (m^2/s) =$	3.4E-05
	10 2	S (-) =	1.0E-06	, ,	1.0E-06
10 °		$K_s (m/s) =$	9.1E-07	$K_s (m/s) =$	7.4E-07
	30	$S_s(1/m) =$	2.2E-08	$S_s (1/m) =$	2.2E-08
	A A A A A A A A A A A A A A A A A A A	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	5.9E-08
10 1	**************************************	$C_D(-) =$	NA	C _D (-) =	6.5E+00
•	3	ξ (-) =	-5.53		-2.07
		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁰ 10 ¹ 10 ² tD/CI	10 ³ 10 ⁴ 10 ⁵				
		$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		S ()		3.1. ()	
Log-Log plot incl. derivatives		D _{GRF} (-) =	entative paran	D _{GRF} (-) =	
Log-Log plot incl. derivatives			-	D _{GRF} (-) = neters.	5.9E-08
	recovery period	D _{GRF} (-) = Selected represe dt ₁ (min) =	3.02	D_{GRF} (-) = neters. $C (m^3/Pa) =$	
10 ⁻¹ 19 ⁻³ Elapsed time	Pig. 19 19 Feedow Weeson 2.14e	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) =	3.02 3710.40	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) =$	6.5E+00
	recovery period	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = T_T (m ² /s) =	3.02 3710.40 3.4E-05	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) =$	6.5E+00
10 4 10 2 Elapsed time 10 7 10 7 10 7 10 7 10 7 10 7 10 7 10 7	Pig. 19 19 Feedow Weeson 2.14e	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = T_T (m ² /s) = S (-) =	3.02 3710.40 3.4E-05 1.0E-06	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) =$	6.5E+00
10 ⁴ 10 ³ Elapsed time	Pig. 19 19 Feedow Weeson 2.14e	$\begin{array}{lll} D_{GRF} \ (\text{-}) & = & \\ \textbf{Selected represe} \\ dt_1 \ (\text{min}) & = & \\ dt_2 \ (\text{min}) & = & \\ T_T \ (\text{m}^2/\text{s}) & = & \\ S \ (\text{-}) & = & \\ K_s \ (\text{m/s}) & = & \\ \end{array}$	3.02 3710.40 3.4E-05 1.0E-06 7.4E-07	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) =$	6.5E+00
10	Pl 19. 19. 19. 19. Placton Version 2.140 (c) Godder Associates	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = T_T (m ² /s) = S (-) = K_s (m/s) = S_s (1/m) =	3.02 3710.40 3.4E-05 1.0E-06	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) =$	6.5E+00
10 ⁴ 10 ³ Elapsed tree 10 ³ 10	Pig. 19 19 Feedow Weeson 2.14e	$\begin{array}{lll} D_{GRF} \ (\text{-}) & = & \\ \textbf{Selected represe} \\ \text{dt}_1 \ (\text{min}) & = & \\ \text{dt}_2 \ (\text{min}) & = & \\ T_T \ (\text{m}^2/\text{s}) & = & \\ S \ (\text{-}) & = & \\ K_s \ (\text{m/s}) & = & \\ S_s \ (\text{1/m}) & = & \\ \textbf{Comments:} \end{array}$	3.02 3710.40 3.4E-05 1.0E-06 7.4E-07 2.2E-08	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) = \xi (-) = 0$	6.5E+00 -2.07
10	Pl 19. 19. 19. 19. Placton Version 2.140 (c) Godder Associates	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = T_T (m²/s) = S (-) = K_s (m/s) = S_s (1/m) = $Comments$:	3.02 3710.40 3.4E-05 1.0E-06 7.4E-07 2.2E-08	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) = \xi (-) = 3.4 \cdot 10 - 5 m^2/s was$	6.5E+00 -2.07
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	Pl 19. 19. 19. 19. Placton Version 2.140 (c) Godder Associates	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = T_T (m ² /s) = S (-) = K_s (m/s) = S_s (1/m) = $Comments$:	3.02 3710.40 3.4E-05 1.0E-06 7.4E-07 2.2E-08 transmissivity of	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) = \xi (-) = \frac{1}{2} \xi (-) = \frac{1}$	6.5E+00 -2.07 derived from
10	Pl 19. 19. 19. 19. Placton Version 2.140 (c) Godder Associates	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = T_T (m²/s) = S (-) = K_s (m/s) = S_s (1/m) = S_s (1/	3.02 3710.40 3.4E-05 1.0E-06 7.4E-07 2.2E-08 transmissivity of	D_{GRF} (-) = neters. $C (m^3/Pa) = C_D (-) = \xi (-) = 3.4 \cdot 10 - 5 m^2/s was$	6.5E+00 -2.07 derived from ata and ssivity is
10 SKB Lawmar / KLX07A 10, 2 Etapand time 10 SKB Lawmar / KLX07A 747.00-792.00 / CReer 10 SKB Lawmar / KLX07A 10, 2 SKB La	Pig. 19. 19. Plantin Version 2 446 (c) Golder Associates 10. 2	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = T_T (m ² /s) = S (-) = K_s (m/s) = S_s (1/m) = $Comments$: The recommended the analysis of the Comment dt_1 derivative quality. The estimated to be 2.04 displayed during the	3.02 3710.40 3.4E-05 1.0E-06 7.4E-07 2.2E-08 transmissivity of CRwr phase, which confidence in 10-5 to 5.0•10-5 et test is 2. The s	D _{GRF} (-) = neters. C (m ³ /Pa) = C _D (-) = ξ (-) = ξ (-) = ξ 3.4•10-5 m2/s was ch shows the best datange for the transmit of m2/s. The flow dintatic pressure measu	derived from ata and ssivity is nension red at
10 ³ Elapsed time 10 ³ SKB Lawmar / N.207A 747.00-792.00 / Citiver	Plant 19. 19. 19. 19. Plantin Version 2.140 (c) Goder Associates 10. 2 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	D_{GRF} (-) = Selected represent dt_1 (min) = dt_2 (min) = dt_2 (min) = dt_3 (min) = dt_4 (min) = dt_4 (min) = dt_5 (m/s) = dt_6 (m/s) =	3.02 3710.40 3.4E-05 1.0E-06 7.4E-07 2.2E-08 transmissivity of CRwr phase, which confidence in 10-5 to 5.0•10-3 etest is 2. The sas derived from	D _{GRF} (-) = neters. C (m ³ /Pa) = C _D (-) = ξ (-) = ξ (3.4•10-5 m2/s was ch shows the best dange for the transmit of m2/s. The flow dim	ata and ssivity is nension red at ng straight line

Borehole: KLX07A

APPENDIX 4

Nomenclature

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Character	SICADA designation	Explanation	Dimension	Unit
Variables,				
A _w		Horizontal area of water surface in open borehole, not	[L ²]	m ²
		including area of signal cables, etc.		
b		Aquifer thickness (Thickness of 2D formation)	[L]	m
В		Width of channel	[L]	m
L		Corrected borehole length	[L]	m
L ₀		Uncorrected borehole length	[L]	m
L_p		Point of application for a measuring section based on its centre point or centre of gravity for distribution of	[L]	m
		transmissivity in the measuring section.		
L _w		Test section length.	[L]	m
dL		Step length, Positive Flow Log - overlapping flow logging. (step length, PFL)	[L]	m
r		Radius	[L]	m
r _w		Borehole, well or soil pipe radius in test section.	[L]	m
r _{we}		Effective borehole, well or soil pipe radius in test section. (Consideration taken to skin factor)	[L]	m
r _s		Distance from test section to observation section, the shortest distance.	[L]	m
r _t		Distance from test section to observation section, the interpreted shortest distance via conductive structures.	[L]	m
r _D		Dimensionless radius, r _D =r/r _w	-	-
Z		Level above reference point	[L]	m
Z _r		Level for reference point on borehole	[L]	m
Z _{wu}		Level for test section (section that is being flowed), upper limitation	[L]	m
Z _W l		Level for test section (section that is being flowed), lower limitation	[L]	m
Z _{ws}		Level for sensor that measures response in test section (section that is flowed)	[L]	m
Z _{ou}		Level for observation section, upper limitation	[L]	m
Z _{ol}		Level for observation section, lower limitation	ľLĺ	m
Z _{os}		Level for sensor that measures response in observation section	[L]	m
Е		Evaporation:	[L ³ /(T L ²)]	mm/y, mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
ET		Evapotranspiration	[L ³ /(T L ²)]	mm/y,
		-1, -1, -1, -1, -1, -1, -1, -1, -1, -1,	[mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
Р		Precipitation	[L ³ /(T L ²)]	mm/y,
				mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
R		Groundwater recharge	[L ³ /(T L ²)]	mm/y, mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
D		Groundwater discharge	[L ³ /(T L ²)]	mm/y, mm/d,
		hydrological budget:	[L ³ /T]	m ³ /s
Q _R		Run-off rate	[L ³ /T]	m ³ /s
Qp		Pumping rate	[L ³ /T]	m³/s
Qı		Infiltration rate	[L³/T]	m³/s
Q		Volumetric flow. Corrected flow in flow logging $(Q_1 - Q_0)$ (Flow rate)	[L ³ /T]	m³/s
Q_0		Flow in test section during undisturbed conditions (flow logging).	[L ³ /T]	m³/s

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			1 2	1 9.
Q _p		Flow in test section immediately before stop of flow.	[L ³ /T]	m³/s
		Stabilised pump flow in flow logging.	rı 3/ 1	3/2
Q _m		Arithmetical mean flow during perturbation phase.	[L ³ /T]	m ³ /s
Q ₁		Flow in test section during pumping with pump flow Q_{p1} , (flow logging).	[L ³ /T]	m ³ /s
Q ₂		Flow in test section during pumping with pump flow Q_{p1} , (flow logging).	[L ³ /T]	m³/s
ΣQ	SumQ	Cumulative volumetric flow along borehole	[L ³ /T]	m ³ /s
ΣQ_0	SumQ0	Cumulative volumetric flow along borehole, undisturbed conditions (ie, not pumped)	[L ³ /T]	m³/s
ΣQ_1	SumQ1	Cumulative volumetric flow along borehole, with pump flow Q _{p1}	[L ³ /T]	m ³ /s
ΣQ_2	SumQ2	Cumulative volumetric flow along borehole, with pump flow Q _{p2}	[L ³ /T]	m ³ /s
ΣQ_{C1}	SumQC1	Corrected cumulative volumetric flow along borehole, ΣQ_1 - ΣQ_0	[L ³ /T]	m³/s
ΣQ_{C2}	SumQC2	Corrected cumulative volumetric flow along borehole, $\Sigma Q_2 - \Sigma Q_0$	[L ³ /T]	m³/s
q		Volumetric flow per flow passage area (Specific discharge (Darcy velocity, Darcy flux, Filtration velocity)).	([L ³ /T*L ²]	m/s
V		Volume	[L ³]	m ³
$V_{\rm w}$		Water volume in test section.	[L ³]	m ³
V _p		Total water volume injected/pumped during perturbation phase.	[L ³]	m ³
V		Velocity	$([L^3/T*L^2]$	m/s
Va		Mean transport velocity (Average linear velocity (Average linear groundwater velocity, Mean microscopic velocity));. v_a =q/n _e	([L³/T*L²]	m/s
t		Time	[T]	hour,mi n,s
t_0		Duration of rest phase before perturbation phase.	[T]	S
t _p		Duration of perturbation phase. (from flow start as far as p_p).	[T]	S
t _F		Duration of recovery phase (from pp to pp).	[T]	S
t ₁ , t ₂ etc		Times for various phases during a hydro test.	[T]	hour,mi n,s
dt		Running time from start of flow phase and recovery phase respectively.	[T]	S
dt _e		$dt_e = (dt \cdot tp) / (dt + tp)$ Agarwal equivalent time with dt as running time for recovery phase.	[T]	S
t _D		$t_D = T \cdot t / (S \cdot r_w^2)$. Dimensionless time	-	-
p		Static pressure; including non-dynamic pressure which depends on water velocity. Dynamic pressure is normally ignored in estimating the potential in groundwater flow relations.	[M/(LT) ²]	kPa
p _a		Atmospheric pressure	[M/(LT) ²]	kPa
p _t		Absolute pressure; p _t =p _a +p _q	$[M/(LT)^2]$	kPa
p_g		Gauge pressure; Difference between absolute pressure and atmospheric pressure.	[M/(LT) ²]	kPa
p ₀		Initial pressure before test begins, prior to packer expansion.	[M/(LT) ²]	kPa
p _i		Pressure in measuring section before start of flow.	[M/(LT) ²]	kPa
p _f		Pressure during perturbation phase.	$[M/(LT)^2]$	kPa
p _s		Pressure during recovery.	[M/(LT) ²]	kPa
p _p		Pressure in measuring section before flow stop.	$[M/(LT)^2]$	kPa
p _F		Pressure in measuring section at end of recovery.	$[M/(LT)^2]$	kPa
p _D		$p_D=2\pi \cdot T \cdot p/(Q \cdot p_w g)$, Dimensionless pressure	-	1_

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dp	Pressure difference, drawdown of pressure surface between two points of time.	[M/(LT) ²]	kPa
dp _f	$dp_f = p_i - p_f$ or $= p_f - p_i$, drawdown/pressure increase of pressure surface between two points of time during perturbation phase. dp_f usually expressed positive.	[M/(LT) ²]	kPa
dps	$dp_s = p_s - p_p \text{ or } = p_p - p_s, \text{ pressure increase/drawdown of pressure surface between two points of time during recovery phase. } dp_s \text{ usually expressed positive.}$	[M/(LT) ²]	kPa
dp _p	$dp_p = p_i - p_p$ or $= p_p - p_i$, maximal pressure increase/drawdown of pressure surface between two points of time during perturbation phase. dp_p expressed positive.	[M/(LT) ²]	kPa
dp _F	$dp_F = p_p - p_F$ or $= p_F - p_p$, maximal pressure increase/drawdown of pressure surface between two points of time during recovery phase. dp_F expressed positive.	[M/(LT) ²]	kPa
Н	Total head; (potential relative a reference level) (indication of h for phase as for p). H=h _e +h _p +h _v	[L]	m
h	Groundwater pressure level (hydraulic head (piezometric head; possible to use for level observations in boreholes, static head)); (indication of h for phase as for p). h=h _e +h _p	[L]	m
h _e	Height of measuring point (Elevation head); Level above reference level for measuring point.	[L]	m
h _p	Pressure head; Level above reference level for height of measuring point of stationary column of water giving corresponding static pressure at measuring point	[L]	m
h _v	Velocity head; height corresponding to the lifting for which the kinetic energy is capable (usually neglected in hydrogeology)	[L]	m
S	Drawdown; Drawdown from undisturbed level (same as dh _o , positive)	[L]	m
Sp	Drawdown in measuring section before flow stop.	[L]	m
h ₀	Initial above reference level before test begins, prior to packer expansion.	[L]	m
h _i	Level above reference level in measuring section before start of flow.	[L]	m
h _f	Level above reference level during perturbation phase.	[L]	m
hs	Level above reference level during recovery phase.	[L]	m
h _p	Level above reference level in measuring section before flow stop.	[L]	m
h _F	Level above reference level in measuring section at end of recovery.	[L]	m
dh	Level difference, drawdown of water level between two points of time.	[L]	m
dh _f	$dh_f = h_i - h_f$ or $= h_f - h_i$, drawdown/pressure increase of pressure surface between two points of time during perturbation phase. dh_f usually expressed positive.	[L]	m
dh _s	$dh_s = h_s - h_p$ or $= h_p - h_s$, pressure increase/drawdown of pressure surface between two points of time during recovery phase. dh_s usually expressed positive.	[L]	m
dh _p	$dh_p = h_i - h_p$ or $= h_p - h_i$, maximal pressure increase/drawdown of pressure surface between two points of time during perturbation phase. dh_p expressed positive.	[L]	m
dh _F	$dh_F = h_p - h_F$ or $= h_F - h_p$, maximal pressure increase/drawdown of pressure surface between two points of time during perturbation phase. dh_F expressed	[L]	m
	positive.		

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		logging). Temperature		
Te _{w0}		Temperature in the test section during undisturbed		°C
. - wo		conditions (taken from temperature logging).		
		Temperature		
Te _o		Temperature in the observation section (taken from		°C
ŭ		temperature logging). Temperature		
EC _w		Electrical conductivity of water in test section.		mS/m
EC _{w0}		Electrical conductivity of water in test section during		mS/m
		undisturbed conditions.		
EC _o		Electrical conductivity of water in observation section		mS/m
TDS _w		Total salinity of water in the test section.	[M/L ³]	mg/L
TDS _{w0}		Total salinity of water in the test section during	[M/L ³]	mg/L
		undisturbed conditions.		
TDS _o		Total salinity of water in the observation section.	[M/L ³]	mg/L
g		Constant of gravitation (9.81 m*s ⁻²) (Acceleration due to	[L/T ²]	m/s ²
		gravity)		
π	pi	Constant (approx 3.1416).	[-]	
r		Residual. $r = p_c - p_m$, $r = h_c - h_m$, etc. Difference between		
		measured data (p _m , h _m , etc) and estimated data (p _c , h _c ,		
145		etc)		
ME		Mean error in residuals. $ME = \frac{1}{n} \sum_{i=1}^{n} r_i$ Normalized ME. NME=ME/(x _{MAX} -x _{MIN}), x: measured		
		Mean error in residuals. $ME = \sum_{n} r_i$		
NIN ALT		Nowed and ME NIME ME//v v) vv macround		
NME		variable considered.		
MAE				
IVIAE		Mean absolute error. $MAE = \frac{1}{n} \sum_{i=1}^{n} r_i $		
		wheat absolute error. $MAL = \sum_{i=1}^{n} r_i $		
NMAE		Normalized MAE. NMAE=MAE/(x _{MAX} -x _{MIN}), x: measured		
141717 (variable considered.		
RMS				
		Root mean squared error $RMS = \left(\frac{1}{2}\sum_{i=1}^{n}r^{2}\right)$		
		$\left(n \sum_{i=1}^{n} r_i\right)$		
NRMS		Root mean squared error. $RMS = \left(\frac{1}{n}\sum_{i=1}^{n}r_{i}^{2}\right)^{0.5}$ Normalized RMR. NRMR=RMR/(x _{MAX} -x _{MIN}), x: measured		
IVICIVIO		variable considered.		
SDR		Standard deviation of residual.		
3211		0.5		
		$SDR = \left(\frac{1}{n-1}\sum_{i=1}^{n} (r_i - ME)^2\right)^{0.5}$		
		$\begin{bmatrix} SDR - \\ n-1 & I \end{bmatrix}$		
SEMR		Standard error of mean residual.		
SEIVIK				
		$SEMR = \left(\frac{1}{n(n-1)} \sum_{i=1}^{n} (r_i - ME)^2\right)^{0.5}$		
		$SEMR = \frac{1}{n(n-1)}\sum_{i=1}^{n} (r_i - ME)$		
		$(n(n-1))_{i=1}$		
D				
Paramete	ers	Occasional de la company de la	I r. 2/	1 21-
Q/s		Specific capacity s=dp _p or s=s _p =h ₀ -h _p (open borehole)	[L ² /T]	m²/s
D		Interpreted flow dimension according to Barker, 1988.	[-]	-
		The and stanting for a self-translation to the self-tr	(T)	
dt₁		Time of starting for semi-log or log-log evaluated	[T]	S
		characteristic counted from start of flow phase and		
		recovery phase respectively.		
dt		End of time for some low or low low such at	[7]	
dt ₂		End of time for semi-log or log-log evaluated	[T]	S
		characteristic counted from start of flow phase and		
		recovery phase respectively.		

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dt∟	Response time to obtain 0.1 m (or 1 kPa) drawdown in observation section counted from start of recovery phase.	[T]	S
ТВ	Flow capacity in a one-dimensional structure of width B and transmissivity T. Transient evaluation of one-dimensional structure	[L ³ /T]	m³/s
Т	Transmissivity	[L ² /T]	m²/s
T _M	Transmissivity according to Moye (1967)	[L ² /T]	m ² /s
T _Q	Evaluation based on Q/s and regression curve between		m ² /s
'Q	Q/s and T, as example see Rhén et al (1997) p. 190.		
Ts	Transmissivity evaluated from slug test	[L ² /T]	m²/s
T _D	Transmissivity evaluated from PFL-Difference Flow Meter	[L ² /T]	m²/s
T _I	Transmissivity evaluated from Impeller flow log	[L ² /T]	m²/s
T _{Sf} , T _{Lf}	Transient evaluation based on semi-log or log-log	$\frac{\left[L^{2}/T\right]}{\left[L^{2}/T\right]}$	m²/s
T _{Ss} , T _{Ls}	diagram for perturbation phase in injection or pumping. Transient evaluation based on semi-log or log-log	[L ² /T]	m²/s
	diagram for recovery phase in injection or pumping.		
T _T	Transient evaluation (log-log or lin-log). Judged best evaluation of T_{Sf} , T_{Lf} , T_{Ss} , T_{Ls}	[L ² /T]	m²/s
T _{NLR}	Evaluation based on non-linear regression.	[L ² /T]	m²/s
T _{Tot}	Judged most representative transmissivity for particular test section and (in certain cases) evaluation time with	[L ² /T]	m²/s
	respect to available data (made by SKB at a later stage).		
V	Liverpulie conductivity	[] /T]	m/a
K	Hydraulic conductivity	[L/T]	m/s
K _s	Hydraulic conductivity based on spherical flow model	[L/T]	m/s
K _m	Hydraulic conductivity matrix, intact rock	[L/T]	m/s
k	Intrinsic permeability	[L ²]	m ²
kb	Permeability-thickness product: kb=k·b	[L ³]	m ³
SB	Storage capacity in a one-dimensional structure of width B and storage coefficient S. Transient evaluation of one-dimensional structure	[L]	m
SB*	Assumed storage capacity in a one-dimensional structure of width B and storage coefficient S. Transient evaluation of one-dimensional structure	[L]	m
S	Storage coefficient, (Storativity)	[-]	-
S S* S _y	Assumed storage coefficient	[-]	-
S _y	Theoretical specific yield of water (Specific yield; unconfined storage. Defined as total porosity (n) minus retention capacity (S _r)	[-]	-
S _{ya}	Specific yield of water (Apparent specific yield); unconfined storage, field measuring. Corresponds to volume of water achieved on draining saturated soil or rock in free draining of a volumetric unit. $S_{ya} = S_y$ (often called S_y in literature)	[-]	-
S _r	Specific retention capacity, (specific retention of water, field capacity) (Specific retention); unconfined storage. Corresponds to water volume that the soil or rock has left after free draining of saturated soil or rock.	[-]	-
S _f	Fracture storage coefficient	[-]	-
S _m	Matrix storage coefficient	[-]	-
S _{NLR}	Storage coefficient, evaluation based on non-linear regression	[-]	-
S _{Tot}	Judged most representative storage coefficient for	[-]	-

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		time with respect to available data (made by SKB at a		
		later stage).		
Sc		Specific storage coefficient; confined storage.	[1/L]	1/m
S _s S _s *		Assumed specific storage coefficient; confined storage.	[1/L]	1/m
O _S			[''-]	17111
Cf		Hydraulic resistance: The hydraulic resistance is an aquitard with a flow vertical to a two-dimensional formation. The inverse of c is also called Leakage coefficient. c _i =b'/K' where b' is thickness of the aquitard and K' its hydraulic conductivity across the aquitard.	[T]	S
L _f		Leakage factor: $L_f = (K \cdot b \cdot c_f)^{0.5}$ where K represents characteristics of the aquifer.	[L]	m
ξ	Skin	Skin factor	[-]	-
ξ* C	Skin	Assumed skin factor	[-]	-
С		Wellbore storage coefficient	$[(LT^2)\cdot M^2]$	m³/Pa
C _D		$C_D = C \cdot \rho_w g / (2\pi \cdot S \cdot r_w^2)$, Dimensionless wellbore storage coefficient	[-]	-
ω	Stor-ratio	$ω$ = S_f /(S_f + S_m), storage ratio (Storativity ratio); the ratio of storage coefficient between that of the fracture and total storage.	[-]	-
λ	Interflow-coeff	$\lambda = \alpha \cdot (K_m / K_f) \cdot r_w^2$ interporosity flow coefficient.	[-]	-
T_GRF		Transmissivity interpreted using the GRF method	[L ² /T]	m²/s
S _{GRF}		Storage coefficient interpreted using the GRF method	[1/L]	1/m
D _{GRF}		Flow dimension interpreted using the GRF method	[-]	-
0		Water compressibility; corresponding to β in	[(LT ²)/M]	1/Pa
C _w		hydrogeological literature.		
Cr		Pore-volume compressibility, (rock compressibility); Corresponding to α/n in hydrogeological literature.	[(LT ²)/M]	1/Pa
Ct		$c_t = c_r + c_w$, total compressibility; compressibility per volumetric unit of rock obtained through multiplying by the total porosity, n. (Presence of gas or other fluids can be included in c_t if the degree of saturation (volume of respective fluid divided by n) of the pore system of respective fluid is also included)	[(LT ²)/M]	1/Pa
nc _t		Porosity-compressibility factor: nc _t = n⋅c _t	[(LT ²)/M]	1/Pa
nc _t b		Porosity-compressibility-thickness product: nc _t b= n·c _t .b	$[(L^2T^2)/M]$	m/Pa
n		Total porosity	-	-
n _e		Kinematic porosity, (Effective porosity)	-	-
е		Transport aperture. e = n _e ·b	[L]	m
ρ	Density	Density	[M/L ³]	kg/(m ³)
ρ_{W}	Density-w	Fluid density in measurement section during pumping/injection	[M/L ³]	kg/(m ³)
ρο	Density-o	Fluid density in observation section	[M/L ³]	kg/(m ³)
ρ_{sp}	Density-sp	Fluid density in standpipes from measurement section	[M/L ³]	kg/(m ³)
μ	my	Dynamic viscosity	[M/LT]	Pas
μ _w	my	Dynamic viscosity (Fluid density in measurement section during pumping/injection)	[M/LT]	Pas
FC _⊤		Fluid coefficient for intrinsic permeability, transference of k to K; K=FC _T -k; FC _T =ρ _w ·g/ μ _w	[1/LT]	1/(ms)
FC _S		Fluid coefficient for porosity-compressibility, transference	[M/T ² L ²]	Pa/m

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	of a to C + C FC no + FC a g	
Index on K, T and	of c_t to S_s ; $S_s = FC_S \cdot n \cdot c_t$; $FC_S = \rho_W \cdot g$	
		1
S	S: semi-log	
L	L: log-log	
t	Pump phase or injection phase, designation following S	
	or L (withdrawal)	
S	Recovery phase, designation following S or L (recovery)	
NLR	NLR: Non-linear regression. Performed on the entire test	
	sequence, perturbation and recovery	
M	Moye	
GRF	Generalised Radial Flow according to Barker (1988)	
m	Matrix	
f	Fracture	
measl	Measurement limit. Estimated measurement limit on parameter being measured (T or K)	
Т	Judged best evaluation based on transient evaluation.	
Tot	Judged most representative parameter for particular test	
. •.	section and (in certain cases) evaluation time with	
	respect to available data (made by SKB at a later stage).	
b	Bloch property in a numerical groundwater flow model	
e	Effective property (constant) within a domain in a	
	numerical groundwater flow model.	
Index on p and Q	Hamonoar groundwater new model.	
0	Initial condition, undisturbed condition in open holes	
i	Natural, "undisturbed" condition of formation parameter	
f	Pump phase or injection phase (withdrawal, flowing	
	phase)	
s	Recovery, shut-in phase	
p	Pressure or flow in measuring section at end of	
	perturbation period	
F	Pressure in measuring section at end of recovery period.	
	Arithmetical mean value	
m c	Estimated value. The index is placed last if index for	
	"where" and "what" are used. Simulated value	
m	Measured value. The index is placed last if index for	
	"where" and "what" are used. Measured value	
Some miscellaned	ous indexes on p and h	
w	Test section (final difference pressure during flow phase	
	in test section can be expressed dp _{wp} ; First index shows	
	"where" and second index shows "what")	
0	Observation section (final difference pressure during flow	
	phase in observation section can be expressed dp_{op} ;	
	First index shows "where" and second index shows	
	"what")	
f	Fresh-water head. Water is normally pumped up from	
	section to measuring hoses where pressure and level are	
	observed. Density of the water is therefore approximately	
	the same as that of the measuring section. Measured	
	groundwater level is therefore normally represented by	
	what is defined as point-water head. If pressure at the	
	measuring level is recalculated to a level for a column of	
	water with density of fresh water above the measuring	
	point it is referred to as fresh-water head and h is	
	indicated last by an f. Observation section (final level	
	during flow phase in observation section can be	
	expressed h _{opf} ; the first index shows "where" and the	
	second index shows "what" and the last one	
	"recalculation")	
<u> </u>	,	

Borehole: KLX07A

APPENDIX 5

SICADA data tables

(Pump tests)

KLX07A

SKR		SIC	CADA	/Data	Impo	rt Tem	plate		(Sim	plified version v1.4
									SKB 8	k Ergodata AB 200
File Identit Created B Create	у	Stephan Rohs 2006-01-17	41				Compiled B ck For Deliver livery Approva	у		
Activity Typ	е	KLX07A KLX07A - Interfere				Projec	et	AP PS 4	100-05-045	
Activity Inform	ation					Additional Act	ivity Data			
Idcode	Start Date	Stop Date	Secup (m)	Seclow (m)	Section No	C10 Company	Field crew manager	P200 Field crew	evaluating data	R25 Report
KLX07A	20051028 09:51	20051208 08:54	103.20	792.00		Golder	Stephan Rohs	Stephan Rohs, Philipp Wolf	Cristian Enachescu, Jörg Böhner, Stephan Rohs	Cristian Enachescu, Jörg Böhner, Stephan Rohs

Table plu_s_hole_test_d

PLU Injection and pumping, General information

Column	Datatype	Unit	Column Description
site	CHAR		Investigation site name
activity_type	CHAR		Activity type code
start_date	DATE		Date (yymmdd hh:mm:ss)
stop_date	DATE		Date (yymmdd hh:mm:ss)
project	CHAR		project code
idcode	CHAR		Object or borehole identification code
secup	FLOAT	m	Upper section limit (m)
seclow	FLOAT	m	Lower section limit (m)
section_no	INTEGER	number	Section number
test_type	CHAR		Test type code (1-7), see table description
formation_type	CHAR		1: Rock, 2: Soil (superficial deposits)
start_flow_period	DATE	yyyymmdd	Date & time of pumping/injection start (YYYY-MM-DD hh:mm:ss)
stop_flow_period	DATE	yyyymmdd	Date & time of pumping/injection stop (YYYY-MM-DD hh:mm:ss)
flow_rate_end_qp	FLOAT	m**3/s	Flow rate at the end of the flowing period
value_type_qp	CHAR		0:true value,-1 <lower meas.limit1:="">upper meas.limit</lower>
mean_flow_rate_qm	FLOAT	m**3/s	Arithmetic mean flow rate during flow period
q_measll	FLOAT	m**3/s	Estimated lower measurement limit of flow rate
q_measlu	FLOAT	m**3/s	Estimated upper measurement limit of flow rate
tot_volume_vp	FLOAT	m**3	Total volume of pumped or injected water
dur_flow_phase_tp	FLOAT	S	Duration of the flowing period of the test
dur_rec_phase_tf	FLOAT	S	Duration of the recovery period of the test
initial_head_hi	FLOAT	m	Hydraulic head in test section at start of the flow period
head_at_flow_end_h	FLOAT	m	Hydraulic head in test section at stop of the flow period.
final_head_hf	FLOAT	m	Hydraulic head in test section at stop of recovery period.
initial_press_pi	FLOAT	kPa	Groundwater pressure in test section at start of flow period
press_at_flow_end_	FLOAT	kPa	Groundwater pressure in test section at stop of flow period.
final_press_pf	FLOAT	kPa	Ground water pressure at the end of the recovery period.
fluid_temp_tew	FLOAT	оС	Measured section fluid temperature, see table description
fluid_elcond_ecw	FLOAT	mS/m	Measured section fluid el. conductivity, see table descr.
fluid_salinity_tdsw	FLOAT	mg/l	Total salinity of section fluid based on EC, see table descr.
fluid_salinity_tdswm	FLOAT	mg/l	Tot. section fluid salinity based on water sampling, see
reference	CHAR		SKB report No for reports describing data and evaluation
comments	VARCHAR		Short comment to data
error_flag	CHAR		If error_flag = "*" then an error occured and an error
in_use	CHAR		If in_use = "*" then the activity has been selected as
sign	CHAR		Signature for QA data accknowledge (QA - OK)
lp	FLOAT	m	Hydraulic point of application

					section_		formation_			flow_rate_end_	value_type_	mean_flow_			
idcode	start_date	stop_date	secup	seclow	no	test_type	type	start_flow_period	stop_flow_period	qp	qp	rate_qm	q_measll	q_measlu	tot_volume_vp
KLX07A	051028 09:51:38	051103 15:53:11	103.20	193.20		1B	1	2005-10-28 12:34:39	2005-10-31 13:20:28	6.59E-04	0	6.80E-04	1.67E-08	8.33E-04	1.78E+02
KLX07A	051104 21:35:50	051112 08:36:30	335.00	455.00		1B	1	2005-11-04 22:33:25	2005-11-08 07:03:40	2.97E-04	0	3.02E-04	1.67E-08	8.33E-04	8.74E+01
KLX07A	051112 18:54:39	051120 20:17:29	193.00	313.00		1B	1	2005-11-12 19:32:10	2005-11-15 15:24:33	6.07E-04	0	6.07E-04	1.67E-08	8.33E-04	1.48E+02
KLX07A	051122 21:14:52	051129 10:56:05	747.00	792.00		1B	1	2005-11-22 21:53:31	2005-11-25 14:33:14	3.43E-04	0	3.48E-04	1.67E-08	8.33E-04	7.99E+01
KLX07A	051130 10:14:30	051208 08:54:40	610.00	655.00		1B	1	2005-11-30 11:27:04	2005-12-03 12:03:58	2.83E-04	0	2.93E-04	1.67E-08	8.33E-04	7.77E+01

			dur_flow_	dur_rec_	initial_head_	head_at_flow_	final_head_	initial_press_	press_at_flow	final_press_	fluid_temp_	fluid_elcond_	fluid_salinity	fluid_salinity			
idcode	secup	seclow	phase_tp	phase_tf	hi	end_hp	hf	pi	_end_pp	pf	tew	ecw	_tdsw	_tdswm	reference	comments	lp
KLX07A	103.20	193.20	261960	333120			6.26	1478	1432	1480	9.3						148.20
KLX07A	335.00	455.00	289815	351140			7.49	3374	3260	3372	12.0						395.00
KLX07A	193.00	313.00	244343	449307			6.02	2361	2301	2368	10.7						253.00
KLX07A	747.00	792.00	232783	331066			10.05	5957	5797	5952	16.1						769.50
KLX07A	610.00	655.00	265014	416882			6.45	4880	4571	4873	14.3						632.50

Table	1	plu_s_hol	e_test_ed1
	PLU S	Single hole tests, pump	oing/injection. Basic evaluation
Column	Datatype	Unit	Column Description
site	CHAR		Investigation site name
activity_type	CHAR		Activity type code
start_date	DATE		Date (yymmdd hh:mm:ss)
stop_date	DATE		Date (yymmdd hh:mm:ss)
project	CHAR		project code
idcode	CHAR		Object or borehole identification code
secup	FLOAT	m	Upper section limit (m)
seclow	FLOAT	m	Lower section limit (m)
section_no	INTEGER	number	Section number
test_type	CHAR		Test type code (1-7), see table description!
formation_type	CHAR		Formation type code. 1: Rock, 2: Soil (superficial deposits)
lp	FLOAT	m	Hydraulic point of application for test section, see descr.
seclen_class	FLOAT	m	Planned ordinary test interval during test campaign.
spec_capacity_q_s	FLOAT	m**2/s	Specific capacity (Q/s) of test section, see table descript.
value_type_q_s	CHAR		0:true value,-1:Q/s <lower meas.limit,1:q="" s="">upper meas.limit</lower>
transmissivity_tq	FLOAT	m**2/s	Tranmissivity based on Q/s, see table description
value_type_tq	CHAR	2/0	0:true value,-1:TQ <lower meas.limit,1:tq="">upper meas.limit.</lower>
bc_tq	CHAR		Best choice code. 1 means TQ is best choice of T, else 0
transmissivity_moye	FLOAT	m**2/s	Transmissivity,TM, based on Moye (1967)
bc_tm	CHAR		Best choice code. 1 means Tmoye is best choice of T, else 0
value_type_tm	CHAR		0:true value,-1:TM <lower meas.limit,1:tm="">upper meas.limit.</lower>
hydr_cond_moye	FLOAT	m/s	K_M: Hydraulic conductivity based on Moye (1967)
formation_width_b	FLOAT	m	b:Aquifer thickness repr. for T(generally b=Lw) ,see descr.
width_of_channel_b	FLOAT	m	B:Inferred width of formation for evaluated TB
tb	FLOAT	m**3/s	TB:Flow capacity in 1D formation of T & width B, see descr.
l_measl_tb	FLOAT	m**3/s	Estimated lower meas. limit for evaluated TB,see description
u_measl_tb	FLOAT	m**3/s	Estimated upper meas. limit of evaluated TB,see description
sb	FLOAT	m	SB:S=storativity,B=width of formation,1D model,see descript.
assumed_sb	FLOAT	m	SB* : Assumed SB,S=storativity,B=width of formation,see
leakage_factor_lf	FLOAT	m	Lf:1D model for evaluation of Leakage factor
transmissivity_tt	FLOAT	m**2/s	TT:Transmissivity of formation, 2D radial flow model, see
value_type_tt	CHAR		0:true value,-1:TT <lower meas.limit,1:tt="">upper meas.limit,</lower>
bc_tt	CHAR		Best choice code. 1 means TT is best choice of T, else 0
l_measl_q_s	FLOAT	m**2/s	Estimated lower meas. limit for evaluated TT,see table descr
u_measl_q_s	FLOAT	m**2/s	Estimated upper meas. limit for evaluated TT,see description
storativity_s	FLOAT		S:Storativity of formation based on 2D rad flow,see descr.
assumed_s	FLOAT		Assumed Storativity,2D model evaluation,see table descr.
bc_s	FLOAT		Best choice of S (Storativity) ,see descr.
ri	FLOAT	m	Radius of influence
ri_index	CHAR		ri index=index of radius of influence :-1,0 or 1, see descr.
leakage_coeff	FLOAT	1/s	K'/b':2D rad flow model evaluation of leakage coeff,see desc
hydr_cond_ksf	FLOAT	m/s	Ksf:3D model evaluation of hydraulic conductivity,see desc.
value_type_ksf	CHAR		0:true value,-1:Ksf <lower meas.limit,1:ksf="">upper meas.limit,</lower>
l_measl_ksf	FLOAT	m/s	Estimated lower meas.limit for evaluated Ksf,see table desc.
u_measl_ksf	FLOAT	m/s	Estimated upper meas.limit for evaluated Ksf,see table descr
spec_storage_ssf	FLOAT	1/m	Ssf:Specific storage,3D model evaluation,see table descr.
assumed_ssf	FLOAT	1/m	Ssf*:Assumed Spec.storage,3D model evaluation,see table des.
c	FLOAT	m**3/pa	C: Wellbore storage coefficient; flow or recovery period

KLX07A

							formation_			spec_capacity	value_type_	transmissivity	value_type_		transmissivity_		value_type_t	hydr_cond_
idcode	start_date	stop_date	secup	seclow	section_no	test_type	type	lp	seclen_class	q_s	q_s	_tq	tq	bc_tq	moye	bc_tm	m	moye
KLX07A	051028 09:51:38	051103 15:53:11	103.20	193.20		1B	1	148.20	90	1.40E-0	4 ()			1.81E-04	0	0	2.01E-06
KLX07A	051104 21:35:50	051112 08:36:30	335.00	455.00		1B	1	395.00	120	2.56E-0	5 ()			3.40E-05	0	0	2.83E-07
KLX07A	051112 18:54:39	051120 20:17:29	193.00	313.00		1B	1	253.00	120	9.92E-0	5 ()			1.32E-04	0	0	1.10E-06
KLX07A	051122 21:14:52	051129 10:56:05	747.00	792.00		1B	1	769.50	45	2.11E-0	5 ()			2.47E-05	0	0	5.49E-07
KLX07A	051130 10:14:30	051208 08:54:40	610.00	655.00		1B	1	632.50	45	9.00E-0	6 ()			1.06E-05	0	0	2.36E-07

idcode	secup		formation_ width_b	width_of_channel_ b	I_measl_tb	u_measl_tb	sb	leakage_f actor_lf	transmissivity_ tt		bc_tt	l_measl_q_s	u_measl_q_s	storativity_s	assumed_s	bc_s	ri	ri_index
KLX07A	103.20	193.20							2.81E-04	0	1	9.00E-05	4.00E-04	1.00E-06	1.00E-06		5338.14	0
KLX07A	335.00	455.00							1.22E-04	0	1	8.00E-05	2.00E-04	1.00E-06	1.00E-06		4448.80	0
KLX07A	193.00	313.00							2.49E-04	0	1	1.00E-04	4.00E-04	1.00E-06	1.00E-06		6014.98	0
KLX07A	747.00	792.00							3.35E-05	0	1	2.00E-05	5.00E-05	1.00E-06	1.00E-06		3127.02	0
KLX07A	610.00	655.00							8.98E-06	0	1	8.00E-06	2.00E-05	1.00E-06	1.00E-06		234.34	-1

			leakage_c	hydr_cond_	value_type_	l_measl_k	u_measl_k	spec_storage_s	assumed_s									transmissivity_t	storativity_s	value_type_t	t				transmissivity_t_	value_type_t		storativity_s_	flow_dim_	
idcode	secup	seclow	oeff	ksf	ksf	sf	sf	sf	sf	С	cd	skin	dt1	dt2	t1 t2	dte1 dte2	p_horner	_nlr	_nlr	_nlr	bc_t_nlr	c_nlr	cd_nlr	skin_nlr	grf	_grf	bc_t_grf	grf	grf	comment
KLX07A	103.20	193.20)							1.84E-06	2.03E+02	0.41	262	66647	7		1481.2													
KLX07A	335.00	455.00								1.57E-08	1.73E+00	18.16	114	62406	6		3374.6													
KLX07A	193.00	313.00)							5.69E-08	6.27E+00	4.04	92	87012	2		2365.3													
KLX07A	747.00	792.00)							5.86E-08	6.46E+00	-2.0	181	222624	4		5957.7													
KLX07A	610.00	655.00)							3.56E-08	3.92E+00	-4.13	270	3591	1		4875.9													

	Table	plu_s_hole_test_obs
Data of observation sections of single hole test		Data of observation sections of single hole test

Column	Datatype	Unit	Column Description
site	CHAR		Investigation site name
activity_type	CHAR		Activity type code
idcode	CHAR		Object or borehole identification code
start_date	DATE		Date (yymmdd hh:mm:ss)
secup	FLOAT	m	Upper section limit (m)
seclow	FLOAT	m	Lower section limit (m)
obs_secup	FLOAT	m	Upper limit of observation section
obs_seclow	FLOAT	m	Lower limit of observation section
pi_above	FLOAT	kPa	Groundwater pressure above test section, start of flow period
pp_above	FLOAT	kPa	Groundwater pressure above test section, at stop flow period
pf_above	FLOAT	kPa	Groundwater pressure above test section at stop recovery per
pi_below	FLOAT	kPa	Groundwater pressure below test section at start flow period
pp_below	FLOAT	kPa	Groundwater pressure below test section at stop flow period
pf_below	FLOAT	kPa	Groundwater pressure below test section at stop recovery per
comments	VARCHAR		Comment text row (unformatted text)

idcode	start_date	stop_date	secup	seclow	section_no	obs_secup	obs_seclow	pi_above	pp_above	pf_above	pi_below	pp_below	pf_below	comments
KLX07A	051028 09:51:38	051103 15:53:11	103.20	193.20		102.20	844.73	813	804	814	1492	1481	1493	
KLX07A	051104 21:35:50	051112 08:36:30	335.00	455.00		334.00	844.73	2532	2531	2532	3381	3371	3371	
KLX07A	051112 18:54:39	051120 20:17:29	193.00	313.00		192.00	844.73	1467	1457	1473	2379	2375	2381	
KLX07A	051122 21:14:52	051129 10:56:05	747.00	792.00		746.00	844.73	5643	5644	5645	6001	5949	5993	
KLX07A	051130 10:14:30	051208 08:54:40	610.00	655.00		609.00	844.73	4563	4568	4571	4911	4861	4901	

Borehole: KLX07A

APPENDIX 6

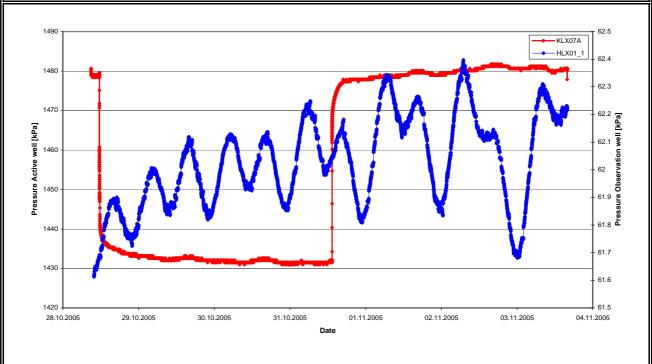
Index calculation

Borehole: KLX07A

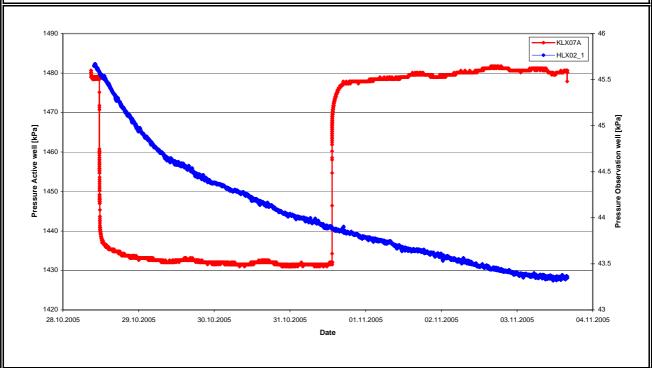
APPENDIX 6-1

Index calculation
KLX07A Section 103.20-193.20 m pumped

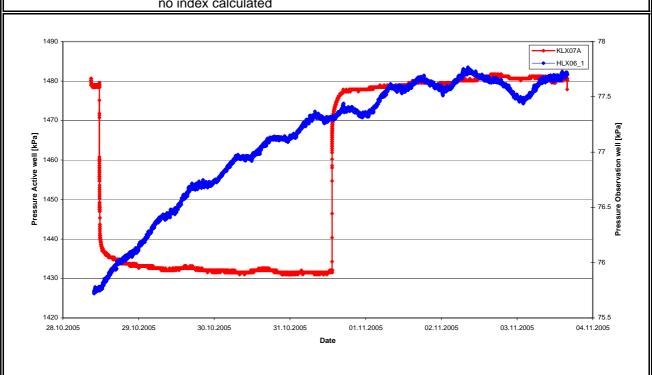
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_{p}	kPa	46
Observation Hole:	HLX01	Section no.:		HLX01_1
		Section length:		16.00-100.63
Distance r _s [m]:	751.43	max. Drawdown s _o	[m]:*	0.03
Response time dt _L [s]:	#NV	r		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	61.7
Pressure in test section	before stop of flowing:	p_p	kPa	62.0
	nge during flowing period:*	dp_p	kPa	0.3
Normalized distance wit	th respect to the response time			
Index 1	r_s^2/dt_L (m ² /s): #NV			
Normalized drawdown v	with respect to pumping flow rate	۵		
Index 2	s_p/Q_p (s/m ²): #NV	5		
mack 2	3p/ 4cp (3/111)			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV			
•				* see comment
Comment:	no response due to pumping in pressure changes due to natural no index calculated		dal effects) or	nly
	THO ITHOU CAROLICUS			
1490				T 62.5
				← KLX07A ← HLX01_1



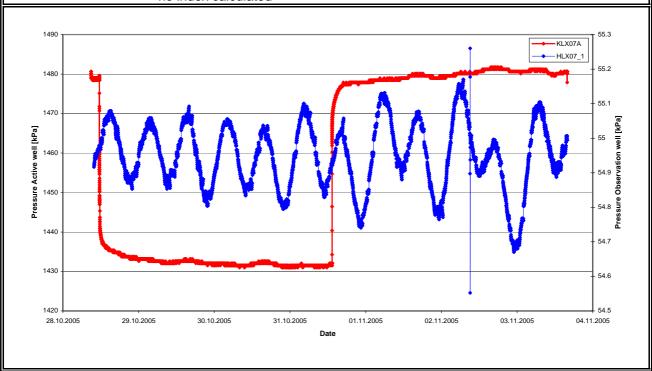
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p_{i}	kPa	1478
Pressure in test section before stop of flowing:		p_p	kPa	1432
Maximum pressure change during flowing period:		dp_p	kPa	46
Observation Hole:	HLX02	Section no.:		HLX02_1
		Section length:		0.60-132.00
Distance r _s [m]:	1619.95			0.17
Response time dt _L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	45.6
Pressure in test section before stop of flowing:		p_p	kPa	43.9
Maximum pressure change during flowing period:*		dp_p	kPa	1.7
Normalized distance with	n respect to the response time			
Index 1	r _s ² /dt _L (m ² /s): #NV			
Normalized drawdown w	with respect to numbing flow rate			
Index 2	rith respect to pumping flow rate s_p/Q_p (s/m²): #NV			
IIIUex 2	S _p /Q _p (S/III). πιτν			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV			
				* see comment
Comment:	no response due to pumping in pressure changes due to natura no index calculated		dal effects) on	ily
1490			_	► KLX07A 46
				— HLX02_1



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	inge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX06	Section no.:		HLX06_1
		Section length:		1.00-100.00
Distance r _s [m]:	739.56	max. Drawdown s _p	_ວ [m]:*	0.15
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	75.8
Pressure in test section	before stop of flowing:	p_p	kPa	77.3
	inge during flowing period:*	dp_p	kPa	1.5
Mormalized distance wit	th respect to the response time			
Index 1	r_s^2/dt_L (m ² /s): #NV			
Normalized drawdown v	with respect to pumping flow rat	ite		
Index 2	s_p/Q_p (s/m ²): #NV			
$(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$:	#NV	,		
				* see comment
Comment:	no response due to pumping i			
	pressure changes due to natu no index calculated	ıral fluctuations (e.g. ti	dal effects) on	
1490				78



Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section [m bToC]:	10	3.20-193.20
Test Start:	28.10.2005 09:51		Test Stop:		03.11	1.2005 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:		31.10	0.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_i	k	Pa	1478
Pressure in test section	before stop of flowing:		p_p	k	Pa	1432
Maximum pressure cha	nge during flowing period	l:	dp_p	k	Pa	46
Observation Hole:	HLX07		Section no.:			HLX07_1
			Section length:		1	6.00-100.00
Distance r _s [m]:	958.88		max. Drawdown s	_o [m]:*		0.01
Response time dt_L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_{i}	k	Pa	55.0
Pressure in test section	before stop of flowing:		p_p	k	Pa	54.9
Maximum pressure cha	nge during flowing period	l:*	dp _p	k	Pa	0.1
Normalized distance wi	th respect to the response	e time				
Index 1	r _s ²/dt _L (m²/s):	#NV				
Normalized drawdown	with respect to pumping fl	ow rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
, , , , , , , , , , , , , , , , , , ,	·	//B ** *				
$(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$:		#NV			* 500	comment
Comment:	no response due to pun	nping in	source		366	COMMINICAL
	pressure changes due t			idal effects	only	
	no index calculated				-	



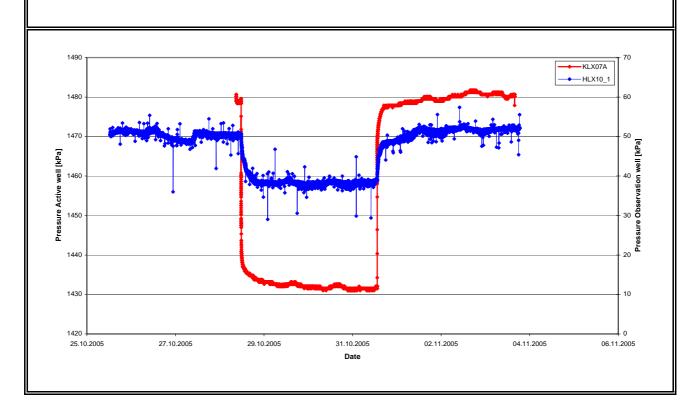
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX10	Section no.:		HLX10_1
		Section length:		3.00-85.00
Distance r _s [m]:	105.46	max. Drawdown s _p	[m]:*	1.17
Response time dt_L [s]:	209			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	50.3
Pressure in test section	before stop of flowing:	p_p	kPa	38.8
Maximum pressure change during flowing period:*		dp _p	kPa	11.5
Normalized distance with Index 1	h respect to the response time r_s^2/dt_L (m ² /s): 53.			

Index 2 $s_p/Q_p (s/m^2)$: 1723.93

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: 8030.64

* see comment

Comment: clear response due to pumping in source

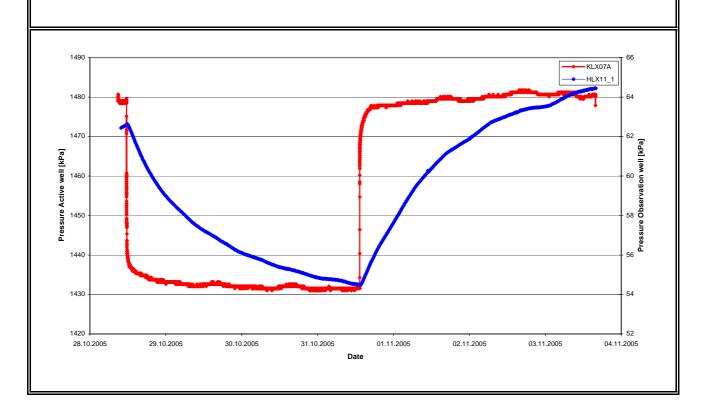


Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX11	Section no.:		HLX11_1
		Section length:		17.00-70.00
Distance r _s [m]:	160.20	max. Drawdown s _p	[m]:*	0.83
Response time dt_L [s]:	1521			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	62.6
Pressure in test section	before stop of flowing:	p_p	kPa	54.5
Maximum pressure change during flowing period:*		dp_p	kPa	8.1
Normalized distance with Index 1	h respect to the response time r_s^2/dt_L (m²/s):			

Index 2 $s_p/Q_p (s/m^2)$: 1214.25

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: 6164.05

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section	[m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	inge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX11	Section no.:		HLX11_2
		Section length:		6.00-16.00
Distance r _s [m]:	175.11	max. Drawdown s	s _p [m]:*	0.80
Response time dt _L [s]:	6321			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	61.3
Pressure in test section	before stop of flowing:	p_p	kPa	53.5
Maximum pressure cha	inge during flowing period:*	dp_p	kPa	7.8
Normalized distance wi	th respect to the response times r _s ²/dt _L (m²/s):	ne 4.85		
Normalized drawdown	with respect to pumping flow s_p/Q_p (s/m ²): 116	rate 9.28		

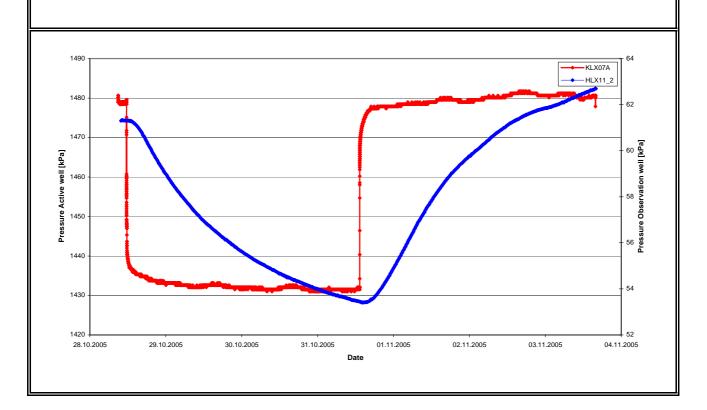
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

6039.78

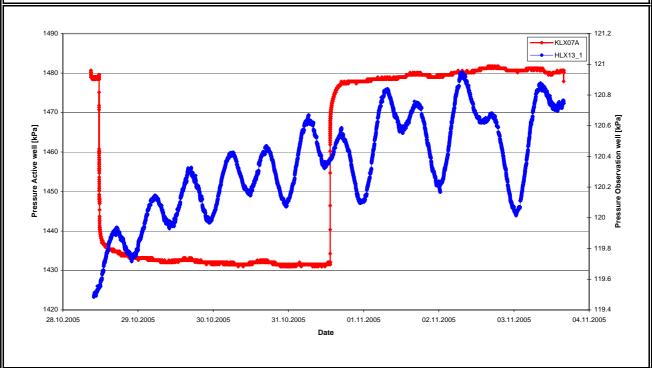
* see comment

Comment:

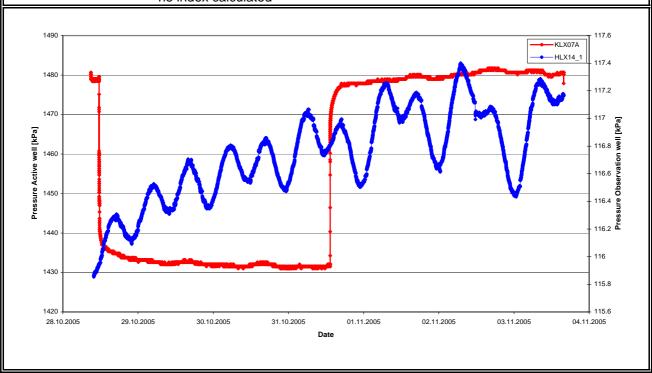
clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX13	Section no.:		HLX13_1
		Section length:		11.87-200.02
Distance r _s [m]:	1552.42	max. Drawdown s _p	, [m]:*	0.08
Response time dt _L [s]:	#NV		• -	
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	119.5
Pressure in test section	before stop of flowing:	p_p	kPa	120.3
Maximum pressure char	nge during flowing period:*	dp_p	kPa	0.8
Normalized distance wit	th respect to the response time			-
Index 1	r_s^2/dt_L (m ² /s): #NV			
	· - · ,			
	with respect to pumping flow ra			
Index 2	s_p/Q_p (s/m ²): #NV	1		
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV	,		
(S _p /Q _p) III(I _s /I ₀) (3/III).	πιαν			* see comment
Comment:	no response due to pumping	in source		
	pressure changes due to natu		dal effects) or	aly
	no index calculated			
1490 +				121.2
1490				◆ KLX07A
1480				HLX13_1 121



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX14	Section no.:		HLX14_1
		Section length:		11.00-115.90
Distance r _s [m]:	1551.21	max. Drawdown s _p	[m]:*	0.09
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	115.9
Pressure in test section	before stop of flowing:	p_p	kPa	116.8
Maximum pressure char	nge during flowing period:*	dp_p	kPa	0.9
Normalized distance wit	th respect to the response time r_s^2/dt_L (m²/s): #N'		_	
	, ,			
	with respect to pumping flow ra			
Index 2	s_p/Q_p (s/m ²): #N	V		
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#N'	V		
· ·				* see comment
Comment:	no response due to pumping pressure changes due to nat no index calculated		dal effects) o	nly
1490				117.6
		1	L	◆ HLX14_1 117.4
1480		The same of the sa	A CONTRACTOR OF THE PERSON NAMED IN	



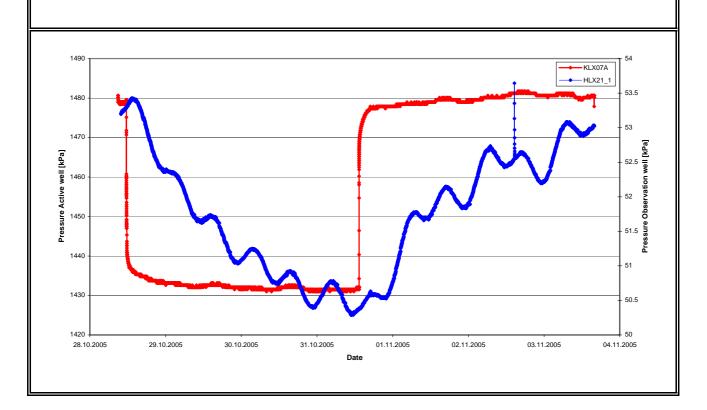
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section	[m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_i	kP	a 1478
Pressure in test section	n before stop of flowing:	p_p	kP	a 1432
Maximum pressure cha	ange during flowing period:	dp_p	kP	a 46
Observation Hole:	HLX21	Section no.:		HLX21_1
		Section length:		81.00-150.00
Distance r _s [m]:	435.74	max. Drawdown s	_p [m]:*	0.27
Response time dt_L [s]:	10924			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_i	kP	a 53.4
Pressure in test section	n before stop of flowing:	p_p	kP	a 50.8
Maximum pressure cha	ange during flowing period:*	dp_p	kP	a 2.6
Normalized distance wi	ith respect to the response tir	me 1 7.38		
Normalized drawdown Index 2	with respect to pumping flow s_p/Q_p (s/m ²): 38	rate 39.76		

Comment:

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

clear response due to pumping in source

2368.58



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX21	Section no.:		HLX21_2
		Section length:		9.10-80.00
Distance r _s [m]:	434.21	max. Drawdown s	_p [m]:*	0.24
Response time dt _L [s]:	9379			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	52.3
Pressure in test section	before stop of flowing:	p_p	kPa	49.9
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	2.4
Normalized distance wi	th respect to the response times r_s^2/dt_L (m²/s): 20	ne 0.10		
Normalized drawdown v	with respect to pumping flow s_p/Q_p (s/m ²): 35	rate 9.78		

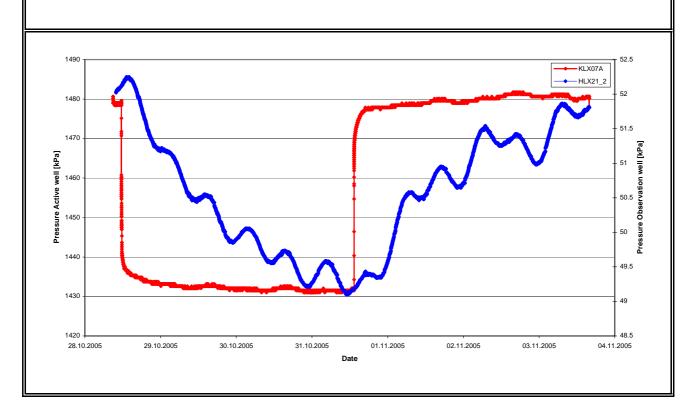
2185.12

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

* see comment

Comment:

clear response due to pumping in source



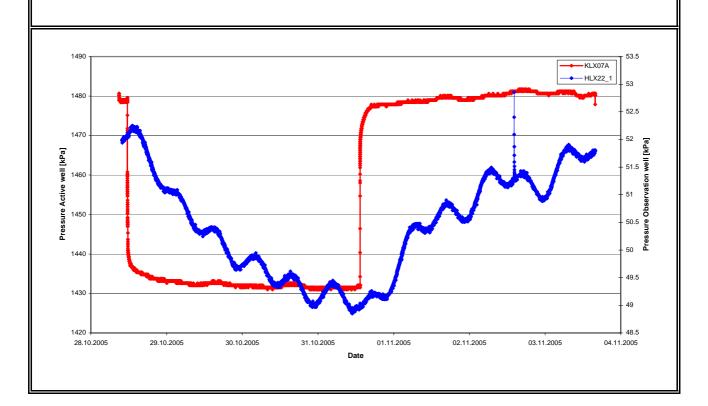
Pump Start: Flow Rate Q _p [m ³ /s]:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Pressure data	6.80E-04	Nomenclature	Unit	Value
		Nomenciature	Unit	value
Pressure in test section	before start of flowing:	p_i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp _p	kPa	46
Observation Hole:	HLX22	Section no.:		HLX22_1
		Section length:		86.00-163.20
Distance r _s [m]:	467.00	max. Drawdown s_p	[m]:*	0.29
Response time dt_L [s]:	10756			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	52.2
Pressure in test section	before stop of flowing:	p_p	kPa	49.4
Maximum pressure change during flowing period:*		dp_p	kPa	2.8
Normalized distance wit	th respect to the response time			
Index 1	r_s^2/dt_L (m ² /s): 20.2			

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$:

2579.86

* see comment

Comment: clear response due to pumping in source



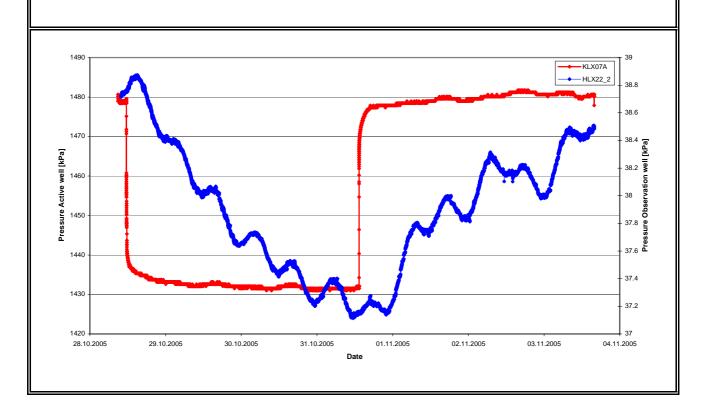
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure change during flowing period:		dp_p	kPa	46
Observation Hole:	HLX22	Section no.:		HLX22_2
		Section length:		9.19-85.00
Distance r _s [m]:	477.00	max. Drawdown s _p	[m]:*	0.15
Response time dt_L [s]:	13961	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	38.9
Pressure in test section	before stop of flowing:	p_p	kPa	37.4
Maximum pressure change during flowing period:*		dp_p	kPa	1.5
Normalized distance wit	th respect to the response time			

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 224.86

οργα_ρ (5/111). 224.00

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: 1386.83

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kP	a 1478
Pressure in test section	before stop of flowing:	p_p	kP	a 1432
Maximum pressure char	Maximum pressure change during flowing period:		kP	'a 46
Observation Hole:	HLX23	Section no.:		HLX23_1
		Section length:		61.00-160.20
Distance r _s [m]:	362.14	max. Drawdown s _p	[m]:*	0.05
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kP	a 98.3
Pressure in test section	before stop of flowing:	p_p	kP	a 97.8
Maximum pressure change during flowing period:*		dp _p	kP	a 0.5
Normalized distance with	h respect to the response time			

Index 2

 s_p/Q_p (s/m²):

#NV

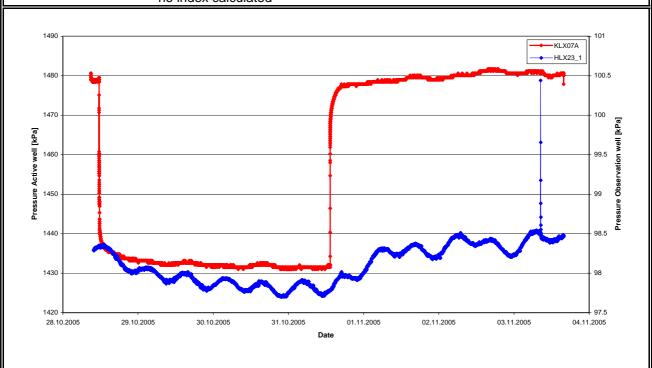
 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

response due to pumping in source (analysis performed) no response according to SKB MD 330.003 ($\rm s_p < 0.1~m$)

no index calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kP	a 1478
Pressure in test section	before stop of flowing:	p_p	kP	a 1432
Maximum pressure char	nge during flowing period:	dp_p	kP	a 46
Observation Hole:	HLX23	Section no.:		HLX23_2
		Section length:		6.10-60.00
Distance r _s [m]:	361.12	max. Drawdown s _p	[m]:*	0.09
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kP	a 96.3
Pressure in test section	before stop of flowing:	p_p	kP	a 95.4
Maximum pressure change during flowing period:*		dp_p	kP	a 0.9
Normalized distance with	h respect to the response time r_s^2/dt_L (m²/s): #NV			

Index 2

 s_p/Q_p (s/m²):

#NV

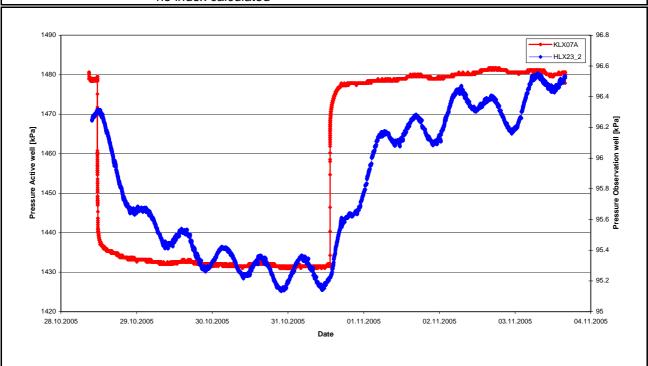
 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

response due to pumping in source (analysis performed) no response according to SKB MD 330.003 ($s_p < 0.1 \text{ m}$)

no index calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section	[m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 1478
Pressure in test section	before stop of flowing:	p_p	kPa	a 1432
Maximum pressure cha	inge during flowing period:	dp_p	kPa	a 46
Observation Hole:	HLX24	Section no.:		HLX24_1
		Section length:		41.00-175.20
Distance r _s [m]:	368.70	max. Drawdown	s _p [m]:*	0.05
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_i	kPa	98.4
Pressure in test section	before stop of flowing:	p_p	kPa	a 97.9
Maximum pressure cha	inge during flowing period:*	dp_p	kPa	a 0.5
Normalized distance wi	th respect to the response tim	ne		
Index 1	r _s ² /dt _L (m ² /s): #N			
Normalized drawdown v	with respect to pumping flow r s_p/Q_p (s/m ²): #N			

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

* see comment

Comment: response due to pumping in source (analysis performed) no response according to SKB MD 330.003 ($s_p < 0.1 \text{ m}$) no index calculated

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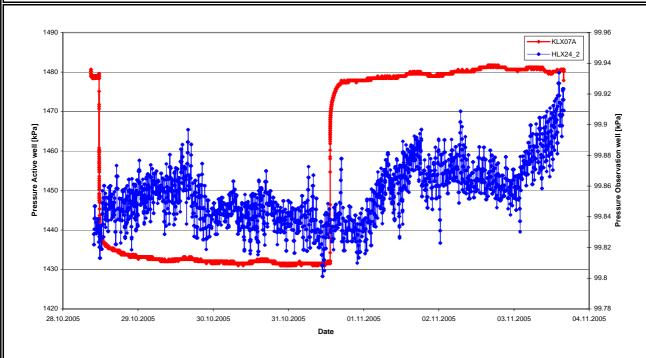
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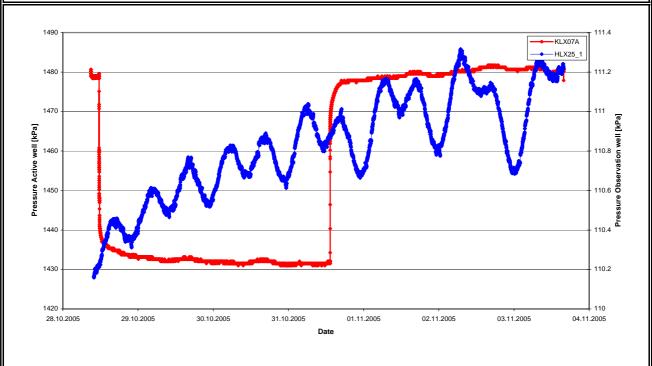
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#NV

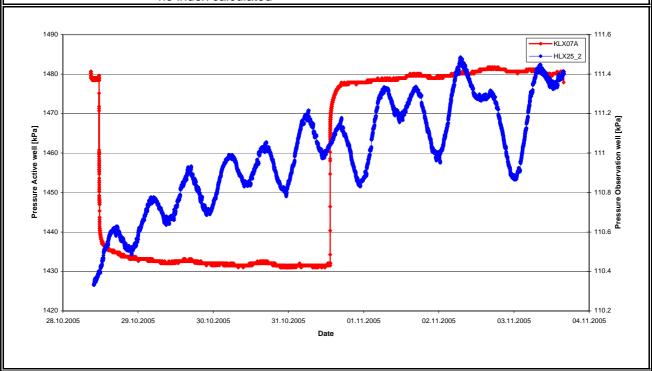
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							
Test Start: 28.10.2005 09:51 Test Stop: 03.11.2005 15: Pump Start: 28.10.2005 12:34 Pump Stop: 31.10.2005 13: Flow Rate Q _p [m³/s]: 6.80E-04 Nomenclature Unit Value Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p _i kPa 14 Pressure in test section before stop of flowing: p _p kPa 14 Maximum pressure change during flowing period: dp _p kPa 14 Maximum pressure change during flowing period: Section no.: HLX24 Section length: 9.10-40.0 Distance r _s [m]: 402.48 max. Drawdown s _p [m]:* 0.0 Response time dt _L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p _i kPa 9.5 Pressure in test section before stop of flowing: p _p kPa 9.5 Maximum pressure change during flowing period:* dp _p kPa 0.0 Normalized dista	Activityplan No.	AP PS 400-05-045					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Pumping Hole:	KLX07A		Pumping Section	[m bToC]:	1	03.20-193.20
Flow Rate Q _p [m³/s]: 6.80E-04 Pressure data Pressure in test section before start of flowing: p _i kPa 14 Pressure in test section before stop of flowing: p _p kPa 14 Maximum pressure change during flowing period: dp _p kPa 14 Maximum pressure change during flowing period: dp _p kPa 14 Maximum pressure change during flowing period: dp _p kPa 14 Distance r _s [m]: HLX24 Section no.: HLX24 Section length: 9.10-40.0 Distance r _s [m]: 402.48 max. Drawdown s _p [m]:* 0.0 Response time dt _L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p _i kPa 99 Pressure in test section before stop of flowing: p _p kPa 99 Maximum pressure change during flowing period:* dp _p kPa 99 Maximum pressure change during flowing period:* dp _p kPa 99 Maximum pressure change during flowing period:* dp _p kPa 99 Normalized distance with respect to the response time Index 1 r _s ²/dt _L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s _p /Q _p (s/m²): #NV Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only		28.10.2005 09:51		Test Stop:			
Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa 14 Pressure in test section before stop of flowing: p_p kPa 14 Maximum pressure change during flowing period: dp_p kPa 14 Maximum pressure change during flowing period: dp_p kPa 14 Observation Hole: HLX24 Section no.: HLX24. Section length: 9.10-40.1 Distance r_s [m]: 402.48 max. Drawdown s_p [m]:* 0.1 Response time dt_L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa 96 Pressure in test section before stop of flowing: p_p kPa 96 Maximum pressure change during flowing period:* dp_p kPa 96 Maximum pressure change during flowing period:* dp_p d				Pump Stop:		31.1	0.2005 13:20
Pressure in test section before start of flowing: p_i kPa 14 Pressure in test section before stop of flowing: p_p kPa 14 Maximum pressure change during flowing period: dp_p kPa 14 Maximum pressure change during flowing period: dp_p kPa 15 Maximum pressure change during flowing period: dp_p kPa 16 Maximum pressure change during flowing period: dp_p kPa 17 Maximum pressure dp_p	Flow Rate Q _p [m³/s]:	6.80E-04					
Pressure in test section before stop of flowing: p_p kPa 144 Maximum pressure change during flowing period: dp_p kPa 144 Maximum pressure change during flowing period: dp_p kPa 144 Maximum pressure change during flowing period: dp_p kPa 144 Maximum pressure change during flowing period: Section no.: Section length: 9.10-40.0 Max. Drawdown s_p [m]:* 0.10-40.0 Max. Drawdown s_p	Pressure data			Nomenclature	Unit		Value
Maximum pressure change during flowing period: Observation Hole: HLX24 Section no.: Section length: Sep	Pressure in test section	before start of flowing:		p_{i}	k	Pa	1478
Observation Hole: HLX24 Section no.: Section length: 9.10-40.0 Distance r _s [m]: 402.48 max. Drawdown s _p [m]:* 0.0 Response time dt _L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p _i kPa 99.0 Maximum pressure change during flowing period:* dp _p kPa 99.0 Normalized distance with respect to the response time Index 1 r _s ²/dt _L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s _p /Q _p (s/m²): #NV (s _p /Q _p)*In(r _s /r ₀) (s/m²): #NV Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Pressure in test section	before stop of flowing:		p_p	k	Pa	1432
Distance r_s [m]: 402.48 max. Drawdown s_p [m]:* 0.0 Response time dt_L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa 99. Maximum pressure change during flowing period:* dp_p kPa 99. Maximum pressure change during flowing period:* dp_p kPa 0.0 Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV $(s_p/Q_p)*In(r_s/r_0)$ (s/m^2): #NV Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Maximum pressure char	nge during flowing period	l:	dp_p	k	Pa	46
Distance r_s [m]: 402.48 max. Drawdown s_p [m]:* 0.48 Response time dt_L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa 99 Maximum pressure change during flowing period:* dp_p kPa 90 Maximum pressure change during flowing period:* dp_p kPa 00 Mormalized distance with respect to the response time Index 1 r_s^2/dt_L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV $(s_p/Q_p)*In(r_s/r_0)$ (s/m²): #NV Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Observation Hole:	HLX24		Section no.:			HLX24_2
Response time dt_L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa 99 Pressure in test section before stop of flowing: p_p kPa 99 Maximum pressure change during flowing period:* dp_p kPa 0 Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV $(s_p/Q_p)*In(r_s/r_0)$ (s/m^2): #NV To response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only				Section length:			9.10-40.00
Pressure data Nomenclature Pressure in test section before start of flowing: Pressure in test section before stop of flowing: Pressure in test section before stop of flowing: Maximum pressure change during flowing period:* Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV (s_p/Q_p)*In(r_s/r_0) (s/m²): #NV The section before start of flowing: Pi	Distance r _s [m]:	402.48		max. Drawdown s	s _p [m]:*		0.00
Pressure in test section before start of flowing: p_i kPa 98 Pressure in test section before stop of flowing: p_p kPa 98 Maximum pressure change during flowing period:* dp_p kPa 00 Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV (s_p/Q_p)*In(r_s/r_0) (s/m^2): #NV Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Response time dt _L [s]:	#NV					
Pressure in test section before stop of flowing: p_p kPa 98 Maximum pressure change during flowing period:* dp_p kPa 00 Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV (s_p/Q_p)*In(r_s/r_0) (s/m^2): #NV * see comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Pressure data			Nomenclature	Unit		Value
Maximum pressure change during flowing period:* dp_p kPa Q Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s) : #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2) : #NV $(s_p/Q_p)^*In(r_s/r_0)$ (s/m^2) : #NV * see comment Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Pressure in test section	before start of flowing:		p_{i}	k	Pa	99.8
Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV (s_p/Q_p)*In(r_s/r_0) (s/m^2): #NV * see comment Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Pressure in test section	before stop of flowing:		p_p	k	Pa	99.8
Index 1 r_s^2/dt_L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV $(s_p/Q_p)^*In(r_s/r_0)$ (s/m²): #NV * see comment Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Maximum pressure char	nge during flowing period	l:*	dp_p	k	Pa	0.0
Index 1 r_s^2/dt_L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV $(s_p/Q_p)^*In(r_s/r_0)$ (s/m²): #NV * see comment Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Normalized distance wit	h respect to the response	e time				
Index 2 s_p/Q_p (s/m²): #NV		•					
	Normalized drawdown v	vith respect to pumping fl	ow rate				
* see comment Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	Index 2	s_p/Q_p (s/m ²):	#NV				
Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only	$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:		#NV				
pressure changes due to natural fluctuations (e.g. tidal effects) only						* see	e comment
no index calculated	Comment:	pressure changes due t			tidal effects)	only	
		no index calculated					



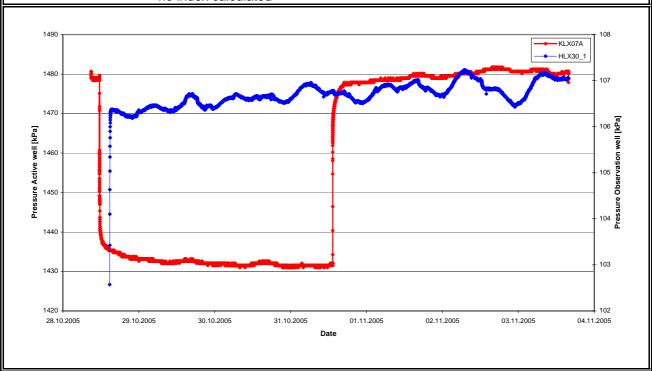
* 0 % 1 NI.				
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	a 1478
Pressure in test section	before stop of flowing:	p_p	kPa	a 1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	a 46
Observation Hole:	HLX25	Section no.:		HLX25_1
		Section length:		61.00-202.50
Distance r _s [m]:	1434.55	max. Drawdown s _r	_o [m]:*	0.06
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 110.2
Pressure in test section	before stop of flowing:	p_p	kPa	a 110.8
Maximum pressure char	nge during flowing period:*	dp_p	kPa	a 0.6
Normalized distance wit	h respect to the response time	·		
Index 1	$r_s^2/dt_L (m^2/s)$: #NV			
Normalized drawdown w	with respect to numping flow re	40		
Index 2	vith respect to pumping flow rates s _p /Q _p (s/m²): #NV			
IIIU C X Z	5 _p /Q _p (5/111). πιτν			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV	1		
(Op/ ¬p/ ···(·s··u/ (-/··· /-				* see comment
Comment:	no response due to pumping	in source		¥
	pressure changes due to natu	ural fluctuations (e.g. t	idal effects) o	nly
	no index calculated			
1490				111.4 KLX07A
			<u> </u>	HLX25_1
1480		Married Williams		111.2
		Γ $\Lambda\Lambda$ I	M !	
1470		. IVI		111



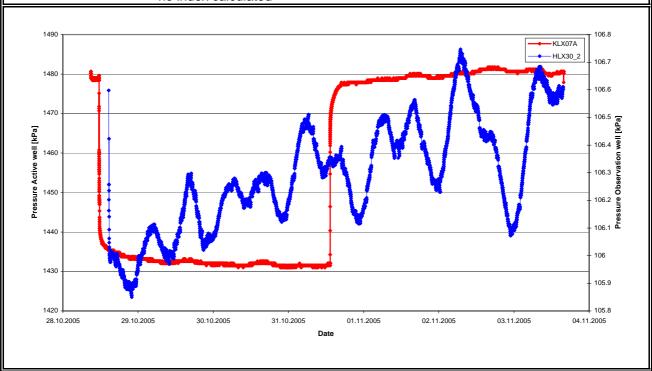
Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section	n [m bToC]:	:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		(03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		3	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04				
Pressure data		Nomenclature	Unit		Value
Pressure in test section I	pefore start of flowing:	р	'i	kPa	1478
Pressure in test section I	pefore stop of flowing:	p)	kPa	1432
Maximum pressure chan	ge during flowing period:	dp,)	kPa	46
Observation Hole:	HLX25	Section no.:			HLX25_2
		Section length:			6.12-60.00
Distance r _s [m]:	1439.90	max. Drawdowr	ո s _p [m]:*		0.06
Response time dt_L [s]:	#NV				
Pressure data		Nomenclature	Unit		Value
Pressure in test section I	pefore start of flowing:	р	i	kPa	110.4
Pressure in test section I	pefore stop of flowing:	p)	kPa	111.0
Maximum pressure chan	ge during flowing period:*	dp		kPa	0.6
Normalized distance with	n respect to the response ti	ime			
Index 1	• • •	NV			
Normalized drawdown w	ith respect to pumping flow	√ rate			
Index 2	^	*NV			
$(s/O)^*\ln(r/r)(s/m^2)$	4	ŧNV			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#	FIN V		*	see comment
Comment:	no response due to pumpi	ng in source			
	pressure changes due to r no index calculated	natural fluctuations (e.ç	g. tidal effec	ts) onl	у
1490				-	111.6 -KLX07A
					HLX25_2



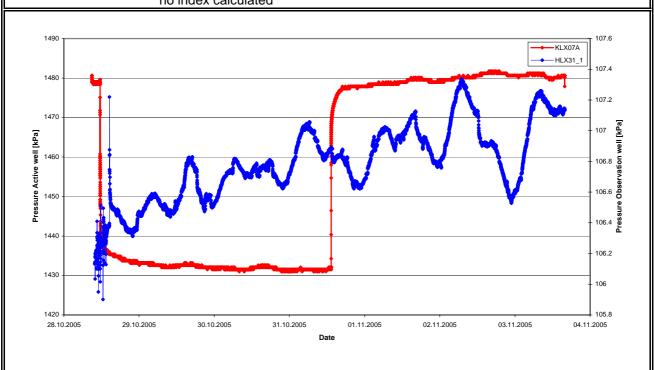
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section	[m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	;	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	ange during flowing period:	dp_p	kPa	46
Observation Hole:	HLX30	Section no.:		HLX30_1
		Section length:		101.00-163.40
Distance r _s [m]:	1143.48	max. Drawdown s	s _p [m]:*	0.42
Response time dt _L [s]:	#NV		<u></u>	
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	102.6
Pressure in test section	before stop of flowing:	p_p	kPa	106.7
Maximum pressure cha	ange during flowing period:*	dp_p	kPa	4.1
Normalized distance wi	ith respect to the response tin	ne		
Index 1	r_s^2/dt_L (m ² /s): #N	NV		
Normalized drawdown	with respect to pumping flow	rate		
Index 2		NV		
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	1#	NV	+	* see comment
Comment:	no response due to pumpin	ng in source		
	pressure changes due to na no index calculated	atural fluctuations (e.g.	tidal effects) on	ly
1490				108
				► KLX07A



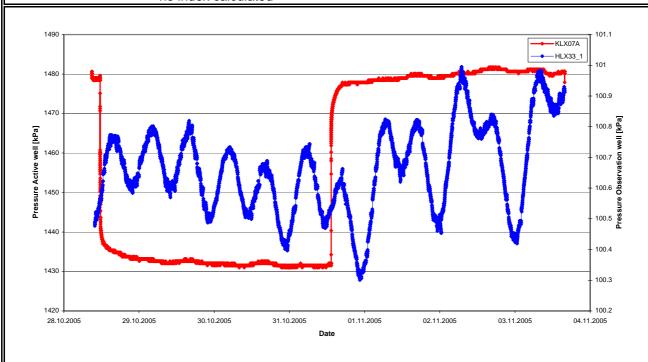
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure chair	nge during flowing period:	dp_{p}	kPa	46
Observation Hole:	HLX30	Section no.:		HLX30_2
		Section length:		9.10-100.0
Distance r _s [m]:	1163.08	max. Drawdown s _p	[m]:*	0.03
Response time dt _L [s]:	#NV		• -	
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	106.6
Pressure in test section	-	p _p	kPa	106.3
	nge during flowing period:*	dp_{p}	kPa	0.3
Index 1 Normalized drawdown v	th respect to the response time r_s^2/dt_L (m²/s): #NV	€		
Index 2	s_p/Q_p (s/m ²): #NV			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV			*
Comment:	no response due to pumping ir	n source		* see comment
Comment	pressure changes due to natur no index calculated		dal effects) or	nly
1490				106.8 HLX30_2



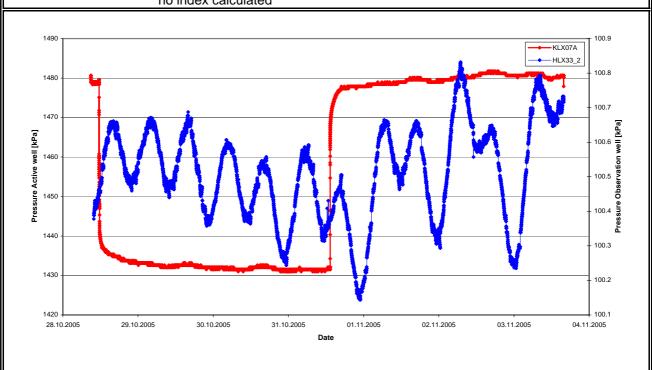
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_i	kPa	a 1478
Pressure in test section	before stop of flowing:	p_p	kPa	a 1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	a 46
Observation Hole:	HLX31	Section no.:		HLX31_1
		Section length:		9.10-133.20
Distance r _s [m]:	1099.48	max. Drawdown s _p	, [m]:*	0.07
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 106.2
Pressure in test section	before stop of flowing:	p_p	kPa	a 106.9
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	a 0.7
Index 1	th respect to the response time r_s^2/dt_L (m²/s): #NV			
	vith respect to pumping flow rat			
Index 2	s_p/Q_p (s/m ²): #NV			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV			
				* see comment
Comment:	no response due to pumping i pressure changes due to natu no index calculated		idal effects) c	only
1490				107.6



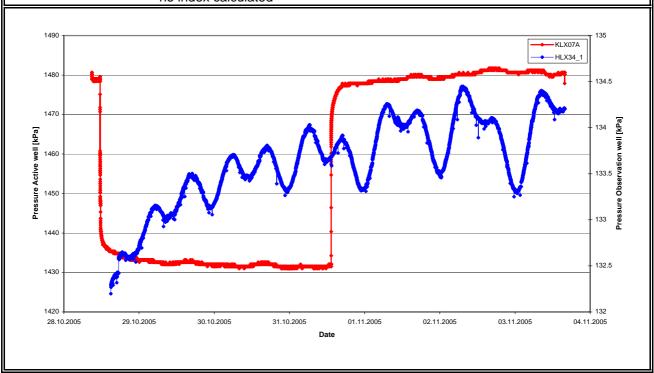
Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section	[m bToC]:	103.20-	193.20
Test Start:	28.10.2005 09:51		Test Stop:		03.11.200	5 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:		31.10.200	5 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit	Valu	e
Pressure in test section	before start of flowing:		p_i	k	кРа	1478
Pressure in test section	before stop of flowing:		p_p	k	кРа	1432
Maximum pressure cha	nge during flowing period	:	dp_p	k	кРа	46
Observation Hole:	HLX33		Section no.:		HL	_X33_1
			Section length:		31.00-	202.10
Distance r _s [m]:	633.76		max. Drawdown	s _p [m]:*		0.01
Response time dt_L [s]:	#NV					
Pressure data			Nomenclature	Unit	Valu	e
Pressure in test section	before start of flowing:		p _i	k	кРа	100.6
Pressure in test section	before stop of flowing:		p_p	k	кРа	100.5
Maximum pressure cha	nge during flowing period	.*	dp _p	k	кРа	0.1
Normalized distance wit	h respect to the response	e time				
Index 1	r_s^2/dt_L (m ² /s):	#NV				
Normalized drawdown v	vith respect to pumping flo	ow rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:		#NV			* 000 0000	mont
Comment:	no response due to pum	nina in	SOURCE		* see com	пепі
Commont.	pressure changes due to			tidal effects	s) only	
	no index calculated	o natala		iidai oiiooto	.,,	



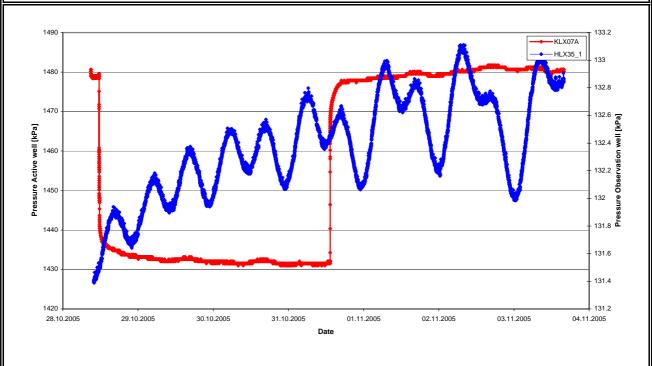
Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section	[m bToC]:	1	03.20-193.20
Test Start:	28.10.2005 09:51		Test Stop:		03.1	11.2005 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:		31.1	10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_{i}	k	Pa	1478
Pressure in test section	before stop of flowing:		p_p	k	Pa	1432
Maximum pressure cha	nge during flowing period:		dp _p	k	Pa	46
Observation Hole:	HLX33		Section no.:			HLX33_2
			Section length:			9.10-30.00
Distance r _s [m]:	685.95		max. Drawdown s	_p [m]:*		0.02
Response time dt _L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p _i	k	Pa	100.5
Pressure in test section	before stop of flowing:		p_p	k	Pa	100.3
Maximum pressure cha	nge during flowing period:	*	dp_p	k	Pa	0.2
Normalized distance wit	th respect to the response	time				
Index 1	r _s ² /dt _L (m ² /s):	#NV				
Normalized drawdown v	vith respect to pumping flo	w rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:		#NV				
					* se	e comment
Comment:	no response due to pum					
	pressure changes due to	natura	I fluctuations (e.g.	tidal effects) only	
	no index calculated					



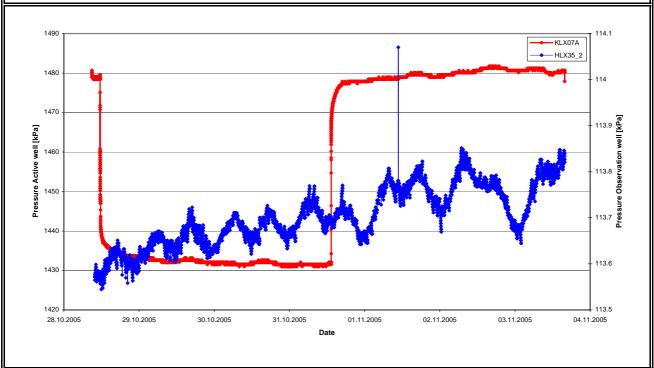
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:	7	03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	3	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	J	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure chair	nge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX34	Section no.:		HLX34_1
		Section length:		9.00-151.80
Distance r _s [m]:	1790.10	max. Drawdown s _p	[m]:*	0.14
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	132.2
Pressure in test section	before stop of flowing:	p_p	kPa	133.6
Maximum pressure char	nge during flowing period:*	dp _p	kPa	1.4
Index 1	th respect to the response time r_s^2/dt_L (m²/s): #NV			
	with respect to pumping flow rate)		
Index 2	s_p/Q_p (s/m ²): #NV			
$(s_p/Q_p)^*In(r_s/r_0)$ (s/m ²):	#NV		*	
Comment:	no response due to pumping in) SOUTCA		see comment
Comment.	pressure changes due to natur no index calculated		dal effects) onl	у
1490				—KLX07A —HLX34_1
1480			-	134.5



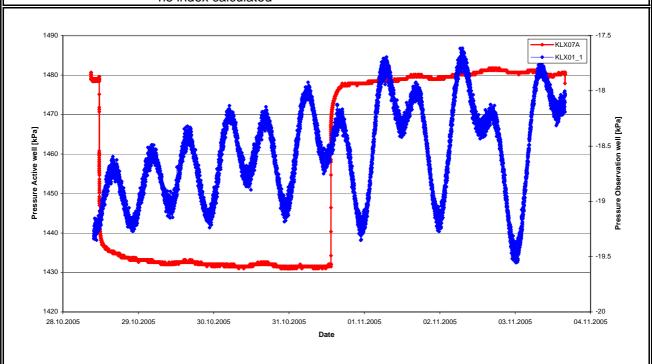
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	;	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	inge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX35	Section no.:		HLX35_1
		Section length:		65.00-151.50
Distance r _s [m]:	1788.07	max. Drawdown s _p	, [m]:*	0.09
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	131.5
Pressure in test section	before stop of flowing:	p_p	kPa	132.4
Maximum pressure cha	inge during flowing period:*	dp_p	kPa	0.9
Normalized distance wit	th respect to the response time ${r_s}^2/{dt_L}$ (m²/s): #NV			
Normalized drawdown \	with respect to pumping flow ra	ate		
Index 2	s_p/Q_p (s/m ²): #NV	1		
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV	I		
Comment:	no response due to pumping	in course	*	see comment
Comment.	pressure changes due to natu no index calculated		dal effects) onl	у
1490				133.2 —KLX07A
		_ A _ I		HLX35_1 133
1480		The state of the s		<u> 77</u>



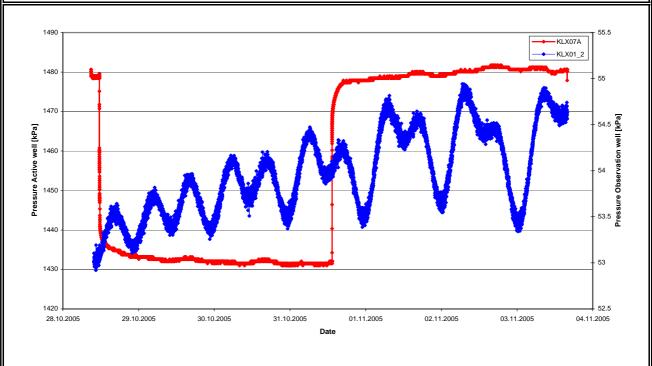
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	HLX35	Section no.:		HLX35_2
		Section length:		6.00-64.00
Distance r _s [m]:	1846.24	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	113.6
Pressure in test section	before stop of flowing:	p_p	kPa	113.7
Maximum pressure char	nge during flowing period:*	dp _p	kPa	0.1
Normalized distance wit	th respect to the response time		,	
Index 1	r_s^2/dt_L (m ² /s): #NV			
	with respect to pumping flow rate	;		
Index 2	s_p/Q_p (s/m ²): #NV			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV			
(op/				* see comment
Comment:	no response due to pumping in			
	pressure changes due to natura no index calculated	al fluctuations (e.g. ti	dal effects) or	ıly
1490				
				— HLX35_2
1480			Name and Address of the Owner, where the Owner, which is the Owner, where the Owner, which is	



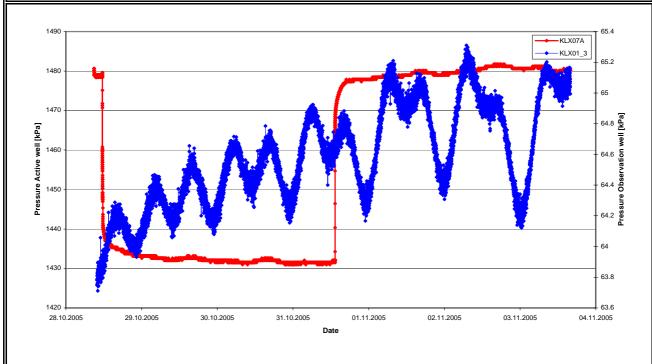
AP PS 400-05-045					
KLX07A		Pumping Section	[m bToC]:		103.20-193.20
28.10.2005 09:51		Test Stop:			03.11.2005 15:53
28.10.2005 12:34		Pump Stop:		;	31.10.2005 13:20
6.80E-04					
		Nomenclature	Unit		Value
before start of flowing:		p_{i}	I	kPa	1478
before stop of flowing:		p_p	1	kPa	1432
nge during flowing period	:	dp_p	I	kPa	46
KLX01		Section no.:			KLX01_1
		Section length:			705.00-1078.00
1353.48		max. Drawdown s	s _p [m]:*		0.05
#NV					
		Nomenclature	Unit		Value
before start of flowing:		p _i	I	kPa	-19.2
before stop of flowing:		p_p	1	kPa	-18.7
nge during flowing period	:*	dp_p	I	kPa	0.5
h respect to the response	e time				
r _s ²/dt _L (m²/s):	#NV				
vith respect to pumping fl	ow rate				
s_p/Q_p (s/m ²):	#NV				
	#NV				
				*	see comment
	o natura	I fluctuations (e.g.	tidal effects	s) onl	У
no index calculated					
	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 before start of flowing: before stop of flowing period KLX01 1353.48 #NV before start of flowing: before start of flowing: nge during flowing period h respect to the response r _s ²/dt _L (m²/s): with respect to pumping flowing sp/Q _p (s/m²):	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 before start of flowing: before stop of flowing: nge during flowing period: KLX01 1353.48 #NV before start of flowing: before stop of flowing: nge during flowing period:* h respect to the response time r _s ²/dt _L (m²/s): #NV with respect to pumping flow rate s _p /Q _p (s/m²): #NV #NV	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 Nomenclature before start of flowing: before stop of flowing period: KLX01 KLX01 Section no.: Section length: max. Drawdown s #NV Nomenclature before start of flowing: p _p Momenclature before start of flowing: p _p Momenclature before start of flowing: before start of flowing: p _p Momenclature h respect to the response time r _s ²/dt _L (m²/s): #NV with respect to pumping flow rate s _p /Q _p (s/m²): #NV #NV no response due to pumping in source pressure changes due to natural fluctuations (e.g.	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 Nomenclature Pump Stop: Pump Sto	KLX07A Pumping Section [m bToC]: 28.10.2005 09:51 Test Stop: 28.10.2005 12:34 Pump Stop: 6.80E-04 Nomenclature Unit before start of flowing: before stop of flowing: nge during flowing period: KLX01 Section no.: Section length: 1353.48 max. Drawdown s _p [m]:* #NV Nomenclature Unit before start of flowing: p _i kPa #NV Nomenclature Unit before start of flowing: p _i kPa h respect to the response time r _s ²/dt _L (m²/s): #NV with respect to pumping flow rate s _p /Q _p (s/m²): #NV #NV no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



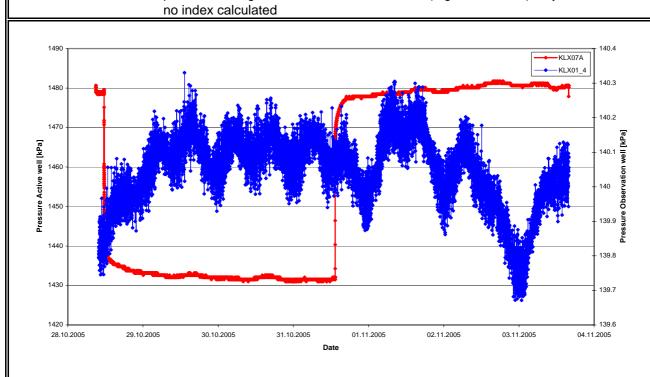
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section	[m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX01	Section no.:		KLX01_2
		Section length:		191.00-704.00
Distance r _s [m]:	1154.12	max. Drawdown	s _p [m]:*	0.08
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	53.1
Pressure in test section	before stop of flowing:	p_p	kPa	53.9
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	0.8
Normalized distance wit	th respect to the response t	ime		
Index 1	• •	#NV		
Normalized drawdown v	with respect to pumping flow	v rate		
Index 2		#NV		
	p p (
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	i	#NV		
				* see comment
Comment:	no response due to pump	•	4:- - - 4 44-\	. L .
	pressure changes due to no index calculated	natural nuctuations (e.g.	liuai ellecis) of	шу
	mack calculated			
1490 1			_	55.5



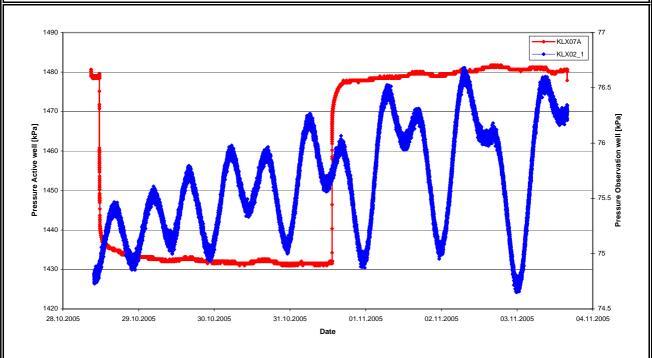
Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section	[m bToC]:		103.20-193.20
Test Start:	28.10.2005 09:51		Test Stop:			03.11.2005 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:			31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p _i		kPa	1478
Pressure in test section	before stop of flowing:		p_p		kPa	1432
Maximum pressure chai	nge during flowing period:		dp_p		kPa	46
Observation Hole:	KLX01		Section no.:			KLX01_3
			Section length:			171.00-190.00
Distance r _s [m]:	1089.38		max. Drawdown	s _p [m]:*		0.07
Response time dt_L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p _i		kPa	63.9
Pressure in test section	before stop of flowing:		p_p		kPa	64.6
Maximum pressure cha	nge during flowing period:	*	dp_p		kPa	0.7
Normalized distance wit	h respect to the response	time				
Index 1	r _s ² /dt _L (m ² /s):	#NV				
Normalized drawdown v	vith respect to pumping flo	ow rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:		#NV				* see comment
Comment:	no response due to pum	pina in :	source			JCC COMMINGRE
	pressure changes due to			tidal effect	s) on	ly
	no index calculated					



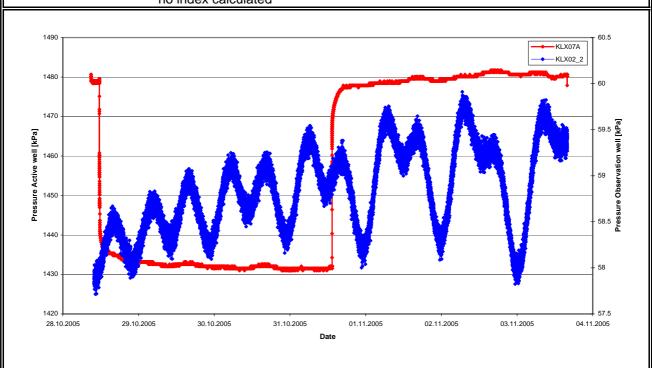
Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section	[m bToC]:		103.20-193.20
Test Start:	28.10.2005 09:51		Test Stop:		03.	11.2005 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:		31.	10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_{i}	k	кРа	1478
Pressure in test section	before stop of flowing:		p_p	k	кРа	1432
Maximum pressure cha	nge during flowing period	d :	dp_p	k	кРа	46
Observation Hole:	KLX01		Section no.:			KLX01_4
			Section length:			1.00-170.00
Distance r _s [m]:	1084.58		max. Drawdown s	_p [m]:*		0.02
Response time dt _L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p _i	k	кРа	139.8
Pressure in test section	before stop of flowing:		p_p	k	кРа	140.0
Maximum pressure cha	nge during flowing period	: :*	dp _p	k	кРа	0.2
Normalized distance wit	th respect to the response	e time				,
Index 1	r_s^2/dt_L (m ² /s):	#NV				
Normalized drawdown v	with respect to pumping f	low rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
(2) >*1(-1-) (-12)		#NIN#				
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:		#NV			* se	e comment
Comment:	no response due to pun	nping in	source			
	pressure changes due t	o natura	ıl fluctuations (e.g. t	tidal effects) only	
	na inday aalaulatad					



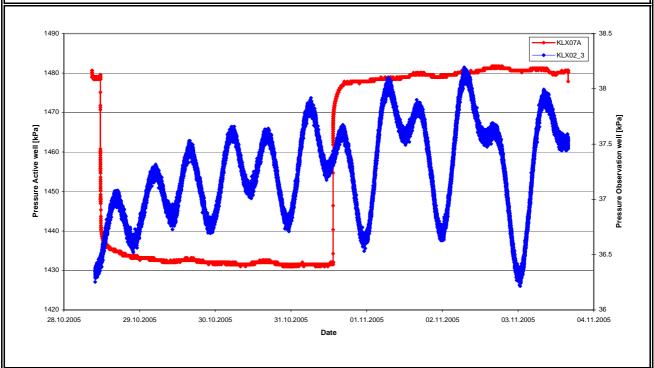
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	20-193.20
Flow Rate Q_p [m³/s]:6.80E-04Pressure dataNomenclatureUnitValuePressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period: dp_p kPa Observation Hole: $KLX02$ Section no.: Section length: max. Drawdown s_p [m]:*1165.00 max. Drawdown s_p [m]:*	005 15:53
Pressure data Nomenclature p_i kPa Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period: p_p kPa Maximum pressure change during flowing period: p_p	005 13:20
Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period: dp_p kPa Observation Hole: KLX02 Section no.: Section length: 1165.00 max. Drawdown s_p [m]:*	
Pressure in test section before stop of flowing: $p_{p} kPa$ Maximum pressure change during flowing period: $dp_{p} kPa$ Observation Hole: $KLX02 Section no.: \\ Section length: \\ Distance \ r_{s} \ [m]: \\ Response time \ dt_{L} \ [s]: \\ \#NV$	alue
	1478
$\begin{tabular}{cccccccccccccccccccccccccccccccccccc$	1432
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	46
Distance r_s [m]: 1328.68 max. Drawdown s_p [m]:* Response time dt_L [s]: #NV	KLX02_1
Distance r_s [m]: 1328.68 max. Drawdown s_p [m]:* Response time dt_L [s]: #NV	0-1700.00
	0.06
December 1104 M	
Pressure data Nomenclature Unit Va	alue
Pressure in test section before start of flowing: p _i kPa	74.8
Pressure in test section before stop of flowing: pp kPa	75.4
Maximum pressure change during flowing period:* dp _p kPa	0.6
Normalized distance with respect to the response time	
Index 1 r_s^2/dt_L (m²/s): #NV	
Normalized drawdown with respect to pumping flow rate	
Index 2 s_p/Q_p (s/m ²): #NV	
σρ α _ρ (σ ,-	
$(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV	
* see co	mment
Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated	_
no index calculated	



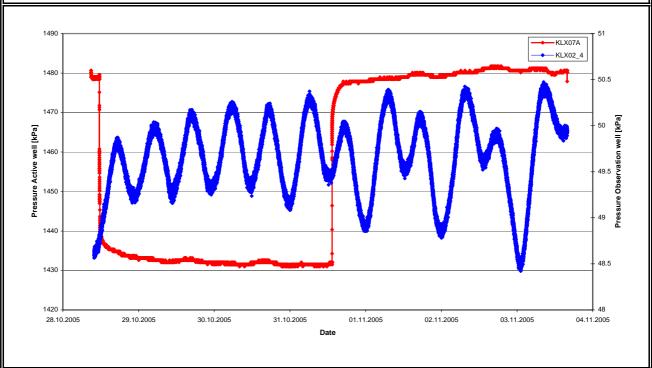
Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section [m bToC]:		103.20-193.20
Test Start:	28.10.2005 09:51		Test Stop:		0	3.11.2005 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:		3	1.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_i		kPa	1478
Pressure in test section	before stop of flowing:		p_p		kPa	1432
Maximum pressure cha	nge during flowing period:	:	dp_p		kPa	46
Observation Hole:	KLX02		Section no.:			KLX02_2
			Section length:		1	145.00-1164.00
Distance r _s [m]:	1051.43		max. Drawdown s	_ɔ [m]:*		0.06
Response time dt_L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p _i		kPa	58.0
Pressure in test section	before stop of flowing:		p_p		kPa	58.6
Maximum pressure cha	nge during flowing period:	*	dp_p		kPa	0.6
Normalized distance wi	th respect to the response	time				
Index 1	$r_s^2/dt_L (m^2/s)$:	#NV				
Normalized drawdown v	with respect to pumping flo	ow rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
$(s_p/Q_p)*In(r_s/r_0) (s/m^2):$		#NV				
					*	see comment
Comment:	no response due to pum					
	pressure changes due to	o natura	il fluctuations (e.g. t	idal effects	s) only	/
	no index calculated					



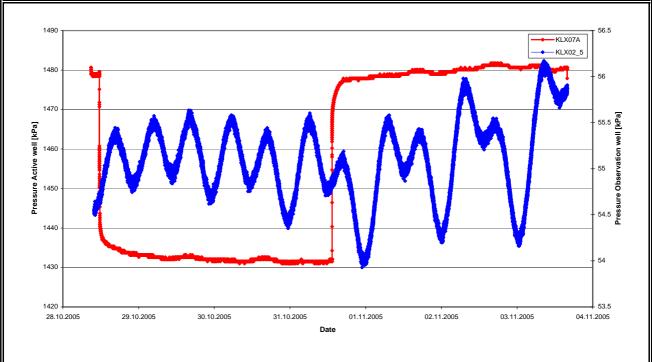
Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section	[m bToC]:		103.20-193.20
Test Start:	28.10.2005 09:51		Test Stop:			03.11.2005 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:			31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_{i}		kPa	1478
Pressure in test section	before stop of flowing:		p_p		kPa	1432
Maximum pressure char	nge during flowing period:		dp_p		kPa	46
Observation Hole:	KLX02		Section no.:			KLX02_3
			Section length:			718.00-1144.00
Distance r _s [m]:	829.28		max. Drawdown s	s _p [m]:*		0.07
Response time dt _L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_{i}		kPa	36.4
Pressure in test section	before stop of flowing:		p_p		kPa	37.1
Maximum pressure char	nge during flowing period:	*	dp_p		kPa	0.7
Normalized distance wit	h respect to the response	time				
Index 1	r_s^2/dt_L (m ² /s):	#NV				
Normalized drawdown w	vith respect to pumping flo	ow rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
$(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$:		#NV				* see comment
Comment:	no response due to pum	ping in	source			ooo oommont
	pressure changes due to			tidal effect	s) on	ly
	no index calculated					



AP PS 400-05-045					
KLX07A		Pumping Section	[m bToC]:		103.20-193.20
28.10.2005 09:51		Test Stop:			03.11.2005 15:53
28.10.2005 12:34		Pump Stop:			31.10.2005 13:20
6.80E-04					
		Nomenclature	Unit		Value
before start of flowing:		p_{i}		kPa	1478
before stop of flowing:		p_p		kPa	1432
nge during flowing period:		dp_p		kPa	46
KLX02		Section no.:			KLX02_4
		Section length:			495.00-717.00
508.63		max. Drawdown s	s _p [m]:*		0.08
#NV					
		Nomenclature	Unit		Value
before start of flowing:		p_{i}		kPa	48.7
before stop of flowing:		p_p		kPa	49.5
nge during flowing period:	*	dp_p		kPa	0.8
h respect to the response	time				
r_s^2/dt_L (m ² /s):	#NV				
vith respect to pumping flo	ow rate				
s_p/Q_p (s/m ²):	#NV				
	#NV				
					* see comment
pressure changes due to no index calculated	natura	I fluctuations (e.g.	tidal effect	s) on	ly
	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 before start of flowing: before stop of flowing: nge during flowing period: KLX02 508.63 #NV before start of flowing: before stop of flowing: nge during flowing period: h respect to the response r_s^2/dt_L (m²/s): with respect to pumping flowing sp/Qp (s/m²):	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 before start of flowing: before stop of flowing: nge during flowing period: KLX02 508.63 #NV before start of flowing: before stop of flowing: nge during flowing period:* h respect to the response time r _s ²/dt _L (m²/s): #NV with respect to pumping flow rate s _p /Q _p (s/m²): #NV #NV	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 Nomenclature before start of flowing: before stop of flowing period: KLX02 KLX02 Section no.: Section length: max. Drawdown s #NV Nomenclature before start of flowing: p _p Momenclature before start of flowing: p _p Momenclature hefore start of flowing: p _p Momenclature before start of flowing: p _p Momenclature hefore start of flowing: p _p Momenclature p _i Momenclature hefore start of flowing: p _p Momenclature hefore start of flow	KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04 Nomenclature Pump Stop:	KLX07A Pumping Section [m bToC]: 28.10.2005 09:51 Test Stop: 28.10.2005 12:34 Pump Stop: 6.80E-04 Nomenclature Unit before start of flowing: p _i kPa before stop of flowing: p _p kPa KLX02 Section no.: Section length: max. Drawdown s _p [m]:* #NV Nomenclature Unit before start of flowing: p _i kPa #NV Nomenclature Unit before start of flowing: p _i kPa #NV Nomenclature Unit before start of flowing: p _i kPa h respect to the response time r _s ²/dt _L (m²/s): #NV with respect to pumping flow rate s _p /Q _p (s/m²): #NV #NV no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) on



Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section	[m bToC]:		103.20-193.20
Test Start:	28.10.2005 09:51		Test Stop:			03.11.2005 15:53
Pump Start:	28.10.2005 12:34		Pump Stop:		;	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_i	1	kPa	1478
Pressure in test section	before stop of flowing:		p_p	1	kPa	1432
Maximum pressure cha	nge during flowing period	:	dp_p	I	kPa	46
Observation Hole:	KLX02		Section no.:			KLX02_5
			Section length:			452.00-494.00
Distance r _s [m]:	379.74		max. Drawdown	s _p [m]:*		0.02
Response time dt_L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_i	1	kPa	54.7
Pressure in test section	before stop of flowing:		p_p	1	kPa	54.9
Maximum pressure cha	nge during flowing period	.*	dp_p	I	kPa	0.2
Normalized distance wit	th respect to the response	e time				
Index 1	r _s ² /dt _L (m ² /s):	#NV				
Normalized drawdown v	vith respect to pumping flo	ow rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:		#NV			,	* see comment
Comment:	no response due to pum	npina in s	source			366 COMMENT
	pressure changes due to			tidal effects	s) on	ly
	no index calculated		(9-		,	•



Activityplan No.	AP PS 400-05-045			
	KLX07A	Dumning Coation (m hTaClı	103.20-193.20
Pumping Hole:	28.10.2005 09:51	Pumping Section [r		
Test Start: Pump Start:	28.10.2005 09:51	Test Stop: Pump Stop:		03.11.2005 15:53 31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04	rump Stop.	,	31.10.2003 13.20
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX02	Section no.:		KLX02_6
		Section length:		348.00-451.00
Distance r _s [m]:	310.17	max. Drawdown s _p	[m]:*	0.17
Response time dt_L [s]:	7891			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	56.4
Pressure in test section	before stop of flowing:	p_p	kPa	54.7
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	1.7
Normalized distance wit	th respect to the response time r_s^2/dt_L (m²/s):	e .19		
Normalized drawdown v	with respect to pumping flow ra s_p/Q_p (s/m ²): 254.			

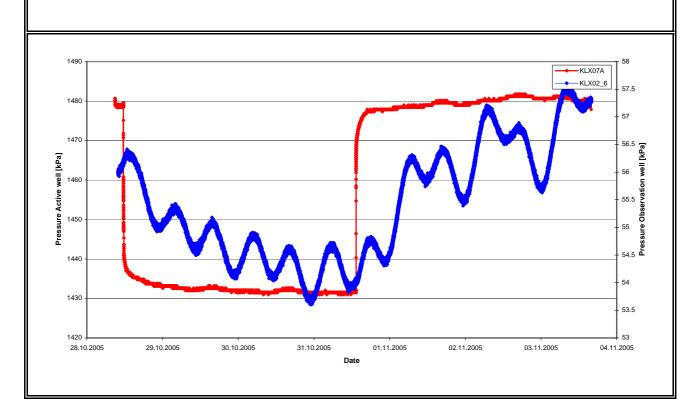
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

1462.06

* see comment

Comment: c

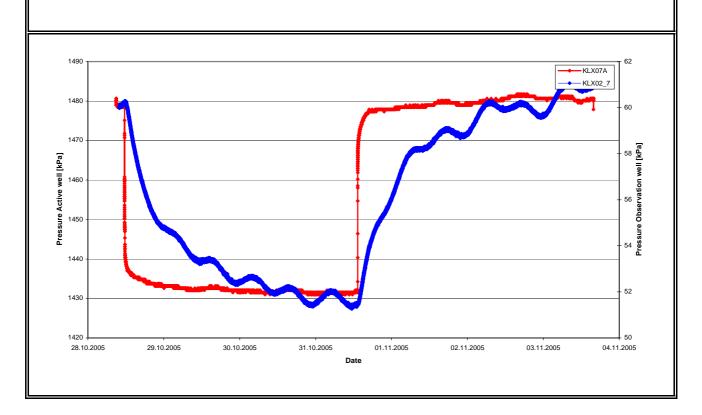
clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		3.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	3	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX02	Section no.:		KLX02_7
		Section length:		209.00-347.00
Distance r _s [m]:	202.22	max. Drawdown s _p	[m]:*	0.85
Response time dt_L [s]:	1731			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	60.2
Pressure in test section	before stop of flowing:	p_p	kPa	51.9
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	8.3
Normalized distance wit	th respect to the response time			
Index 1	$r_s^2/dt_L (m^2/s)$: 23.6			
Normalized drawdown y	with respect to pumping flow rat	re		
Index 2	s_p/Q_p (s/m ²): 1244.2			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2):$	6606.0	06		
(-pp/ (s-0/(/			*	

Comment:

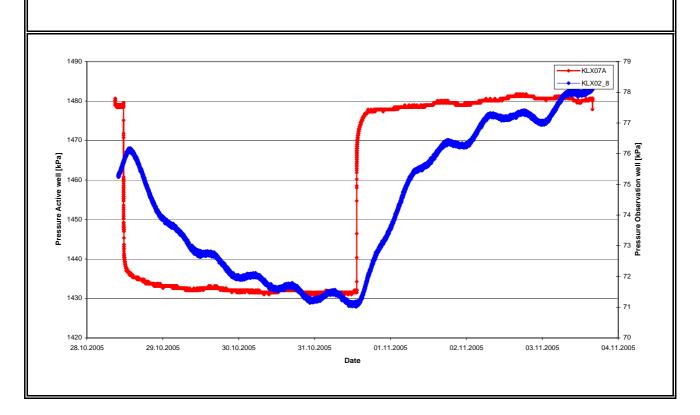
clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		3.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	3	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX02	Section no.:		KLX02_8
1		Section length:		202.95-208.00
Distance r _s [m]:	148.53	max. Drawdown s _p	[m]:*	0.43
Response time dt_L [s]:	8571			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	75.8
Pressure in test section	before stop of flowing:	p_p	kPa	71.6
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	4.2
Normalized distance wit	th respect to the response time	9		
Index 1	<u>, , , , , , , , , , , , , , , , , , , </u>	.57		
Normalized drawdown v	vith respect to pumping flow ra	ate		
Index 2	s_p/Q_p (s/m ²): 629.			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	3148.	.54		
(op up)(ig/ig/ig/ig/ii/)	51.13.		•	

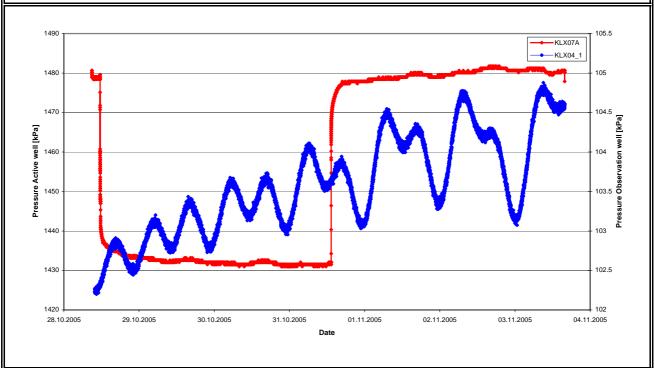
Comment:

clear response due to pumping in source

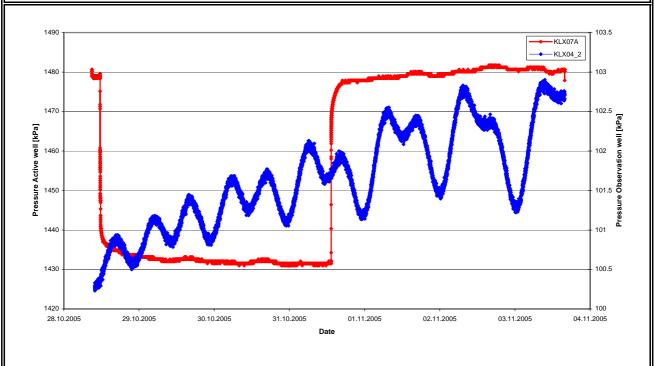


* see comment

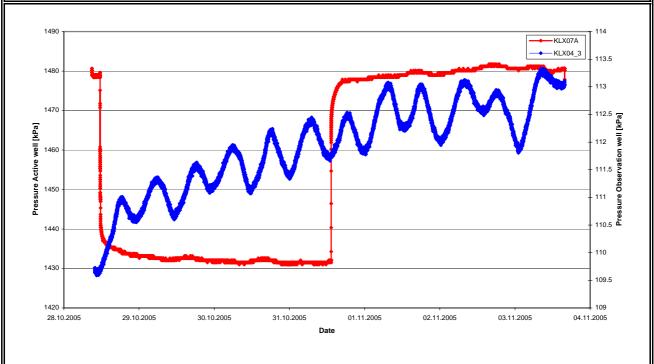
Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A		Pumping Section [r	m bToC]:	103.20-193.2
Test Start:	28.10.2005 09:51		Test Stop:		03.11.2005 15:5
Pump Start:	28.10.2005 12:34		Pump Stop:		31.10.2005 13:2
Flow Rate Q _p [m ³ /s]:	6.80E-04				
Pressure data			Nomenclature	Unit	Value
Pressure in test section	before start of flowing:		p_{i}	kl	Pa 147
Pressure in test section	before stop of flowing:		p_p	kl	Pa 143
Maximum pressure char	nge during flowing period:		dp_p	k	Pa 4
Observation Hole:	KLX04		Section no.:		KLX04_
			Section length:		898.00-1000.0
Distance r _s [m]:	1383.65		max. Drawdown s _p	, [m]:*	0.1
Response time dt _L [s]:	#NV			• •	
Pressure data			Nomenclature	Unit	Value
Pressure in test section	before start of flowing:		p _i	ki	Pa 102.
Pressure in test section	before stop of flowing:		p_p	k!	Pa 103.
Maximum pressure char	nge during flowing period:*		dp _p	kl	.Pa 1.
Normalized distance with	h respect to the response t	time			
Index 1		#NV			
	, ,				
	vith respect to pumping flov	w rate			
Index 2	s_p/Q_p (s/m ²):	#NV			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:		#NV			
$(S_p/Q_p)^{-111}(I_s/I_0)$ (S/III).	•	#IN V			* see comment
Comment:	no response due to pump	ing in	source		300 001111110111
	pressure changes due to			dal effects)) only
	no index calculated				
1490					——KLX07A 105.5
					— KLX04_1



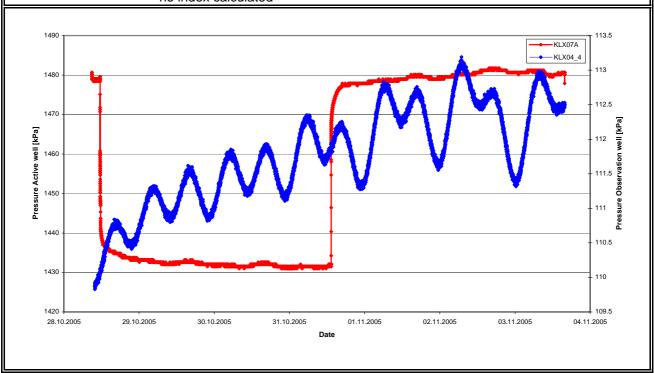
Activityplan No. Pumping Hole: Test Start: Pump Start: Flow Rate Q _p [m³/s]:	AP PS 400-05-045 KLX07A 28.10.2005 09:51 28.10.2005 12:34 6.80E-04	Pumping Section [r Test Stop: Pump Stop:	-	103.20-193.20
Test Start: Pump Start:	28.10.2005 09:51 28.10.2005 12:34	Test Stop:	-	103.20-193.20
Pump Start:	28.10.2005 12:34	•		
•		Dump Ston:		03.11.2005 15:53
Flow Rate Q _p [m ³ /s]:	6.80E-04	Fullip Stop.	:	31.10.2005 13:20
		_		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp _p	kPa	46
Observation Hole:	KLX04	Section no.:		KLX04_2
		Section length:		870.00-897.00
Distance r _s [m]:	1349.96	max. Drawdown s _p	[m]:*	0.13
Response time dt _L [s]:	#NV	,	-	
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	100.4
Pressure in test section	before stop of flowing:	p_p	kPa	101.7
	nge during flowing period:*	dp _p	kPa	1.3
Normalized distance with	h respect to the response time			
Index 1	r_s^2/dt_L (m ² /s): #NV			
Normalized drawdown w	vith respect to pumping flow rate	<u> </u>		
Index 2	s_p/Q_p (s/m ²): #NV	,		
	- φ, - φ (σ).			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV			
			-	* see comment
Comment:	no response due to pumping in		dal offooto) on	k.,
	pressure changes due to natura no index calculated	ai nuctuations (e.g. ti	dai enecis) on	ı y
	THO ITHOUGH CANCELLES			
1490				T 103.5
			-	—KLX07A — KLX04_2



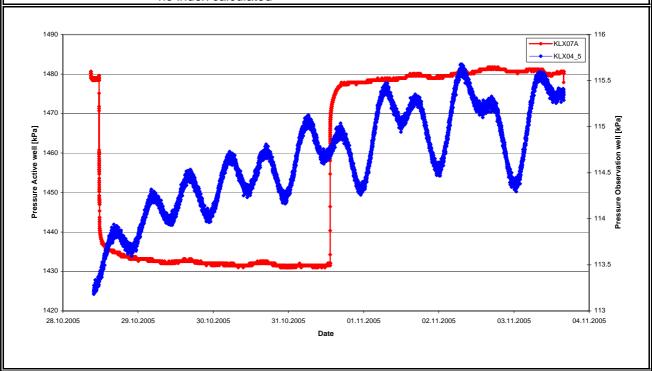
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	:	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX04	Section no.:		KLX04_3
		Section length:		686.00.869.00
Distance r _s [m]:	1299.40	max. Drawdown s _p	, [m]:*	0.20
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	109.7
Pressure in test section	before stop of flowing:	p_p	kPa	111.7
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	2.0
Normalized distance wit	th respect to the response time r_s^2/dt_L (m²/s): #N\			
Normalized drawdown v	with respect to pumping flow ra	ate		
Index 2	s_p/Q_p (s/m ²): #NV			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#N\	1		
O:	· · · · · · · · · · · · · · · · · · ·	** *******		* see comment
Comment:	no response due to pumping pressure changes due to nati no index calculated		dal effects) on	ly
1490				KLX07A 113.5
1480		Name and Address of the Owner, where		



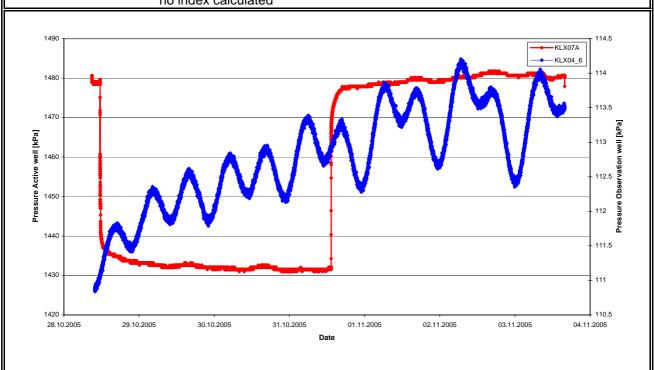
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	a 1478
Pressure in test section	before stop of flowing:	p_p	kPa	a 1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	a 46
Observation Hole:	KLX04	Section no.:		KLX04_4
		Section length:		531.00-685.00
Distance r _s [m]:	1229.53	max. Drawdown s _p	[m]:*	0.18
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 110.0
Pressure in test section	before stop of flowing:	p_p	kPa	a 111.8
Maximum pressure char	nge during flowing period:*	dp _p	kPa	a 1.8
Normalized distance wit	th respect to the response time			
Index 1	r_s^2/dt_L (m ² /s): #NV			
, , ,				
	with respect to pumping flow rate	;		
Index 2	s_p/Q_p (s/m ²): #NV			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#NV			
(Фрр)(-50) (/	.			* see comment
Comment:	no response due to pumping in			
	pressure changes due to natura no index calculated	al fluctuations (e.g. ti	dal effects) o	only
1490			_	→ KLX07A 113.5
			L	→ KLX04_4
1480				113



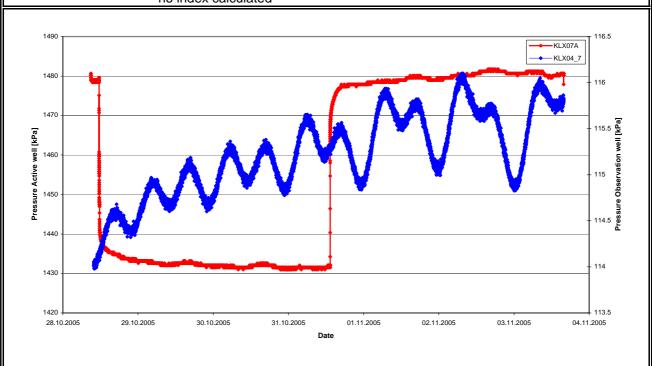
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section	[m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	;	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	ange during flowing period:	dp_p	kPa	46
Observation Hole:	KLX04	Section no.:		KLX04_5
		Section length:		507.00-530.00
Distance r _s [m]:	1199.37	max. Drawdown s	_p [m]:*	0.14
Response time dt _L [s]:	#NV		· 	
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	113.3
Pressure in test section	before stop of flowing:	p_p	kPa	114.7
Maximum pressure cha	ange during flowing period:*	dp_p	kPa	1.4
Normalized distance wi	ith respect to the response tin	ne		
Index 1	• • • •	NV		
Normalized drawdown	with respect to pumping flow	rate		
Index 2		NV		
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#1	NV	٠	* see comment
Comment:	no response due to pumpin	ng in source		
	pressure changes due to na no index calculated	atural fluctuations (e.g.	tidal effects) onl	ly
1490				116
				-KLX07A



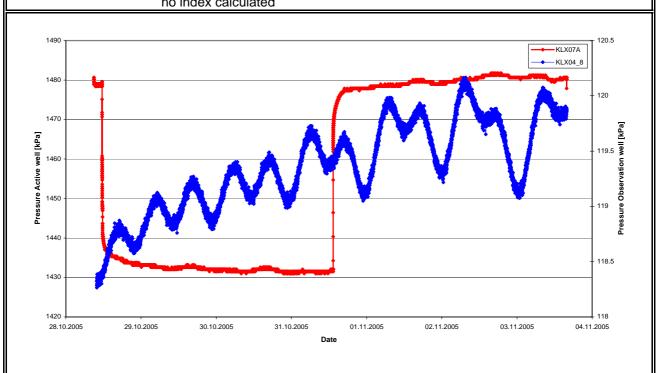
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
Test Start: 28.10.2005 09:51 Pump Start: 28.10.2005 12:34 Pump Start: 28.10.2005 12:34 Pump Start: 28.10.2005 12:34 Pump Stop: 31.10.2 Pump Stop:	20-193.20
Pressure data Pressure in test section before start of flowing: Pressure in test section before stop of flowing: Pressure change during flowing period: Pressure in test section before stop of flowing: Pressure data Pressure data Nomenclature Pressure in test section before start of flowing: Pressure in test section before start of flowing: Pressure in test section before stop of flowing: Pressure in test section before store intention. Pressure in test section before start of flowing: Pressure data Nomenclature Viation 1. **Section no.: Section no.: Secti	005 15:53
Pressure data Nomenclature Pressure in test section before start of flowing: Pressure in test section before stop of flowing: Pressure in test section before stop of flowing: Pressure change during flowing period: Observation Hole: KLX04 Section no.: Section length: Section length: Maximum pressure change during flowing: Pressure data Nomenclature Pressure in test section before start of flowing: Pressure in test section before stop of flowing: Pressure in test section before store of flowing: Pressure in test section before start of flowing: Pressur	005 13:20
Pressure in test section before start of flowing: Pressure in test section before stop of flowing: Pressure in test section before stop of flowing: Pressure in test section before stop of flowing: Pressure change during flowing period: Nomenclature Nomencl	
Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period: dp_p kPa Observation Hole: KLX04 Section no.: Section length: p_p max. Drawdown p_p max. Dra	alue
Maximum pressure change during flowing period: dp_p kPa Observation Hole: $KLX04$ Section no.: Section length: 231.4 Distance r_s [m]: 1160.65 max. Drawdown s_p [m]:* Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV $s_p/Q_p)*In(r_s/r_0)$ (s/m^2): #NV * see continuous and the section no.: Section no.	1478
Observation Hole: KLX04 Section no.: Section length: max. Drawdown s_p [m]:* 231.4 Distance r_s [m]: 1160.65 max. Drawdown s_p [m]:* Response time dt_L [s]: #NV Pressure data Nomenclature Unit Via Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time Index 1 r_s^2 /dt_L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV (s_p/Q_p)*In(r_s/r_0) (s/m²): #NV	1432
Distance r_s [m]: 1160.65 max. Drawdown s_p [m]:* Pressure data Nomenclature Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period:* Normalized distance with respect to the response time Index 1 r_s^2 /dt _L (m^2 /s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV s_p/Q_p *In(r_s/r_0) (s/m²): #NV * see continuous distance with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV	46
Distance r_s [m]: 1160.65 max. Drawdown s_p [m]:* Response time dt_L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV $(s_p/Q_p)*In(r_s/r_0)$ (s/m^2): #NV	KLX04_6
Response time dt_L [s]: #NV Pressure data Nomenclature Unit Value Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV $(s_p/Q_p)*In(r_s/r_0)$ (s/m^2): #NV	00-506.00
Pressure data Nomenclature Pressure in test section before start of flowing: Pressure in test section before stop of flowing: Pressure in test section before stop of flowing: Maximum pressure change during flowing period:* Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): m^2/Q_p *NV * see contact.	0.18
Pressure in test section before start of flowing: p_i kPa Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV s_p/Q_p *In(r_s/r_0) (s/m^2): #NV	
Pressure in test section before stop of flowing: p_p kPa Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV $(s_p/Q_p)*In(r_s/r_0)$ (s/m²): #NV * see co	alue
Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time $lndex\ 1$ $r_s^2/dt_L\ (m^2/s)$: #NV Normalized drawdown with respect to pumping flow rate $lndex\ 2$ $s_p/Q_p\ (s/m^2)$: #NV $(s_p/Q_p)^*ln(r_s/r_0)\ (s/m^2)$: #NV * see continuous change during flowing period:* **NV	111.0
Maximum pressure change during flowing period:* dp_p kPa Normalized distance with respect to the response time Index 1 r_s^2/dt_L (m^2/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m^2): #NV $(s_p/Q_p)^*In(r_s/r_0)$ (s/m^2): #NV * see co	112.8
Index 1 r_s^2/dt_L (m²/s): #NV Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV $(s_p/Q_p)*In(r_s/r_0)$ (s/m²): #NV * see co	1.8
Index 2 s_p/Q_p (s/m²): #NV $ (s_p/Q_p)*In(r_s/r_0) (s/m^2): $	
Index 2 s_p/Q_p (s/m²): #NV $ (s_p/Q_p)*In(r_s/r_0) (s/m^2): $	
* see co	
Comment: no response due to pumping in source	mment
pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated	
1490 KLX07A	114.5
——KLX04_6	- 114



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:		03.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	3	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX04	Section no.:		KLX04_7
		Section length:		163.00-230.00
Distance r _s [m]:	1135.17	max. Drawdown s _p	[m]:*	0.11
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	114.1
Pressure in test section	before stop of flowing:	p_p	kPa	115.2
Maximum pressure char	nge during flowing period:*	dp_p	kPa	1.1
Normalized distance wit	h respect to the response ti	ime		
Index 1	<u> </u>	ŧNV		
Normalized drawdown w	vith respect to pumping flow	v rate		
Index 2		ŧNV		
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#	ŧNV		
(-рр)(-şр) ()-			*	see comment
Comment:	no response due to pumpi			
	pressure changes due to r no index calculated	natural fluctuations (e.g. ti	dal effects) onl	У



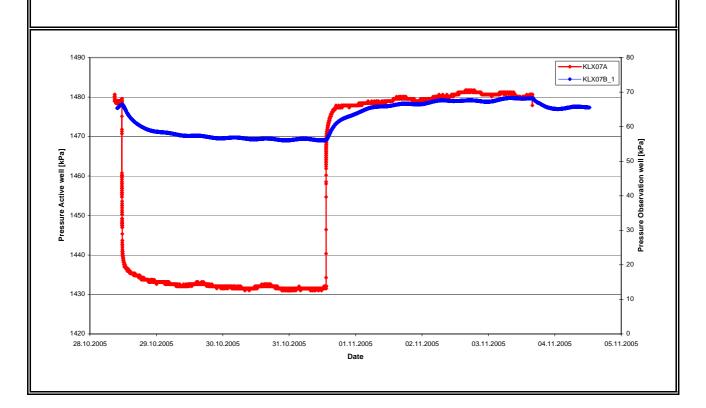
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section	[m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:	[11, 2.33].	03.11.2005 15:5
Pump Start:	28.10.2005 12:34	Pump Stop:		31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX04	Section no.:		KLX04_8
		Section length:		12.24-162.00
Distance r _s [m]:	1130.90	max. Drawdown s	s _p [m]:*	0.09
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	118.4
Pressure in test section	before stop of flowing:	p_p	kPa	119.3
Maximum pressure char	nge during flowing period:*	dp_p	kPa	0.0
Normalized distance wit	h respect to the response ti	me		
Index 1	r_s^2/dt_L (m ² /s): #	NV		
Normalized drawdown w	vith respect to pumping flow	rate		
Index 2		NV		
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	#	NV		
P P				* see comment
Comment:	no response due to pumpir			
	pressure changes due to no index calculated	atural fluctuations (e.g.	tidal effects) o	nly
1490				120.5



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:	(3.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	3	31.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure char	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX07	Section no.:		KLX07B_1
		Section length:		112.00-200.00
Distance r _s [m]:	83.50	max. Drawdown s _p	[m]:*	1.03
Response time dt_L [s]:	328			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	66.5
Pressure in test section	before stop of flowing:	p_p	kPa	56.4
Maximum pressure char	nge during flowing period:*	dp_p	kPa	10.1
Normalized distance wit	h respect to the response time)		
Index 1	$r_s^2/dt_L (m^2/s)$: 21.	26		
Normalized drawdown w	vith respect to pumping flow ra	ite		
Index 2	s_p/Q_p (s/m ²): 1514.			
$(s_p/Q_p)^*In(r_s/r_0)$ (s/m ²):	6699.	49		

Comment:

clear response due to pumping in source



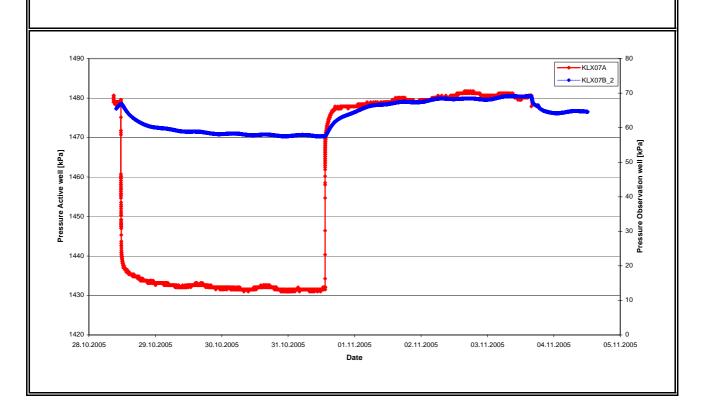
* see comment

Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	103.20-193.20
Test Start:	28.10.2005 09:51	Test Stop:	0	3.11.2005 15:53
Pump Start:	28.10.2005 12:34	Pump Stop:	3	1.10.2005 13:20
Flow Rate Q _p [m ³ /s]:	6.80E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	1478
Pressure in test section	before stop of flowing:	p_p	kPa	1432
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46
Observation Hole:	KLX07	Section no.:		KLX07B_2
		Section length:		49.00-111.00
Distance r _s [m]:	92.93	max. Drawdown s _p	, [m]:*	0.93
Response time dt_L [s]:	623			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_i	kPa	66.9
Pressure in test section	before stop of flowing:	p_p	kPa	57.8
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	9.1
Normalized distance wit	th respect to the response time r_s^2/dt_L (m²/s): 13.6			
Normalized drawdown v	with respect to pumping flow rate s_p/Q_p (s/m ²): 1364.			
$(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:	6182.1	14		see comment

Comment:

clear response due to pumping in source

* see comment



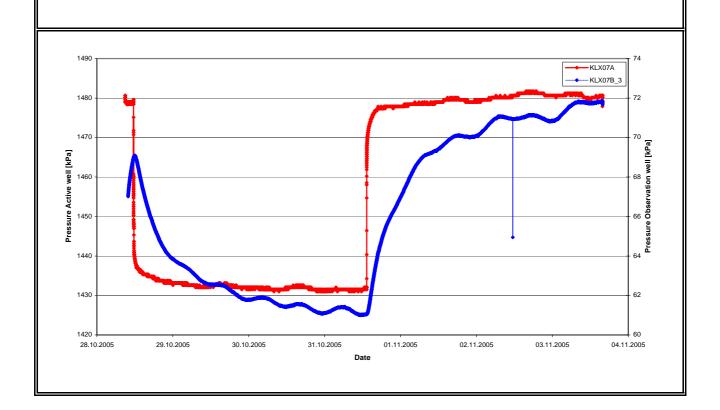
Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	103.20-193.20	
Test Start:	28.10.2005 09:51	Test Stop:	0	3.11.2005 15:53	
Pump Start:	28.10.2005 12:34	Pump Stop:	3	31.10.2005 13:20	
Flow Rate Q _p [m ³ /s]:	6.80E-04				
Pressure data		Nomenclature	Unit	Value	
Pressure in test section	before start of flowing:	p_i	kPa	1478	
Pressure in test section	before stop of flowing:	p_p	kPa	1432	
Maximum pressure cha	nge during flowing period:	dp_p	kPa	46	
Observation Hole:	KLX07	Section no.:		KLX07B_3	
		Section length:		0.00-48.00	
Distance r _s [m]:	131.35	max. Drawdown s _p	[m]:*	0.82	
Response time dt_L [s]:	2050				
Pressure data		Nomenclature	Unit	Value	
Pressure in test section	before start of flowing:	p _i	kPa	69.0	
Pressure in test section	before stop of flowing:	p_p	kPa	61.0	
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	8.0	
Normalized distance wit	Normalized distance with respect to the response time				
Index 1	<u> </u>	42			
Normalized drawdown v	Normalized drawdown with respect to pumping flow rate				
Index 2	s_p/Q_p (s/m ²): 1199.				
-	- μ · μ ()-	-			

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

5849.81

Comment: clear

* see comment clear response due to pumping in source



Borehole: KLX07A

APPENDIX 6-2

Index calculation
KLX07A Section 193.00-313.00 m pumped

Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX01	Section no.:	HLX01_1
		Section length:	16.00-100.63
Distance r _s [m]:	815.97	max. Drawdown s _p [m]:*	0.05
Response time dt _i [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	62.5
Pressure in test section before stop of flowing:	p_p	kPa	63.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

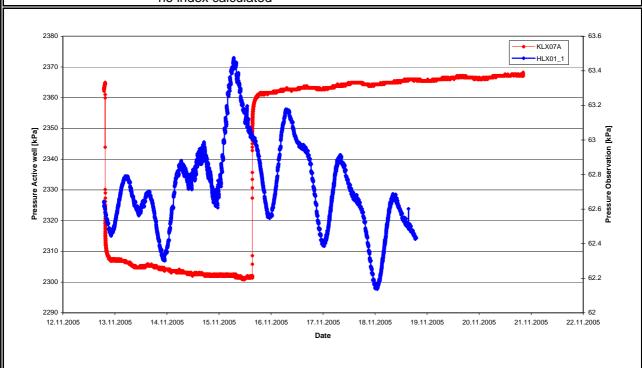
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Pressure in test section	before start of flowing:	$p_{\scriptscriptstyle \mathrm{i}}$	kl	Pa 2	2361
Pressure data		Nomenclature	Unit	Value	
Flow Rate Q _p [m ³ /s]:	6.07E-04				
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2005 1	5:24
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2005 2	0:17
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	193.00-31	3.00
Activityplan No.	AP PS 400-05-045				

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX02	Section no.:	HLX02_1
		Section length:	0.60-132.00
Distance r _s [m]:	1680.05	max. Drawdown s _p [m]:*	0.07
Response time dt, [s]:	#NV		

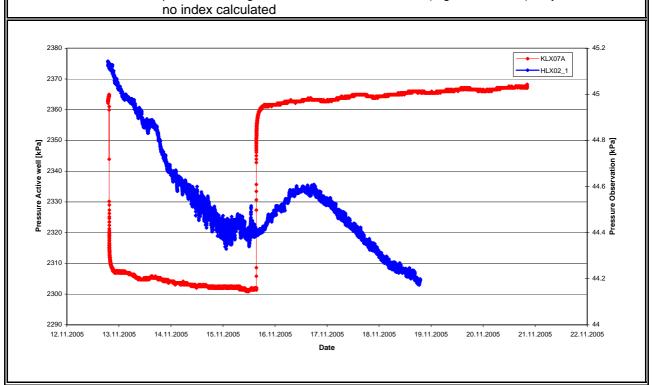
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	45.1
Pressure in test section before stop of flowing:	p_p	kPa	44.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.7

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		_	
Pumping Hole:	KLX07A	Pumping Section [r	m bToCl:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	2361
Pressure in test section before stop of flowing:		p_p	kPa	2301
Maximum pressure cha	ange during flowing period:	dp _p	kPa	60
Observation Hole:	HLX06	Section no.:		HLX06_1
		Section length:		1.00-100.00
Distance r _s [m]:	788.33	max. Drawdown s _p	[m]:*	0.06
Response time dt _L [s]:	#NV	'		
Pressure data		Nomenclature	Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	78.5
Pressure in test section before stop of flowing:	p_p	kPa	79.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.6

Normalized drawdown with respect to pumping flow rate

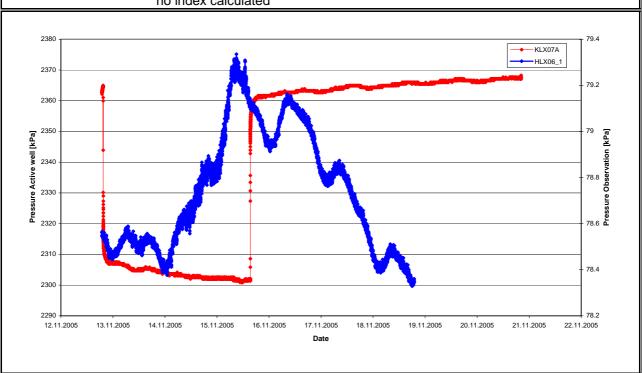
 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \text{$\#NV$}$

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

* see comment



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
	_		_

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX07	Section no.:	HLX07_1
		Section length:	16.00-100.00
Distance r _s [m]:	995.41	max. Drawdown s _p [m]:*	0.02
Response time dt, [s]:	#NV		

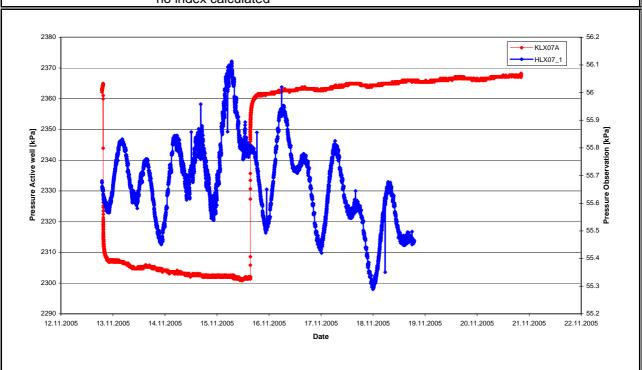
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	55.6
Pressure in test section before stop of flowing:	p_p	kPa	55.8 0.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX10	Section no.:	HLX10_1
		Section length:	3.00-85.00
Distance r _s [m]:	144.23	max. Drawdown s _p [m]:*	0.77
Response time dt _L [s]:	186		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	45.7
Pressure in test section before stop of flowing:	p_p	kPa	38.1
Maximum pressure change during flowing period:*	dp_p	kPa	7.6

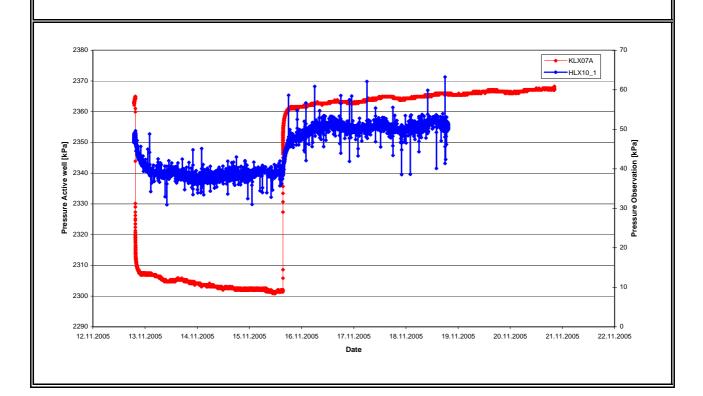
* see comment

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 111.84

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 1276.31

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 6345.06

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX11	Section no.:	HLX11_1
		Section length:	17.00-70.00
Distance r _s [m]:	209.12	max. Drawdown s _p [m]:*	0.84
Response time dt _i [s]:	931		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	62.0
Pressure in test section before stop of flowing:	p_p	kPa	53.8
Maximum pressure change during flowing period:*	dp_p	kPa	8.2

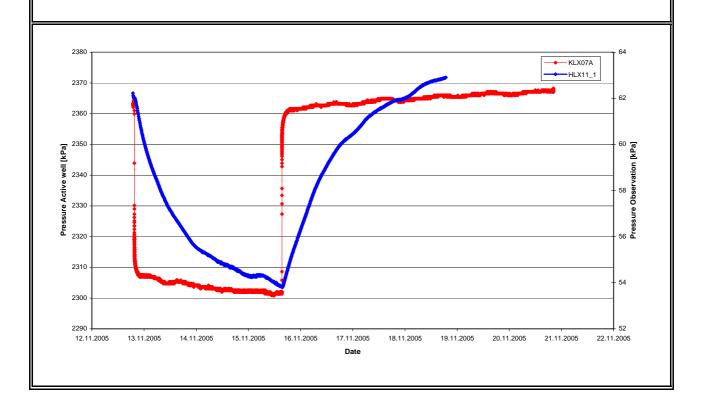
* see comment

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 46.97

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 1377.07

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 7357.54

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX11	Section no.:	HLX11_2
		Section length:	6.00-16.00
Distance r _s [m]:	225.27	max. Drawdown s _p [m]:*	0.88
Response time dt. [s]:	3332		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	61.6
Pressure in test section before stop of flowing:	p_p	kPa	53.0
Maximum pressure change during flowing period:*	dp_p	kPa	8.6

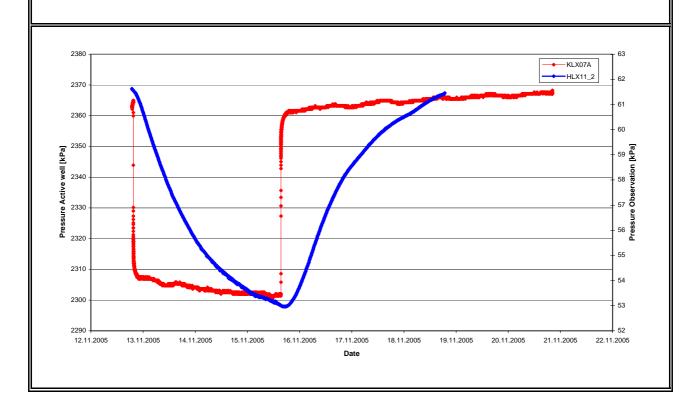
* see comment

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 15.23

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 1444.24

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 7823.89

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	2361
Pressure in test section before stop of flowing:		p_p	kPa	2301
Maximum pressure char	nge during flowing period:	dp_p	kPa	60
Observation Hole:	HLX13	Section no.:		HLX13_1
		Section length:		11.87-200.02
Distance r _s [m]:	1576.00	max. Drawdown s _p	[m]:*	0.08
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	120.7
Pressure in test section before stop of flowing:		p_p	kPa	121.5

Maximum pressure change during flowing period:*

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

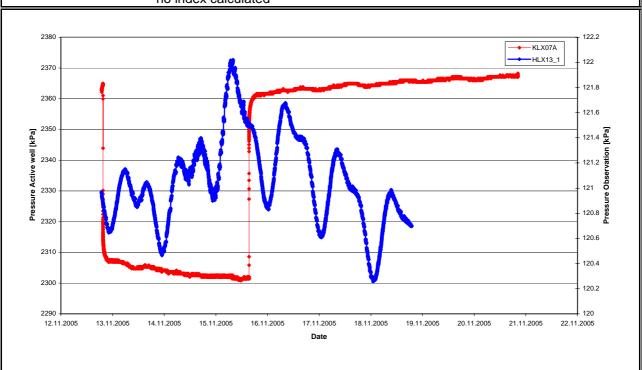
8.0

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

 dp_p

kPa



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	2361
Pressure in test section	Pressure in test section before stop of flowing:		kPa	2301
Maximum pressure cha	nge during flowing period:	dp_p	kPa	60
Observation Hole:	HLX14	Section no.:		HLX14_1
		Section length:		11.00-115.90
Distance r _s [m]:	1580.94	max. Drawdown s _p	[m]:*	0.08
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	117.3
Pressure in test section	before stop of flowing:	p_p	kPa	118.1
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	0.8
Normalized response tir	me with respect to the distance	9		
Index 1	$r_s^2/dt_L (m^2/s)$: #NV			
Normalized drawdown	with respect to pumping flow ra	ata		
	with respect to pumping now re	110		

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

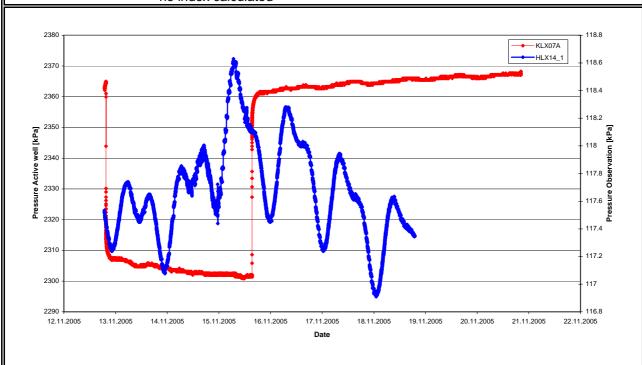
Index 2

 s_p/Q_p (s/m²):

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

#NV



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
			·

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX21	Section no.:	HLX21_1
		Section length:	81.00-150.00
Distance r _s [m]:	423.78	max. Drawdown s _p [m]:*	0.20
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	52.4
Pressure in test section before stop of flowing:	p_p	kPa	50.4
Maximum pressure change during flowing period:*	dp_p	kPa	2.0

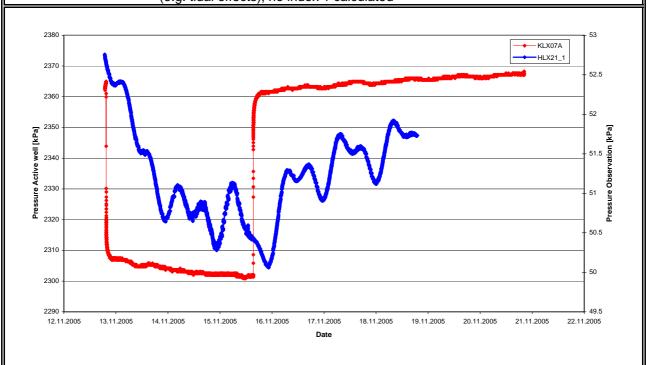
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 335.87

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 2031.75

* see comment

Comment: response due to pumping in source pressure changes influenced additionally by natural fluctuations

(e.g. tidal effects); no index 1 calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
_			

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX21	Section no.:	HLX21_2
		Section length:	9.10-80.00
Distance r _s [m]:	427.20	max. Drawdown s _p [m]:*	0.20
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	51.2
Pressure in test section before stop of flowing:	p_p	kPa	49.2
Maximum pressure change during flowing period:*	dp_p	kPa	2.0

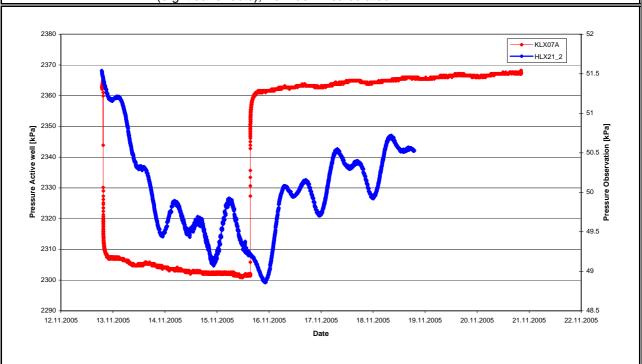
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 335.87

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 2034.46

* see comment

Comment: response due to pumping in source pressure changes influenced additionally by natural fluctuations

(e.g. tidal effects); no index 1 calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX22	Section no.:	HLX22_1
		Section length:	86.00-163.20
Distance r _s [m]:	456.00	max. Drawdown s _p [m]:*	0.22
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	51.2
Pressure in test section before stop of flowing:	p_p	kPa	49.0
Maximum pressure change during flowing period:*	dp_p	kPa	2.2

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 369.46

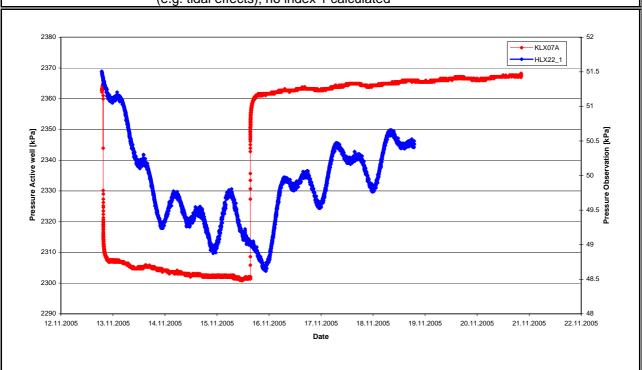
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 2262.00

* see comment

Comment: response due to pumping in source

pressure changes influenced additionally by natural fluctuations

(e.g. tidal effects); no index 1 calculated



Duegovino dete		Name and time	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX22	Section no.:	HLX22_2
		Section length:	9.19-85.00
Distance r _s [m]:	469.00	max. Drawdown s _p [m]:*	0.10
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	38.2
Pressure in test section before stop of flowing:	p_p	kPa	37.2
Maximum pressure change during flowing period:*	dp_p	kPa	1.0

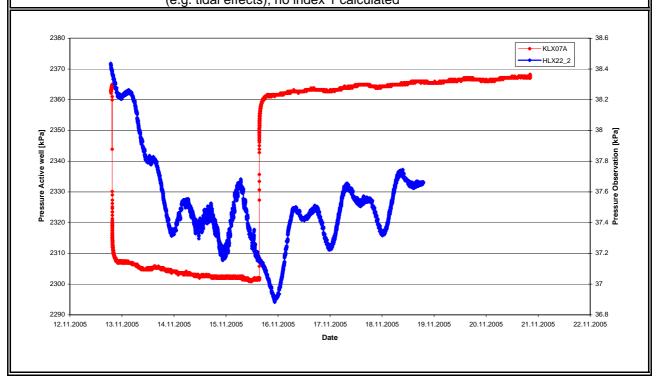
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 167.94

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 1032.90

* see comment

Comment: response due to pumping in source

pressure changes influenced additionally by natural fluctuations (e.g. tidal effects); no index 1 calculated



Test Start: 12.11.2005 18:54 Test Stop: 20.11.2005 20: Pump Start: 12:11.2005 19:32 Pump Stop: 15.11.2005 15:2	Activityplan No.	AP PS 400-05-045		
Pump Start: 12:11.2005 19:32 Pump Stop: 15.11.2005 15:2	Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
	Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Flow Rate Q_p [m ³ /s]: 6.07E-04		12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
	Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX23	Section no.:	HLX23_1
		Section length:	61.00-160.20
Distance r _s [m]:	375.47	max. Drawdown s _p [m]:*	0.04
Response time dt _L [s]:	#NV		

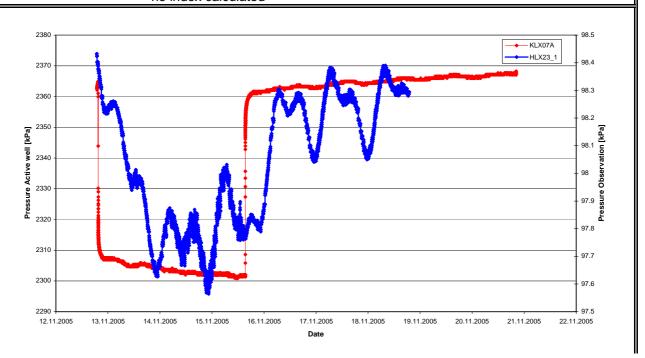
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	98.2
Pressure in test section before stop of flowing:	p_p	kPa	97.8
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: response due to pumping in source (analysis performed) no response according to SKB MD 330.003 ($s_p < 0.1 \text{ m}$) no index calculated



Dragovino dete		Name and time	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX23	Section no.:	HLX23_2
		Section length:	6.10-60.00
Distance r _s [m]:	379.29	max. Drawdown s _p [m]:*	0.08
Response time dt. [s]:	#NV		

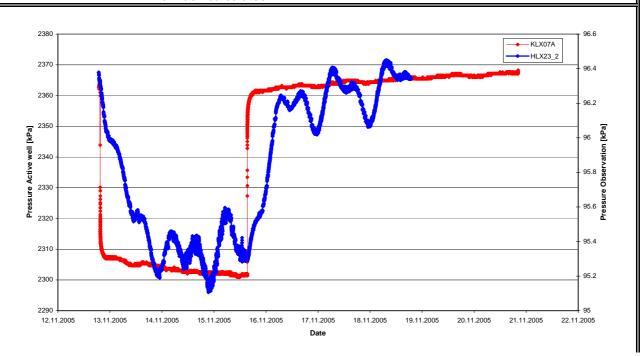
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	96.1
Pressure in test section before stop of flowing:	p_p	kPa	95.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.8

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: response due to pumping in source (analysis performed) no response according to SKB MD 330.003 ($s_p < 0.1 \text{ m}$) no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX24	Section no.:	HLX24_1
		Section length:	41.00-175.20
Distance r _s [m]:	378.97	max. Drawdown s _p [m]:*	0.05
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	98.4
Pressure in test section before stop of flowing:	p_p	kPa	97.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

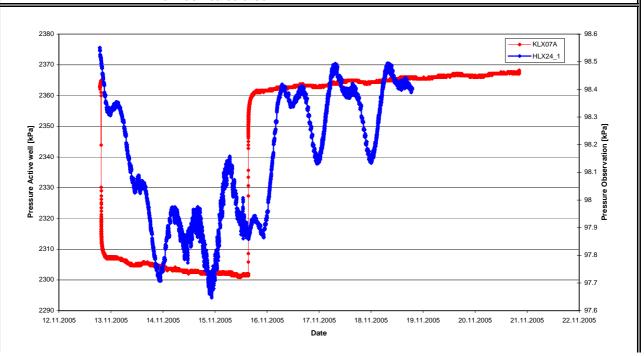
Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

Comment: response due to pumping in source (analysis performed)

no response according to SKB MD 330.003 ($s_p < 0.1 \text{ m}$)

* see comment



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
			·

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX24	Section no.:	HLX24_2
		Section length:	9.10-40.00
Distance r _s [m]:	418.25	max. Drawdown s _p [m]:*	0.00
Response time dt _i [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	100.1
Pressure in test section before stop of flowing:	p_p	kPa	100.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Normalized drawdown with respect to pumping flow rate

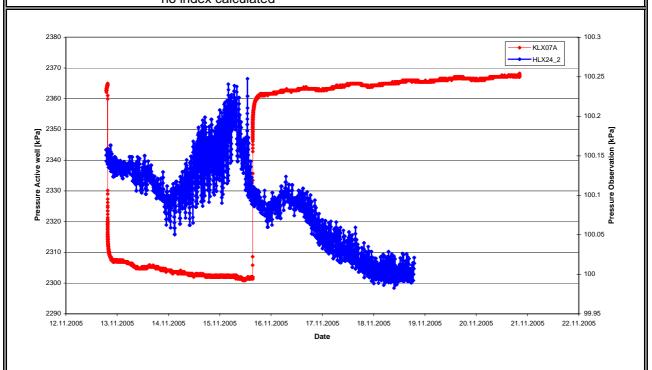
 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tida

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045				-
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	193.0	00-313.00
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2	005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2	005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04				
Pressure data		Nomenclature	Unit	Va	alue
Pressure in test section	before start of flowing:	p_{i}	k	Pa	2361
Pressure in test section	before stop of flowing:	p_p	k	Pa	2301
Maximum pressure cha	nge during flowing period:	dp_p	k	Pa	60

Observation Hole:	HLX25	Section no.:	HLX25_1
		Section length:	61.00-202.50
Distance r _s [m]:	1456.14	max. Drawdown s _p [m]:*	0.06
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	111.5
Pressure in test section before stop of flowing:	p_p	kPa	112.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.6

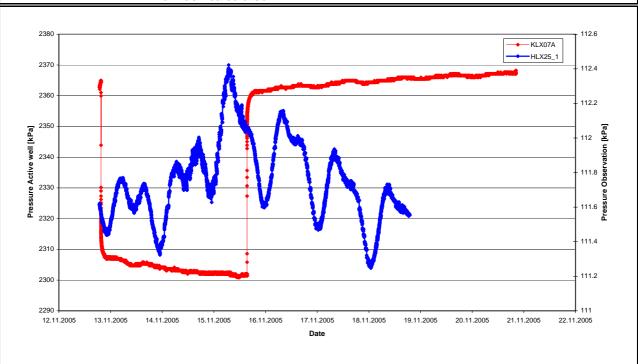
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_{i}	kPa	2361
Pressure in test section	n before stop of flowing:	p_p	kPa	2301
Maximum pressure cha	ange during flowing period:	dp_p	kPa	60
Observation Hole:	HLX25	Section no.:		HLX25_2
		Section length:		6.12-60.00
Distance r _s [m]:	1462.60	max. Drawdown s _p	[m]:*	0.06
Response time dt _L [s]:	#NV			

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	111.6
Pressure in test section before stop of flowing:	p_p	kPa	112.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.6

Normalized drawdown with respect to pumping flow rate

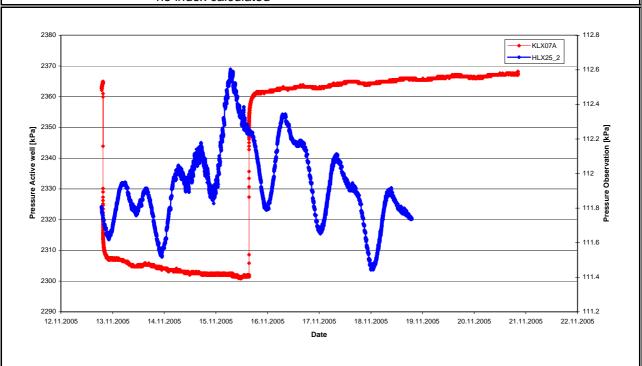
 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

* see comment



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX30	Section no.:	HLX30_1
		Section length:	101.00-163.40
Distance r _s [m]:	1162.90	max. Drawdown s _p [m]:*	0.05
Response time dt _L [s]:	#NV		

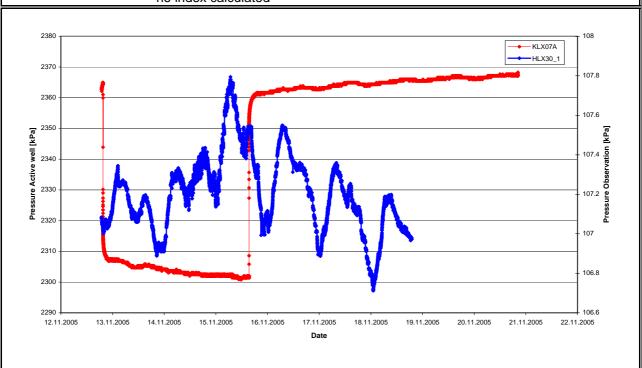
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	107.0
Pressure in test section before stop of flowing:	p_p	kPa	107.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Pressure data		Nomenclature	Unit	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04			
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m l	bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045			

Pressure in test section before stop of flowing: p _p kPa 2	Pressure data	Nomenclature	Unit	Value
	Pressure in test section before start of flowing:	p_{i}	kPa	2361
Maximum pressure change during flowing period: dp kPa	Pressure in test section before stop of flowing:	p_p	kPa	2301
waximam pressure sharing newling period.	Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX30	Section no.:	HLX30_2
		Section length:	9.10-100.00
Distance r _s [m]:	1184.40	max. Drawdown s _p [m]:*	0.04
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	106.6
Pressure in test section before stop of flowing:	p_p	kPa	107.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

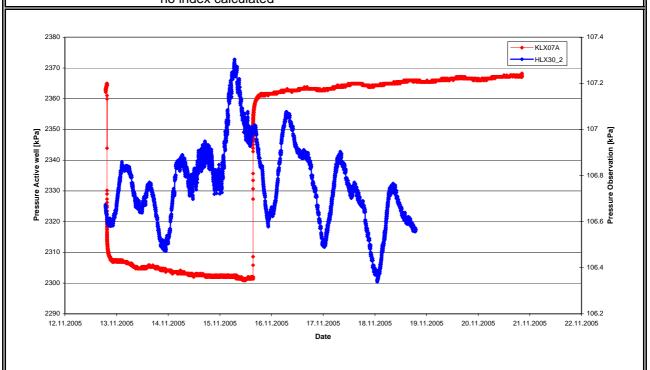
Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g., t

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Flow Rate Q _p [m ³ /s]:	6.07E-04	i ump otop.	10.11.2000 13.24
Test Start: Pump Start:	12.11.2005 18:54 12:11.2005 19:32	Test Stop: Pump Stop:	20.11.2005 20:17 15.11.2005 15:24
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX31	Section no.:	HLX31_1
		Section length:	9.10-133.20
Distance r _s [m]:	1118.76	max. Drawdown s _p [m]:*	0.05
Response time dt_L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	107.1
Pressure in test section before stop of flowing:	p_p	kPa	107.6
Maximum pressure change during flowing period:*	dp_{p}	kPa	0.5

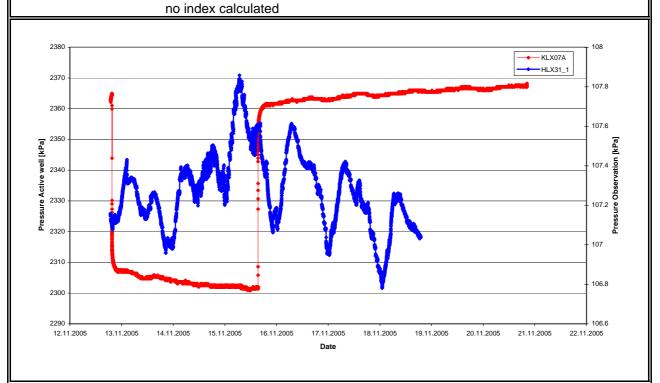
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX33	Section no.:	HLX33_1
		Section length:	31.00-202.10
Distance r _s [m]:	635.36	max. Drawdown s _p [m]:*	0.00
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	100.5
Pressure in test section before stop of flowing:	p_p	kPa	100.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \text{$\#NV$}$

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A HLX33_1 2370 100.8 2360 2350 Pressure Active well [kPa] 2330 2320 2310 100 2300 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005 17.11.2005 18.11.2005 19.11.2005 20.11.2005 21.11.2005 22.11.2005 Date

Pump Start: Flow Rate Q _p [m ³ /s]: Pressure data	12:11.2005 19:32 6.07E-04	Pump Stop: Nomenclature Unit	15.11.2005 15:24 t Value
Pump Start:		Pump Stop:	15.11.2005 15:24
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
rest Start.			
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]: 193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data		Nomenclature	Unit	Value
Pressure in test section before	e start of flowing:	p_{i}	kPa	2361
Pressure in test section before	e stop of flowing:	p_p	kPa	2301
Maximum pressure change du	ıring flowing period:	dp_p	kPa	60
Observation Hole:	⊔I V22	Section no :		⊔I ∨22 2

Observation Hole:	HLX33	Section no.:	HLX33_2
		Section length:	9.10-30.00
Distance r _s [m]:	695.59	max. Drawdown s _p [m]:*	0.00
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	100.3
Pressure in test section before stop of flowing:	p_p	kPa	100.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

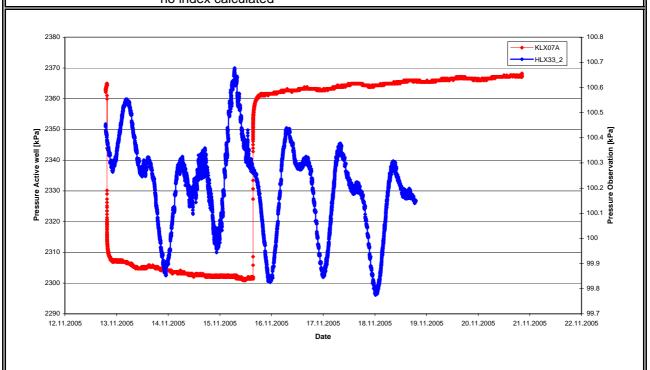
Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effective)

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX34	Section no.:	HLX34_1
		Section length:	9.00-151.80
Distance r _s [m]:	1825.88	max. Drawdown s _p [m]:*	0.10
Response time dt ₁ [s]:	#NV		

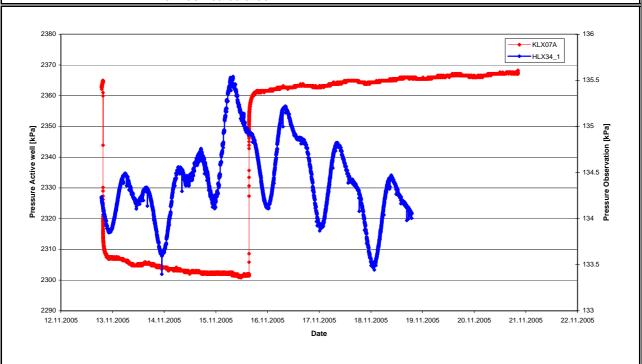
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	133.9
Pressure in test section before stop of flowing:	p_p	kPa	134.9
Maximum pressure change during flowing period:*	dp_p	kPa	1.0

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	HLX35	Section no.:	HLX35_1
		Section length:	65.00-151.50
Distance r _s [m]:	1818.46	max. Drawdown s _p [m]:*	0.10
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	132.6
Pressure in test section before stop of flowing:	p_p	kPa	133.6
Maximum pressure change during flowing period:*	dp_p	kPa	1.0

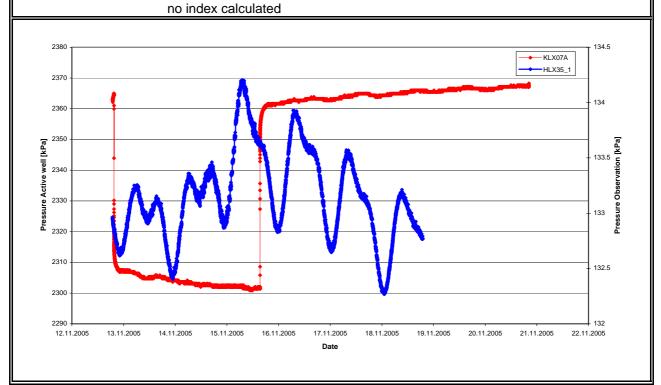
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	193.0	00-313.00
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2	005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2	005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04				
Pressure data		Nomenclature	Unit	V	alue
Pressure in test section	before start of flowing:	p _i	kF	Pa	2361
Pressure in test section before stop of flowing:		p_{n}	kF	Pa	2301

Observation Hole:	HLX35	Section no.:	HLX35_2
		Section length:	6.00-64.00
Distance r _s [m]:	1880.36	max. Drawdown s _p [m]:*	0.02
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	114.1
Pressure in test section before stop of flowing:	p_p	kPa	114.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Maximum pressure change during flowing period:

Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \text{$\#NV$}$

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

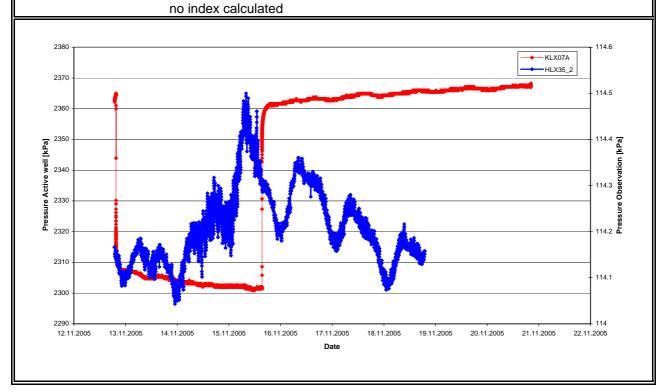
* see comment

kPa

 dp_p

60

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
		_	_

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX01	Section no.:	KLX01_1
		Section length:	705.00-1077.99
Distance r _s [m]:	1351.68	max. Drawdown s _p [m]:*	0.21
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	-19.2
Pressure in test section before stop of flowing:	p_p	kPa	-17.1
Maximum pressure change during flowing period:*	dp_p	kPa	2.1

Normalized drawdown with respect to pumping flow rate

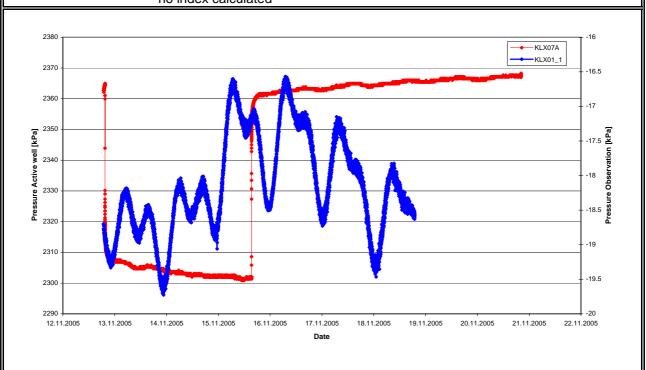
 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \text{$\#NV$}$

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Test Start: 12.11.2005 18:54 Test Stop: 20.11.2005 20: Pump Start: 12:11.2005 19:32 Pump Stop: 15.11.2005 15:2	Activityplan No.	AP PS 400-05-045		
Pump Start: 12:11.2005 19:32 Pump Stop: 15.11.2005 15:2	Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
	Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Flow Rate Q_p [m ³ /s]: 6.07E-04		12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
	Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX01	Section no.:	KLX01_2
		Section length:	191.00-704.00
Distance r _s [m]:	1171.07	max. Drawdown s _p [m]:*	0.16
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	54.4
Pressure in test section before stop of flowing:	p_p	kPa	56.0
Maximum pressure change during flowing period:*	dp_p	kPa	1.6

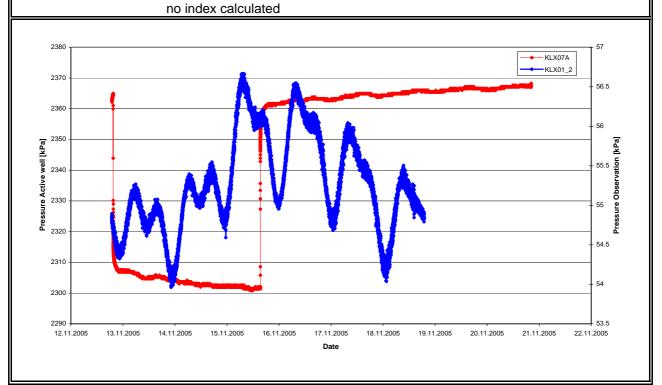
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX01	Section no.:	KLX01_3
		Section length:	171.00-190.00
Distance r _s [m]:	1133.85	max. Drawdown s _p [m]:*	0.10
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	65.1
Pressure in test section before stop of flowing:	p_p	kPa	66.1
Maximum pressure change during flowing period:*	dp_p	kPa	1.0

Normalized drawdown with respect to pumping flow rate

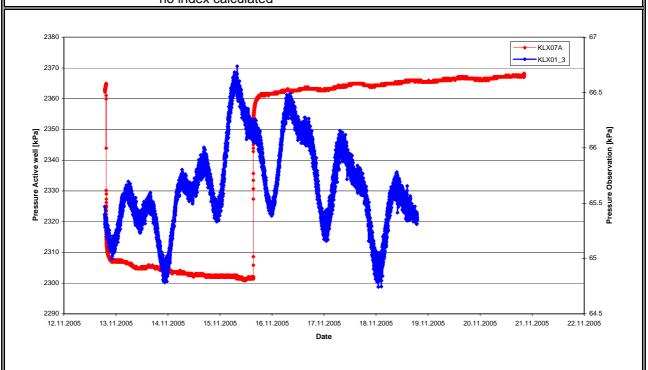
Index 2 $s_p/Q_p (s/m^2)$: #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX01	Section no.:	KLX01_4
		Section length:	0.00-170.00
Distance r _s [m]:	1135.29	max. Drawdown s _p [m]:*	0.03
Response time dt, [s]:	#NV		

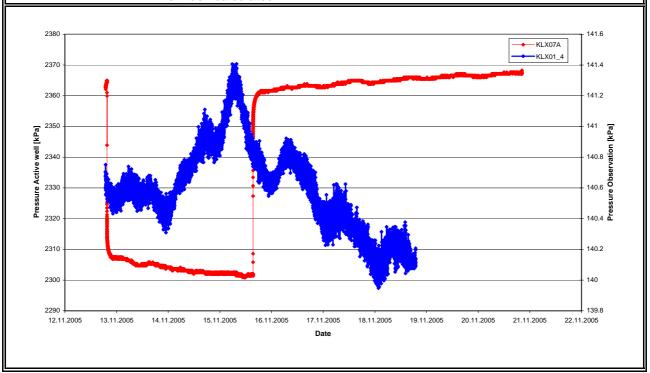
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	140.6
Pressure in test section before stop of flowing:	p_p	kPa	140.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_1
		Section length:	1165.00-1700.00
Distance r _s [m]:	1269.39	max. Drawdown s _p [m]:*	0.19
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	75.9
Pressure in test section before stop of flowing:	p_p	kPa	77.8
Maximum pressure change during flowing period:*	dp_p	kPa	1.9

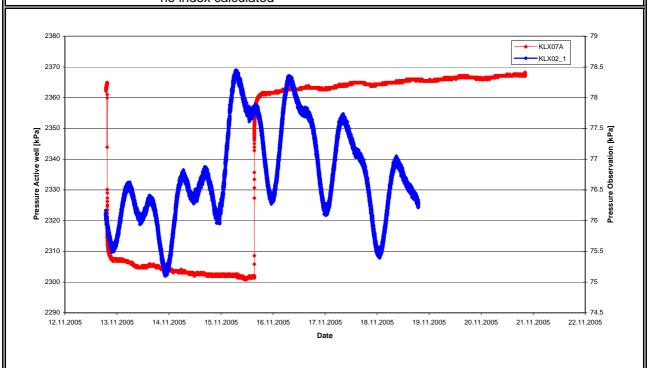
Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

no response due to pumping in source

* see comment

Comment: pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_2
		Section length:	1145.00-1164.00
Distance r _s [m]:	994.36	max. Drawdown s _p [m]:*	0.21
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	58.7
Pressure in test section before stop of flowing:	p_p	kPa	60.8
Maximum pressure change during flowing period:*	dp_p	kPa	2.1

Normalized drawdown with respect to pumping flow rate

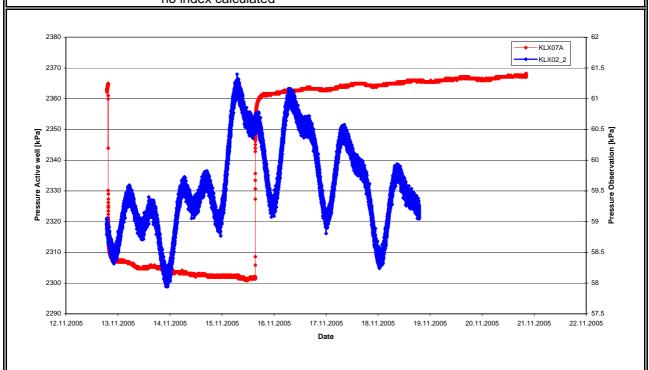
 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \text{$\#NV$}$

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
	<u> </u>	<u> </u>	

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_3
		Section length:	718.00-1144.00
Distance r _s [m]:	775.50	max. Drawdown s _p [m]:*	0.17
Response time dt _L [s]:	#NV		

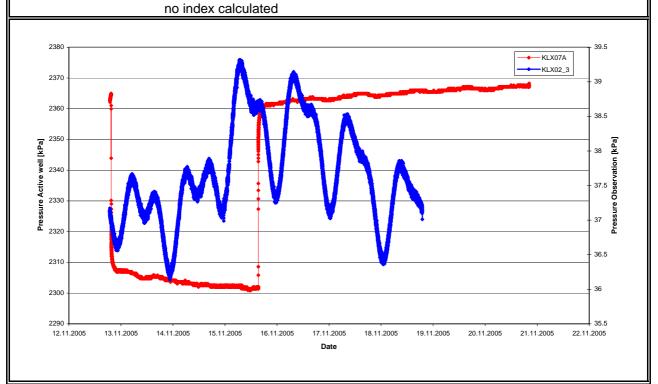
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	36.9
Pressure in test section before stop of flowing:	p_p	kPa	38.6
Maximum pressure change during flowing period:*	dp_p	kPa	1.7

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
			·

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_4
		Section length:	495.00-717.00
Distance r _s [m]:	465.70	max. Drawdown s _p [m]:*	0.14
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	50.2
Pressure in test section before stop of flowing:	p_p	kPa	51.6
Maximum pressure change during flowing period:*	dp_p	kPa	1.4

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A 52.5 2370 2360 2350 Pressure Active well [kPa] 2330 2320 2310 49.5 2300 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005 17.11.2005 18.11.2005 19.11.2005 20.11.2005 21.11.2005 22.11.2005 Date

Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_5
		Section length:	452.00-494.00
Distance r _s [m]:	347.39	max. Drawdown s _p [m]:*	0.06
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	55.9
Pressure in test section before stop of flowing:	p_p	kPa	56.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.6

Normalized drawdown with respect to pumping flow rate

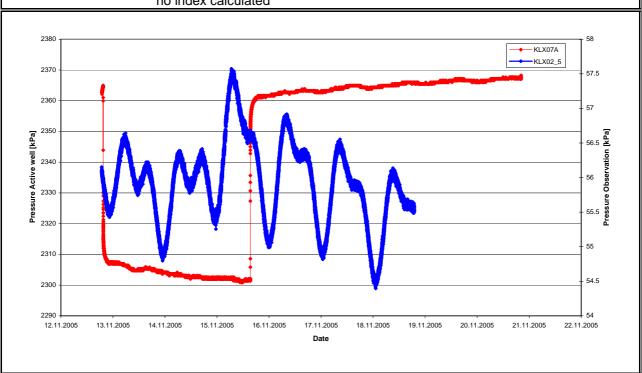
 s_p/Q_p (s/m²): Index 2 #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

no response due to pumping in source Comment:

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_6
		Section length:	348.00-451.00
Distance r _s [m]:	287.87	max. Drawdown s _p [m]:*	0.17
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	56.9
Pressure in test section before stop of flowing:	p_p	kPa	55.2
Maximum pressure change during flowing period:*	dp_p	kPa	1.7

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 285.49

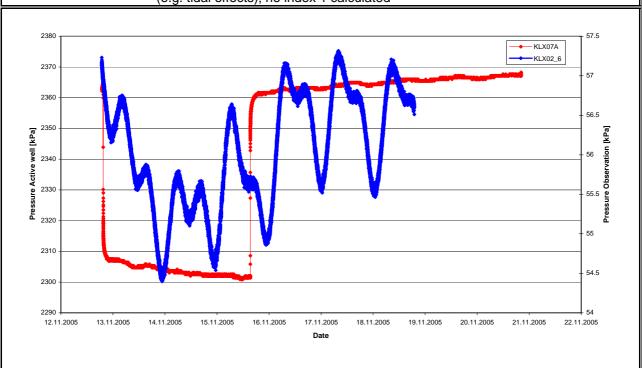
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 1616.59

* see comment

Comment: response due to pumping in source

pressure changes influenced additionally by natural fluctuations

(e.g. tidal effects); no index 1 calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_7
		Section length:	209.00-347.00
Distance r _s [m]:	211.19	max. Drawdown s _p [m]:*	0.70
Response time dt _L [s]:	557		

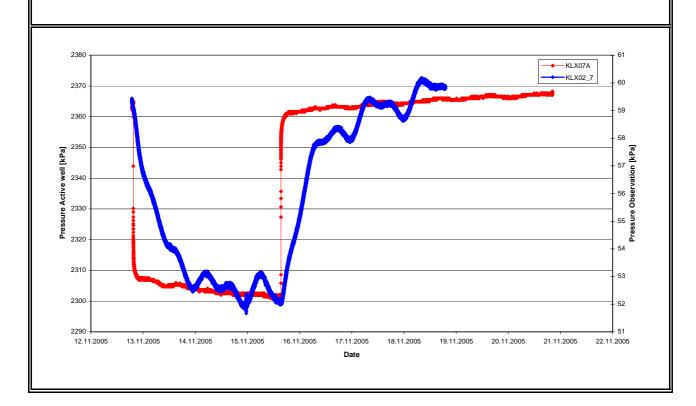
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	59.0
Pressure in test section before stop of flowing:	p_p	kPa	52.1
Maximum pressure change during flowing period:*	dp_p	kPa	6.9

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 80.07

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 1158.75

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 6202.52

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX02	Section no.:	KLX02_8
		Section length:	202.95-208.00
Distance r _s [m]:	189.75	max. Drawdown s _p [m]:*	0.64
Response time dt, [s]:	1717		

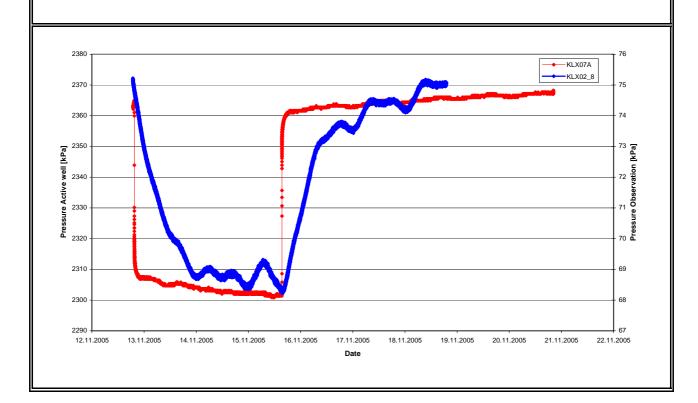
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	74.7
Pressure in test section before stop of flowing:	p_p	kPa	68.4
Maximum pressure change during flowing period:*	dp_p	kPa	6.3

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 20.97

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 1057.99

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 5549.95

Comment: clear response due to pumping in source



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX04	Section no.:	KLX04_1
		Section length:	898.00-1000.00
Distance r _s [m]:	1372.41	max. Drawdown s _p [m]:*	0.20
Response time dt _L [s]:	#NV		

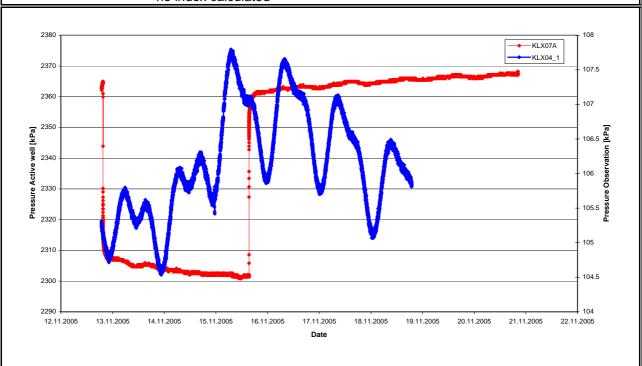
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	105.1
Pressure in test section before stop of flowing:	p_p	kPa	107.1
Maximum pressure change during flowing period:*	dp_p	kPa	2.0

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Proceuro data		Nomonoloturo Unit	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX04	Section no.:	KLX04_2
		Section length:	870.00-897.00
Distance r _s [m]:	1342.02	max. Drawdown s _p [m]:*	0.22
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	103.0
Pressure in test section before stop of flowing:	p_p	kPa	105.2
Maximum pressure change during flowing period:*	dp_p	kPa	2.2

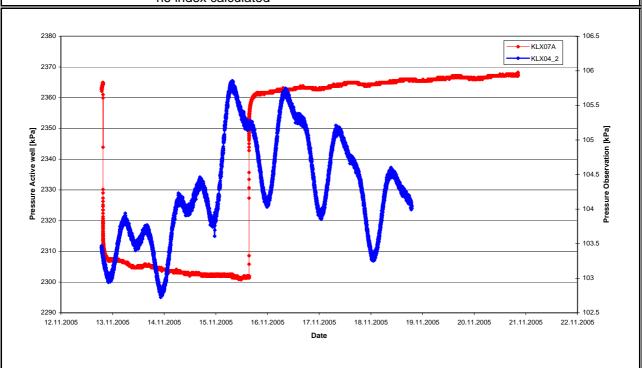
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX04	Section no.:	KLX04_3
		Section length:	686.00-869.00
Distance r _s [m]:	1297.10	max. Drawdown s _p [m]:*	0.19
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	114.2
Pressure in test section before stop of flowing:	p_p	kPa	116.1
Maximum pressure change during flowing period:*	dp_p	kPa	1.9

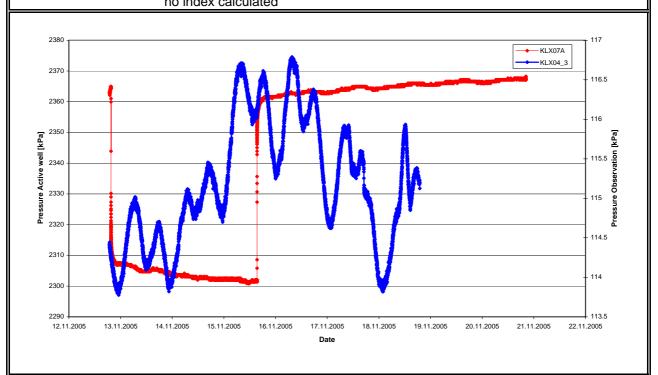
Normalized drawdown with respect to pumping flow rate

 $\label{eq:sp/Qp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		
_			

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX04	Section no.:	KLX04_4
		Section length:	531.00-685.00
Distance r _s [m]:	1236.99	max. Drawdown s _p [m]:*	0.17
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	113.5
Pressure in test section before stop of flowing:	p_p	kPa	115.2
Maximum pressure change during flowing period:*	dp_p	kPa	1.7

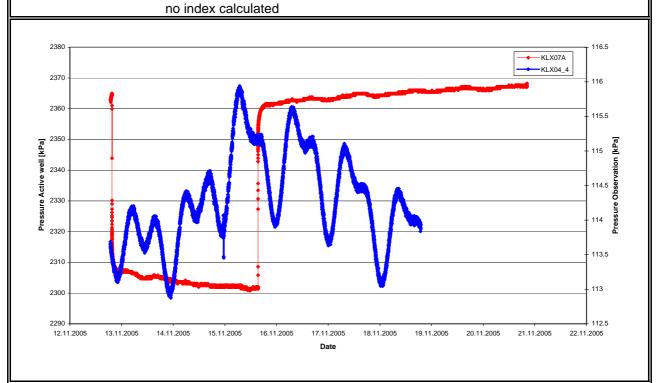
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Flow Rate Q _p [m ³ /s]:	6.07E-04	i ump otop.	10.11.2000 13.24
Test Start: Pump Start:	12.11.2005 18:54 12:11.2005 19:32	Test Stop: Pump Stop:	20.11.2005 20:17 15.11.2005 15:24
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX04	Section no.:	KLX04_5
		Section length:	507.00-530.00
Distance r _s [m]:	1212.35	max. Drawdown s _p [m]:*	0.14
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	115.7
Pressure in test section before stop of flowing:	p_p	kPa	117.1
Maximum pressure change during flowing period:*	dp_p	kPa	1.4

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A KLX04_5 2370 117.5 2360 2350 Pressure Active well [kPa] 2330 2320 2310 115.5 2300 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005 17.11.2005 18.11.2005 19.11.2005 20.11.2005 21.11.2005 22.11.2005 Date

Flow Rate Q _p [m ³ /s]:	6.07E-04	i ump otop.	10.11.2000 13.24
Test Start: Pump Start:	12.11.2005 18:54 12:11.2005 19:32	Test Stop: Pump Stop:	20.11.2005 20:17 15.11.2005 15:24
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX04	Section no.:	KLX04_6
		Section length:	231.00-506.00
Distance r _s [m]:	1183.15	max. Drawdown s _p [m]:*	0.17
Response time dt _L [s]:	#NV		

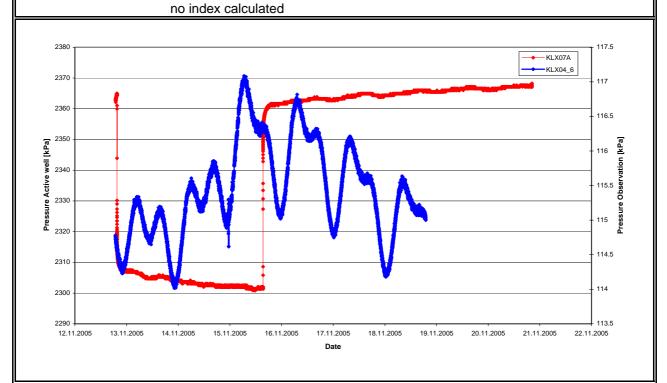
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	114.6
Pressure in test section before stop of flowing:	p_p	kPa	116.3
Maximum pressure change during flowing period:*	dp_p	kPa	1.7

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	6.07E-04		
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX04	Section no.:	KLX04_7
		Section length:	163.00-230.00
Distance r _s [m]:	1168.64	max. Drawdown s _p [m]:*	0.10
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	116.1
Pressure in test section before stop of flowing:	p_p	kPa	117.1
Maximum pressure change during flowing period:*	dp_p	kPa	1.0

Normalized drawdown with respect to pumping flow rate

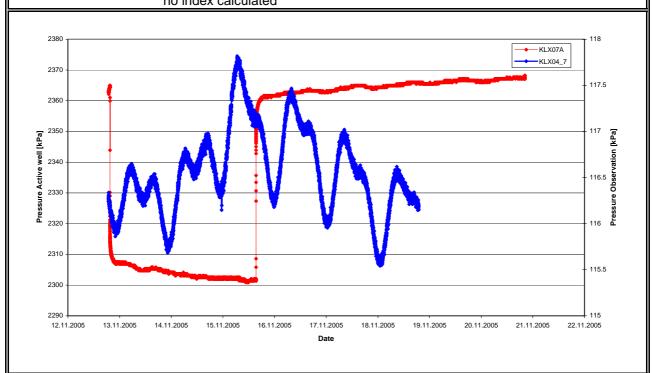
 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \text{$\#NV$}$

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:		20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:		15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04	-		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_i	kP	a 2361
Pressure in test section	n before stop of flowing:	p_p	kP	a 2301
Maximum pressure cha	ange during flowing period:	dp_p	kP	a 60
Observation Hole:	KLX04	Section no.:	·	KLX04 8

Observation Hole:	KLX04	Section no.:	KLX04_8
		Section length:	12.24-162.00
Distance r _s [m]:	1170.96	max. Drawdown s _p [m]:*	0.08
Response time dt _∟ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	120.5
Pressure in test section before stop of flowing:	p_p	kPa	121.3
Maximum pressure change during flowing period:*	dp_{p}	kPa	0.8

Normalized drawdown with respect to pumping flow rate

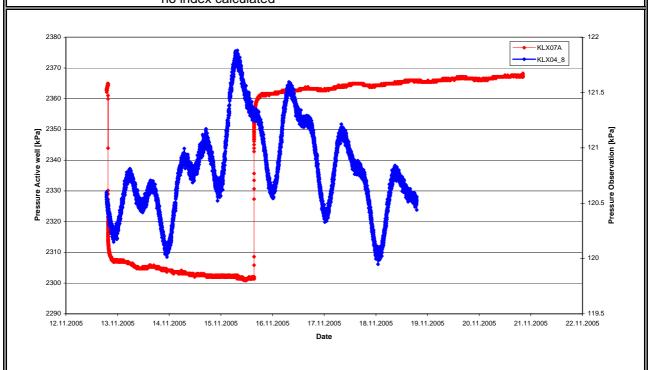
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX07B	Section no.:	KLX07B_1
		Section length:	112.00-200.00
Distance r _s [m]:	149.70	max. Drawdown s _p [m]:*	0.78
Response time dt _L [s]:	978		

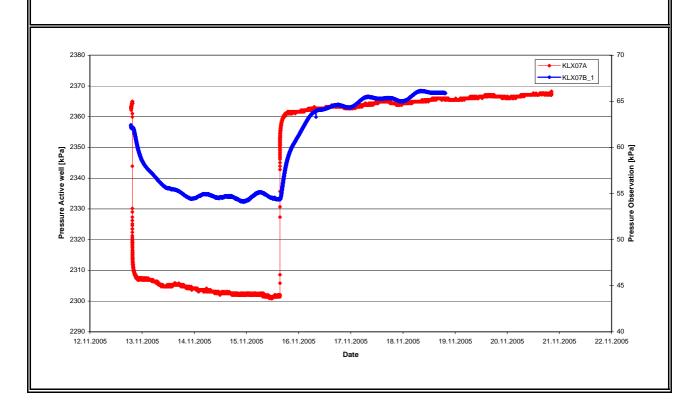
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	62.2
Pressure in test section before stop of flowing:	p_p	kPa	54.5
Maximum pressure change during flowing period:*	dp_p	kPa	7.7

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 22.91

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 1293.10

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 6476.68

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX07B	Section no.:	KLX07B_2
		Section length:	49.00-111.00
Distance r _s [m]:	191.30	max. Drawdown s _p [m]:*	0.81
Response time dt _L [s]:	212		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	61.1
Pressure in test section before stop of flowing:	p_p	kPa	53.2
Maximum pressure change during flowing period:*	dp_p	kPa	7.9

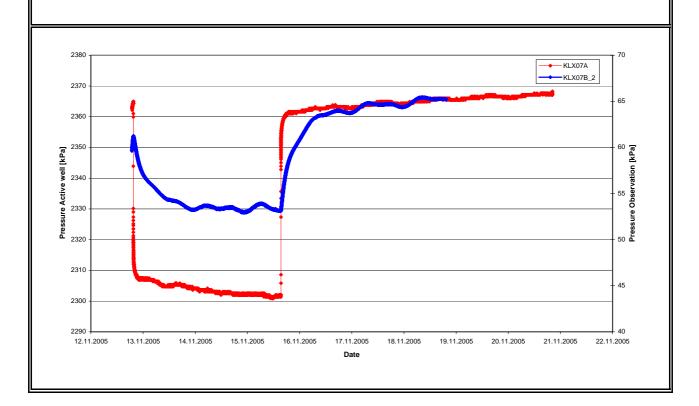
Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 172.62

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 1326.69

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 6970.22

(β β (3 0) ()

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	193.00-313.00
Test Start:	12.11.2005 18:54	Test Stop:	20.11.2005 20:17
Pump Start:	12:11.2005 19:32	Pump Stop:	15.11.2005 15:24
Flow Rate Q _p [m ³ /s]:	6.07E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	2361
Pressure in test section before stop of flowing:	p_p	kPa	2301
Maximum pressure change during flowing period:	dp_p	kPa	60

Observation Hole:	KLX07B	Section no.:	KLX07B_3
		Section length:	0.00-48.00
Distance r _s [m]:	233.32	max. Drawdown s _p [m]:*	0.80
Response time dt, [s]:	52		

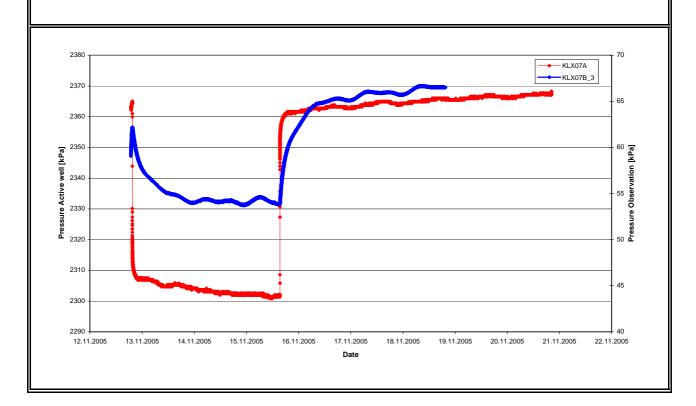
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	61.9
Pressure in test section before stop of flowing:	p_p	kPa	54.1
Maximum pressure change during flowing period:*	dp_p	kPa	7.8

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 1046.89

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 1309.90

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 7142.09

Comment: clear response due to pumping in source



Borehole: KLX07A

APPENDIX 6-3

Index calculation

KLX07A Section 335.00-455.00 m pumped

Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	a 3374
Pressure in test section	before stop of flowing:	p_p	kPa	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	a 114
Observation Hole:	HLX01	Section no.:		HLX01_1
		Section length:		16.00-100.63
Distance r _s [m]:	921.51	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV	·		
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 61.9
Pressure in test section	before stop of flowing:	p_p	kPa	a 62.1
Maximum pressure cha	nge during flowing period:*	dp _p	kPa	a 0.2

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

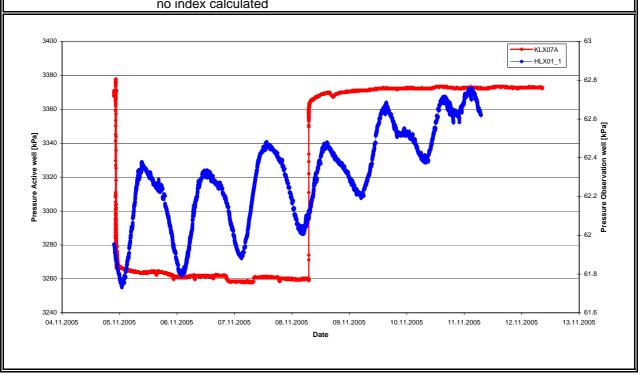
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	inge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX02	Section no.: HLX		HLX02_1
		Section length:		0.60-132.00
Distance r _s [m]:	1775.52	max. Drawdown s _p	[m]:*	0.20
Response time dt _L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	44.9
Pressure in test section before stop of flowing:		p_p	kPa	46.9
Maximum pressure cha	inge during flowing period:*	dp_p	kPa	2.0

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

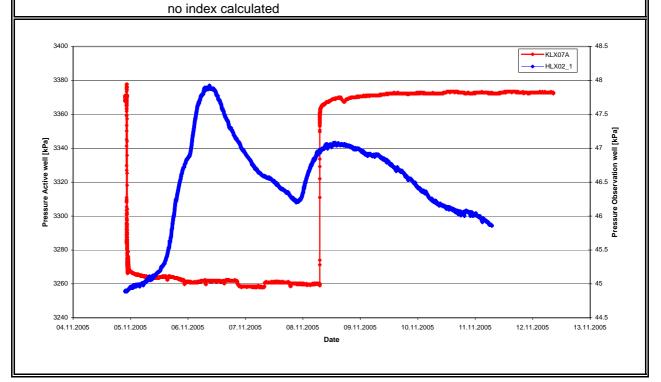
#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

* see comment

Comment:

no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	Pumping Hole: KLX07A		n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 3374
Pressure in test section before stop of flowing:		p_p	kPa	a 3260
Maximum pressure change during flowing period:		dp_p	kPa	a 114
Observation Hole: HLX06		Section no.:		HLX06_1
		Section length:		1.00-100.00
Distance r _s [m]:	877.25	max. Drawdown s _p [m]:*		0.01
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 77.6
Pressure in test section before stop of flowing:		p_p	kPa	a 77.5
Maximum pressure change during flowing period:*		dp_p	kPa	a 0.1

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

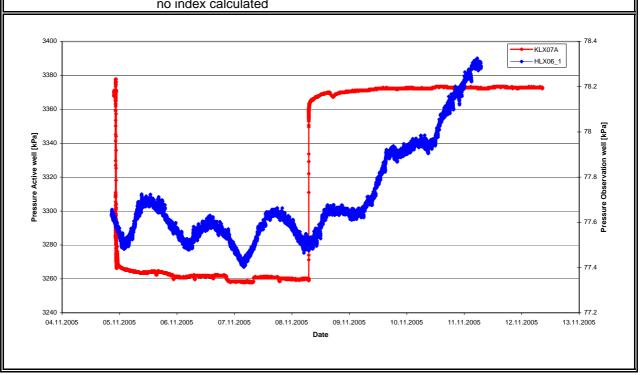
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	Pumping Hole: KLX07A		n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 3374
Pressure in test section before stop of flowing:		p_p	kPa	a 3260
Maximum pressure change during flowing period:		dp_p	kPa	a 114
Observation Hole: HLX07		Section no.:		HLX07_1
		Section length:		16.00-100.00
Distance r _s [m]:	1066.39	max. Drawdown s _p [m]:*		0.07
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	54.8
Pressure in test section before stop of flowing:		p_p	kPa	a 55.5
Maximum pressure change during flowing period:*		dp_p	kPa	a 0.7

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A -HLX07_1 3360 Pressure Observation well [kPa] Pressure Active well [kPa] 55.6 3340 55.4 3320 3300 55.2 55 3280 54.8 3260 54.6 3240 07.11.2005 13.11.2005 04.11.2005 05.11.2005 06.11.2005 08.11.2005 09.11.2005 10.11.2005 11.11.2005 12.11.2005

Activityplan No.	AP PS 400-05-045			
Pumping Hole:	umping Hole: KLX07A Pumping Section		n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	Pressure in test section before start of flowing:		kl	Pa 3374
Pressure in test section before stop of flowing:		p_p	kl	Pa 3260
Maximum pressure cha	Maximum pressure change during flowing period:		kl	Pa 114
Observation Hole: HLX10		Section no.:		HLX10_1
		Section length:		3.00-85.00
Distance r _s [m]:	259.56	max. Drawdown s _p [m]:*		0.36
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kl	Pa 52.1
Pressure in test section before stop of flowing:		p_p	kl	Pa 48.6
Maximum pressure change during flowing period:*		dp_p	kl	Pa 3.5

Normalized drawdown with respect to pumping flow rate

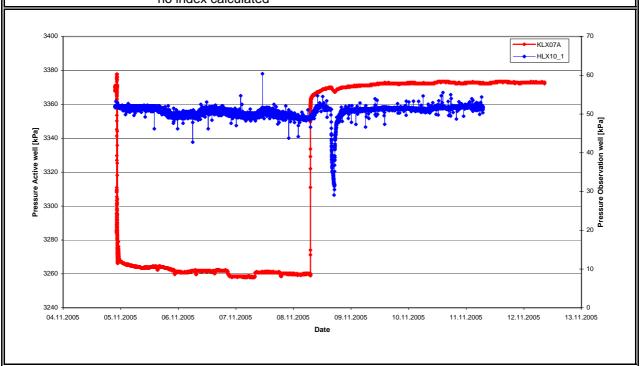
 s_p/Q_p (s/m²): Index 2 #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole: KLX07A		Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 3374
Pressure in test section before stop of flowing:		p_p	kPa	a 3260
Maximum pressure change during flowing period:		dp_p	kPa	a 114
Observation Hole:	HLX11	Section no.:		HLX11_1
		Section length:		17.00-70.00
Distance r _s [m]:	318.19	max. Drawdown s _p [m]:*		0.20
Response time dt _L [s]:	2203			
Pressure data		Nomenclature	Unit	Value

Pressure in test section before start of flowing: p_{i} kPa 63.4 Pressure in test section before stop of flowing: p_{p} kPa 61.4 Maximum pressure change during flowing period:* dp_p kPa 2.0

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 45.9

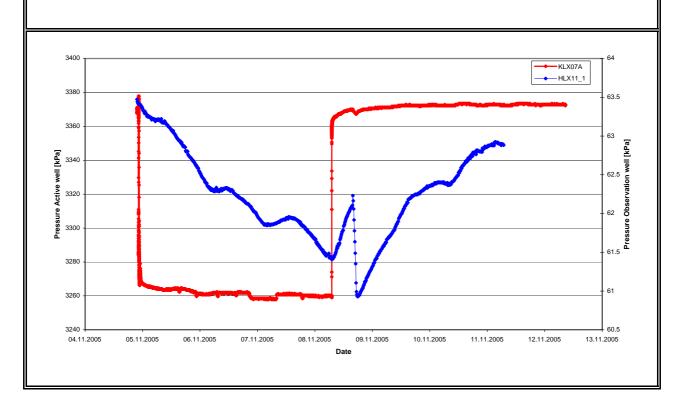
45.96

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 675.08

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3890.24

* see comment

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	Pumping Hole: KLX07A		m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	Pressure in test section before start of flowing:		kP	a 3374
Pressure in test section before stop of flowing:		p_p	kP	a 3260
Maximum pressure change during flowing period:		dp_p	kP	a 114
Observation Hole:	HLX11	Section no.:		HLX11_2
		Section length:		6.00-16.00
Distance r _s [m]:	333.03	max. Drawdown s _p [m]:* 0.3		0.20
Response time dt _L [s]:	7020			
Pressure data		Nomenclature	Unit	Value

62.5 Pressure in test section before start of flowing: p_{i} kPa Pressure in test section before stop of flowing: 60.5 p_{p} kPa Maximum pressure change during flowing period:* dp_p kPa 2.0

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 15.80

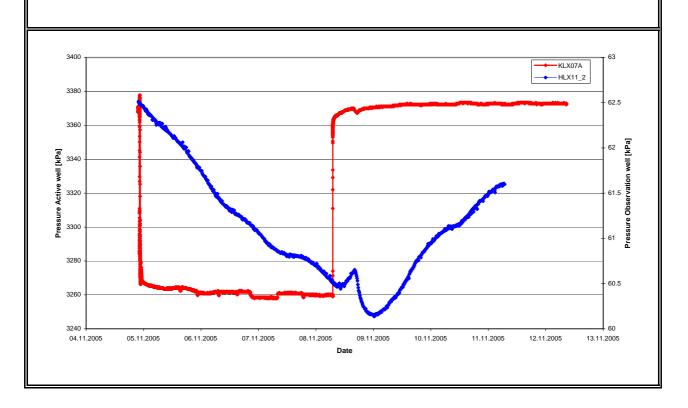
15.80

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 675.08

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3921.01

* see comment

Comment: clear response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	Pressure in test section before start of flowing:		kPa	3374
Pressure in test section	Pressure in test section before stop of flowing:		kPa	3260
Maximum pressure change during flowing period:		dp_p	kPa	114
Observation Hole:	HLX13	Section no.:		HLX13_1
		Section length:		11.87-200.02
Distance r _s [m]: 1613.78		max. Drawdown s _p	, [m]:*	0.01
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	Pressure in test section before start of flowing:		kPa	120.4

Pressure in test section before start of flowing: kPa 120.4 p_i Pressure in test section before stop of flowing: kPa 120.3 p_{p} Maximum pressure change during flowing period:* dp_p kPa 0.1

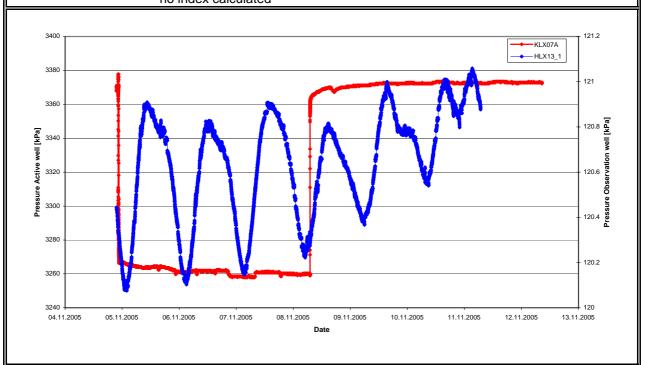
Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX14	Section no.:		HLX14_1
		Section length:		11.00-115.90
Distance r _s [m]:	1627.01	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV	·		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	116.7
Pressure in test section	before stop of flowing:	p_p	kPa	116.8
Maximum pressure cha	nge during flowing period:*	dp _p	kPa	0.1
		'		

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

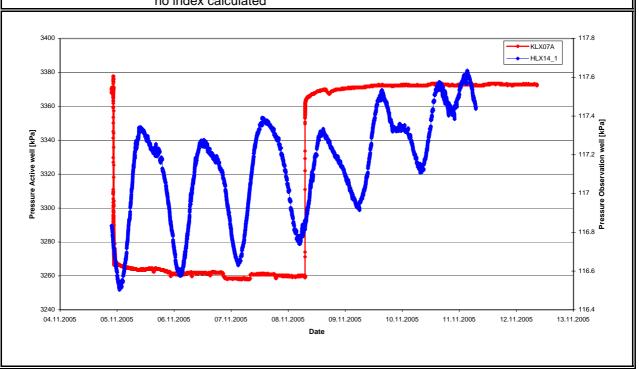
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure char	nge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX21	Section no.:		HLX21_1
		Section length:		81.00-150.00
Distance r _s [m]:	451.13	max. Drawdown s _p	[m]:*	0.36
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	52.9
Pressure in test section	before stop of flowing:	p_p	kPa	49.4
Maximum pressure cha	nge during flowing period:*	dp _p	kPa	a 3.5

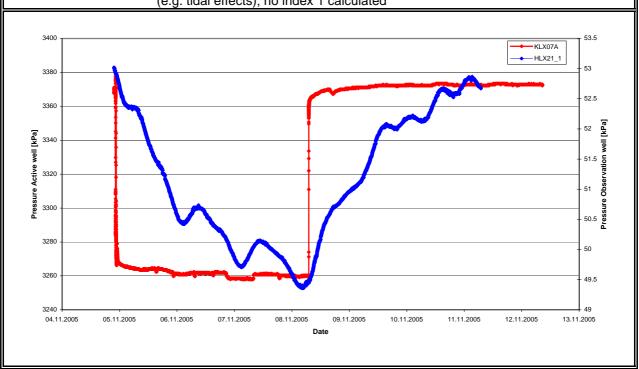
Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 1181.39

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 7220.36

* see comment

Comment:

response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects); no index 1 calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 3374
Pressure in test section	Pressure in test section before stop of flowing:		kPa	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	a 114
Observation Hole:	HLX21	Section no.:		HLX21_2
		Section length:		9.10-80.00
Distance r _s [m]:	460.82	max. Drawdown s _p	[m]:*	0.35
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 51.7
Pressure in test section	before stop of flowing:	p_p	kPa	a 48.3
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	a 3.4

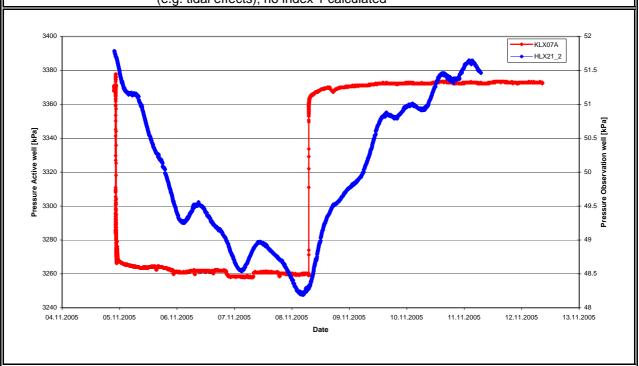
Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 1147.63

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 7038.45

* see comment

Comment:

response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects); no index 1 calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [n	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kP	a 3374
Pressure in test section	before stop of flowing:	p_p	kP	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kP	a 114
Observation Hole:	HLX22	Section no.:		HLX22_1
		Section length:		86.00-163.20
Distance r _s [m]:	483.00	max. Drawdown s _p	[m]:*	0.37
Response time dt _L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kP	a 51.7
Pressure in test section	before stop of flowing:	p_p	kP	a 48.1
Maximum pressure cha	nge during flowing period:*	dp _p	kP	a 3.6

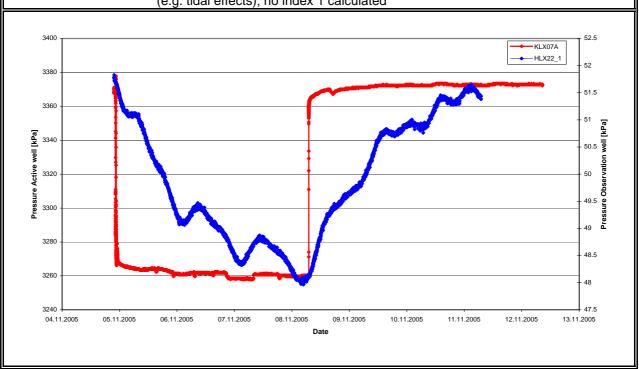
Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): 1215.14 Index 2

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 7509.59

* see comment

Comment:

response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects); no index 1 calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	3374
Pressure in test section	Pressure in test section before stop of flowing:		kPa	3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX22	Section no.:		HLX22_2
		Section length:		9.19-85.00
Distance r _s [m]:	500.00	max. Drawdown s _p	[m]:*	0.20
Response time dt_L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	38.5
Pressure in test section	before stop of flowing:	p_p	kPa	36.5
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	2.0

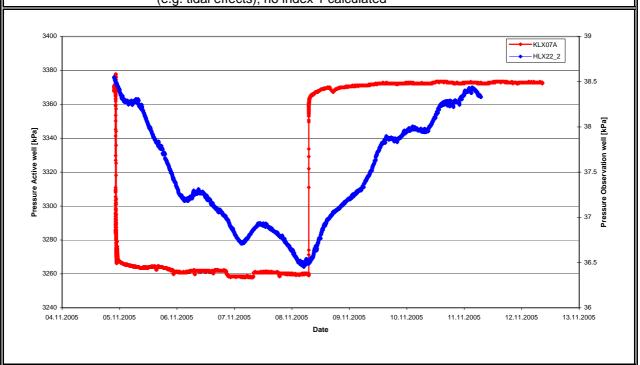
Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 675.08

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 4195.35

* see comment

Comment:

response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects); no index 1 calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kP	a 3374
Pressure in test section	before stop of flowing:	p_p	kP	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kP	a 114
Observation Hole:	HLX23	Section no.:		HLX23_1
		Section length:		61.00-160.20
Distance r _s [m]:	429.24	max. Drawdown s_p	[m]:*	0.01
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kP	a 98.
Pressure in test section	before stop of flowing:	p_p	kP	a 98.4
Maximum pressure cha	nge during flowing period:*	dp _p	kP	a 0.
Normalized response tir	me with respect to the distanc	ce		
Normalized response tir	me with respect to the distance r_s^2/dt_L (m²/s): #N			
Index 1	r_s^2/dt_L (m ² /s): #N	V		
Index 1 Normalized drawdown v	${\rm r_s}^2/{\rm dt_L}$ (m ² /s): #NV with respect to pumping flow r	V rate		
Index 1	r_s^2/dt_L (m ² /s): #N	V rate		
Index 1 Normalized drawdown v	${\rm r_s}^2/{\rm dt_L}$ (m ² /s): #NV with respect to pumping flow r	v rate v		
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²):	r_s^2 /dt _L (m ² /s): #N\ with respect to pumping flow r s_p/Q_p (s/m ²): #N\ #N\	V rate V		* see comment
Normalized drawdown v	r_s^2 /dt _L (m ² /s): #N\ with respect to pumping flow r s_p/Q_p (s/m ²): #N\ response due to pumping in	v rate v v n source (analysis perfo		* see comment
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²):	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		* see comment
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²):	r_s^2 /dt _L (m ² /s): #N\ with respect to pumping flow r s_p/Q_p (s/m ²): #N\ response due to pumping in	v rate v v n source (analysis perfo		* see comment
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²):	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		* see comment
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65 HLX23_1 98.66 98.6
Index 1 Normalized drawdown values 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65 HLX23_1 98.6 98.55 98.5
Index 1 Normalized drawdown values 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65 HLX23_1 98.6 98.55 98.5
Index 1 Normalized drawdown values 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65 HLX23_1 98.6 98.55 98.5
Index 1 Normalized drawdown values 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65 HLX23_1 98.6 98.55 98.5
Index 1 Normalized drawdown volumex 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow r s _p /Q _p (s/m²): #N¹ response due to pumping in no response according to S	v rate v v n source (analysis perfo		98.65 98.65 98.66 98.55 98.45 98.45 98.4 98.4 98.4 98.4 98.4 98.4 98.4 98.4

3280

3260

3240 -

31.10.2005

02.11.2005

04.11.2005

06.11.2005

Date

08.11.2005

98.2

98.15

14.11.2005

12.11.2005

10.11.2005

Activityplan No.	AP PS 400-05-045			
Pumping Hole: Test Start: Pump Start: Flow Rate Q _p [m ³ /s]:	KLX07A 04.11.2005 21:35 04.11.2005 22:33 3.02E-04	Pumping Section [r Test Stop: Pump Stop:	-	335.00-455.00 12.11.2005 08:36 08.11.2005 07:03
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	337
Pressure in test section	before stop of flowing:	p _p	kPa	326
Maximum pressure cha	nge during flowing period:	dp_p	kPa	11
Observation Hole:	HLX23	Section no.:		HLX23_2
Distance r_s [m]: Response time dt_L [s]:	438.38 #NV	Section length: max. Drawdown s _p	[m]:*	6.10-60.00 0.02
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	96.
Pressure in test section	<u> </u>	p _p	kPa	96.
	nge during flowing period:*	dp_p	kPa	0.
Normalized response til Index 1	me with respect to the distance r_s^2/dt_L (m²/s): #N'			
Index 1 Normalized drawdown v Index 2		V rate		
Index 1 Normalized drawdown v	r _s ² /dt _L (m ² /s): #N ¹ with respect to pumping flow	v rate v		t and normalist
Index 1 Normalized drawdown v Index 2	r_s^2/dt_L (m ² /s): #N ¹ with respect to pumping flow s_p/Q_p (s/m ²): #N ¹	rate V V n source (analysis perfo	rmed)	see comment

96.1

- 96

14.11.2005

3260

3240 -

31.10.2005

02.11.2005

04.11.2005

06.11.2005

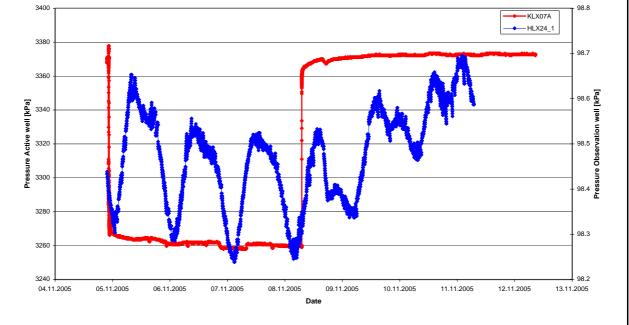
Date

08.11.2005

10.11.2005

12.11.2005

Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section	[m bToC]:		335.00-455.00
Test Start:	04.11.2005 21:35		Test Stop:			12.11.2005 08:36
Pump Start:	04.11.2005 22:33		Pump Stop:			08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_{i}		kPa	3374
Pressure in test section	before stop of flowing:		p_p		kPa	3260
Maximum pressure cha	nge during flowing period	d:	dp_p		kPa	114
Observation Hole:	HLX24		Section no.:			HLX24_1
			Section length:			41.00-175.20
Distance r _s [m]:	428.99		max. Drawdown s	_p [m]:*		0.02
Response time dt_L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p _i		kPa	98.7
Pressure in test section	before stop of flowing:		p_p		kPa	98.5
Maximum pressure char	nge during flowing period	d:*	dp _p		kPa	0.2
Normalized response tir	me with respect to the dis	stance #NV				
Normalized drawdown v	vith respect to pumping f s_p/Q_p (s/m²):	low rate #NV				
$(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$:		#NV				* see comment
Comment:	response due to pumpi	-				
	no response according	to SKB	MD 330.003 ($s_p <$	0.1 m)		
	no index calculated					



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 3374
Pressure in test section	before stop of flowing:	p_p	kPa	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	a 114
Observation Hole:	HLX24	Section no.:		HLX24_2
		Section length:		9.10-40.00
Distance r _s [m]:	471.05	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 99.9
Pressure in test section	before stop of flowing:	p_p	kPa	a 100.0

Maximum pressure change during flowing period:*

#NV

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

* see comment

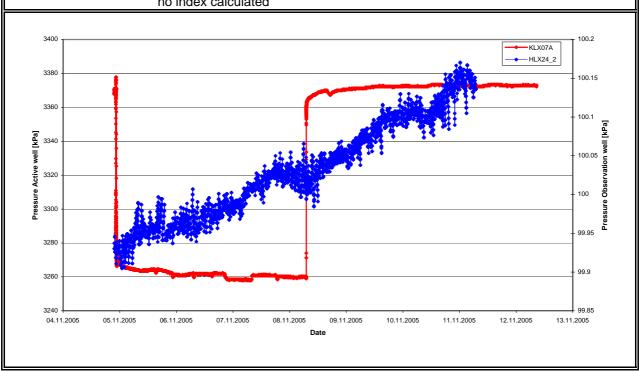
0.1

kPa

Comment:

no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

 dp_p



				I
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [n	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX25	Section no.:		HLX25_1
		Section length:		61.00-202.50
Distance r _s [m]:	1492.02	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	110.9
Pressure in test section	before stop of flowing:	p_p	kPa	111.1
Maximum pressure cha	nge during flowing period:*	dp_p	kPa	0.2

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

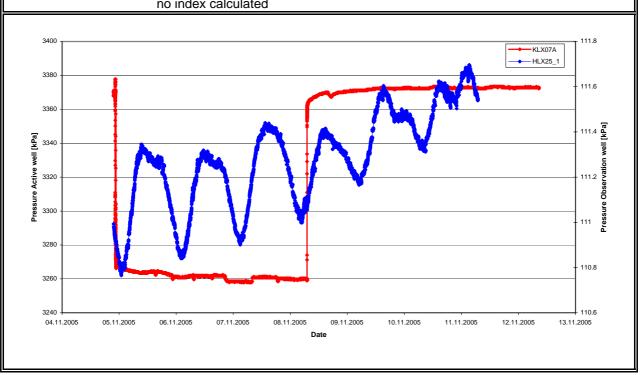
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	a 3374
Pressure in test section	before stop of flowing:	p_p	kPa	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	a 114
Observation Hole:	HLX25	Section no.:		HLX25_2
		Section length:		6.12-60.00
Distance r _s [m]:	1499.84	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 111.1
Pressure in test section	before stop of flowing:	p_p	kPa	a 111.2
Maximum pressure cha	nge during flowing period:*	dp _p	kPa	a 0.1

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

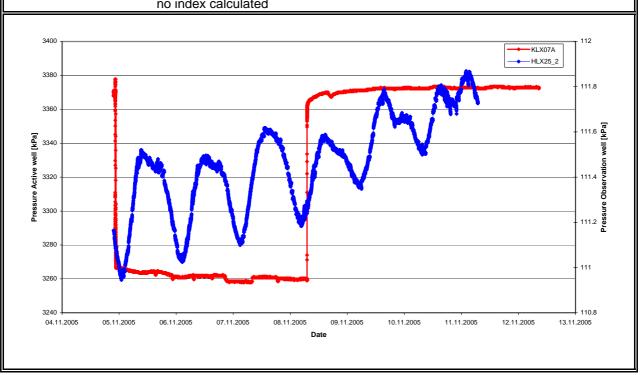
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 3374
Pressure in test section	before stop of flowing:	p_p	kPa	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	a 114
Observation Hole:	HLX30	Section no.:		HLX30_1
		Section length:		101.00-163.40
Distance r _s [m]:	1198.56	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV	·		
Pressure data		Nomenclature	Unit	Value
Drossure in test section	before start of flowing:	n	l ₂ D ₄	1007

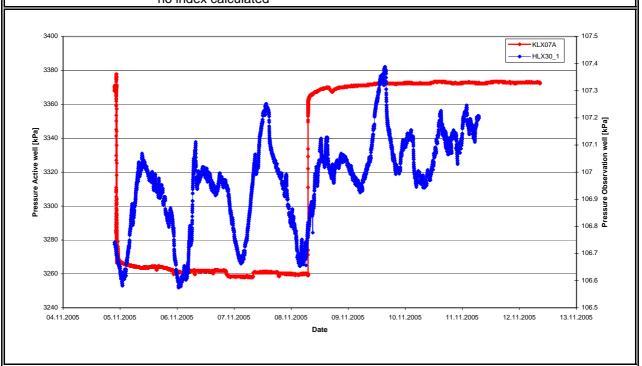
Pressure in test section before start of flowing: p_{i} kPa 106.7 Pressure in test section before stop of flowing: kPa 106.8 p_{p} Maximum pressure change during flowing period:* dp_p kPa 0.1

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]: 335.00-45		335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	inge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX30	Section no.: HLX		HLX30_2
		Section length:		9.10-100.00
Distance r _s [m]:	1222.22	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	106.3
Pressure in test section	before stop of flowing:	p_p	kPa	106.4
Maximum pressure cha	inge during flowing period:*	dp_p	kPa	0.1

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

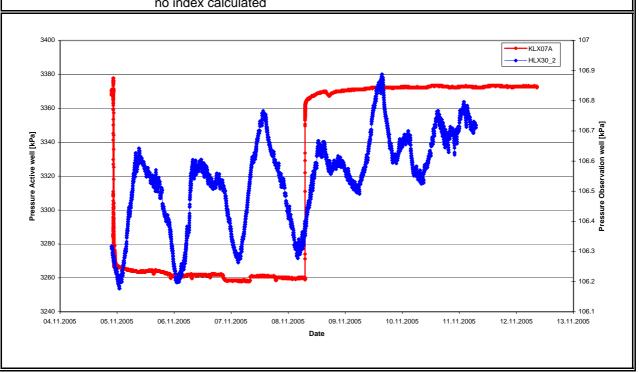
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole: KLX07A		Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure change during flowing period:		dp_p	kPa	114
Observation Hole:	HLX31	Section no.:		HLX31_1
		Section length:		9.10-133.20
Distance r _s [m]:	1154.65	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV	·		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	106.8
Pressure in test section	before stop of flowing:	p_p	kPa	106.9
Maximum pressure change during flowing period:*		dp_p	kPa	0.1

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

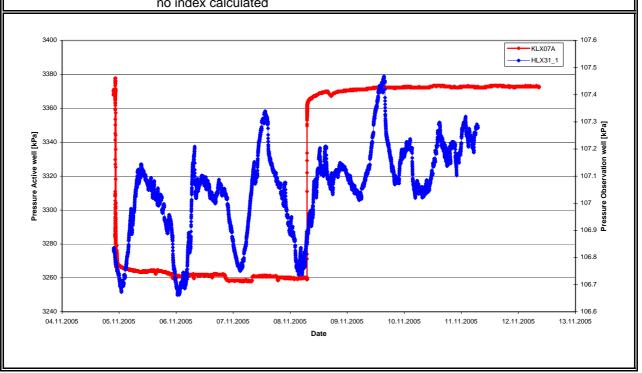
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	ing Hole: KLX07A Pumping Section [m bToC]: 335		335.00-455.00	
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	Pressure in test section before start of flowing:		kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX33	Section no.:		HLX33_1
		Section length:		31.00-202.10
Distance r _s [m]:	658.23	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	100.6
Pressure in test section before stop of flowing:		p_{p}	kPa	100.4

Maximum pressure change during flowing period:*

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

#NV

* see comment

0.2

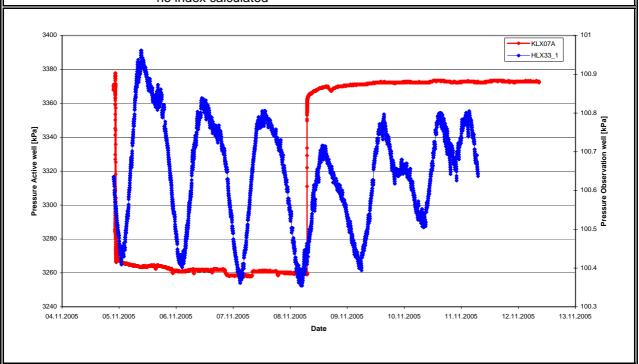
Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

 dp_p

kPa



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [n	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section I	pefore start of flowing:	p _i	kPa	3374
Pressure in test section I	pefore stop of flowing:	p_p	kPa	3260
Maximum pressure chan	ge during flowing period:	dp_p	kPa	114
Observation Hole:	HLX33	Section no.:		HLX33_2
		Section length:		9.10-30.00
Distance r _s [m]:	726.43	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section I	pefore start of flowing:	p _i	kPa	100.4
Pressure in test section before stop of flowing:		p_p	kPa	100.2
Maximum pressure chan	Maximum pressure change during flowing period:*		kPa	0.2

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

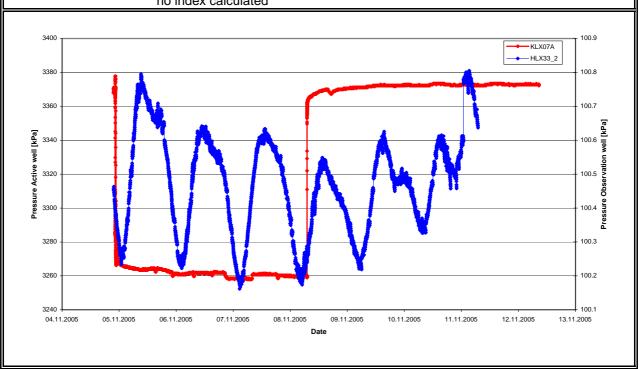
#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section before stop of flowing:		p_p	kPa	3260
Maximum pressure cha	ange during flowing period:	dp_p	kPa	114
Observation Hole:	HLX34	Section no.:		HLX34_1
		Section length:		9.00-151.80
Distance r _s [m]:	1879.72	max. Drawdown s _p	[m]:*	0.03
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	133.7
Pressure in test section before stop of flowing:		p_p	kPa	133.4
Maximum pressure change during flowing period:*		dp _p	kPa	0.3

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

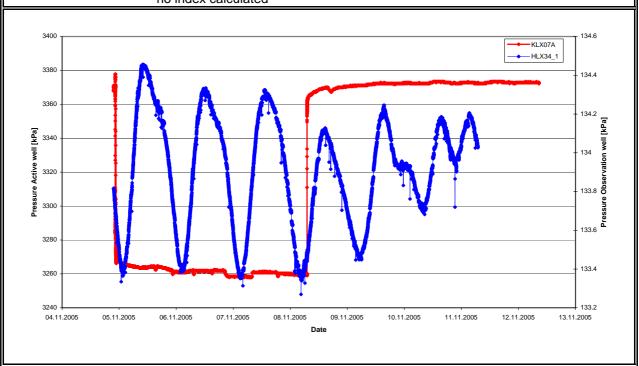
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



				Ţ
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [n	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 3374
Pressure in test section	Pressure in test section before stop of flowing:		kPa	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	a 114
Observation Hole:	HLX35	Section no.:		HLX35_1
		Section length:		65.00-151.50
Distance r _s [m]:	1864.73	max. Drawdown s _p	[m]:*	0.02
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 132.4
Pressure in test section	before stop of flowing:	p_p	kPa	a 132.2

Maximum pressure change during flowing period:*

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

0.2

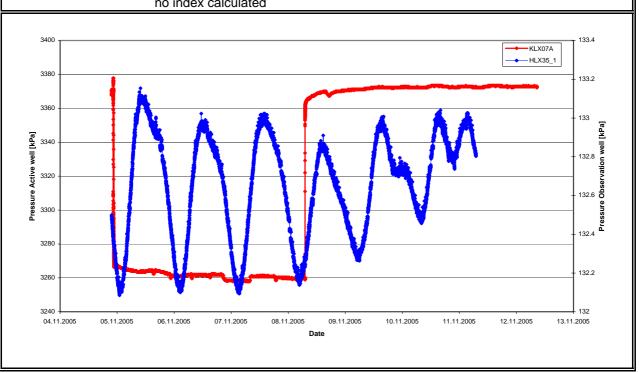
Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

 dp_p

kPa



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section before stop of flowing:		p_p	kPa	3260
Maximum pressure change during flowing period:		dp_p	kPa	114
Observation Hole:	HLX35	Section no.:		HLX35_2
		Section length:		6.00-64.00
Distance r _s [m]:	1931.18	max. Drawdown s _p	[m]:*	0.01
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	113.8
Pressure in test section	before stop of flowing:	p_p	kPa	113.9
Maximum pressure change during flowing period:*		dpp	kPa	0.1

onse time with respect to the distance r_s^2/dt_L (m²/s): #NV

Index 1

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

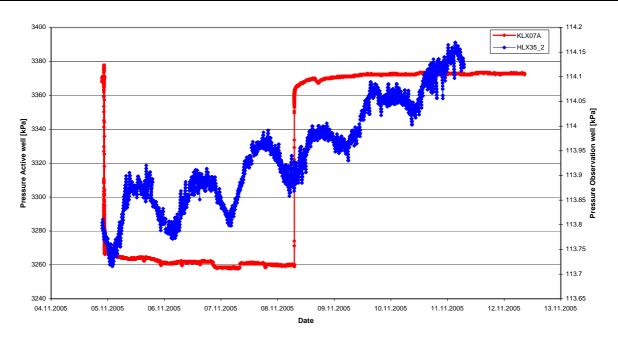
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:	12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:	08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	3374
Pressure in test section before stop of flowing:	p_p	kPa	3260
Maximum pressure change during flowing period:	dp_p	kPa	114

Observation Hole:	KLX01	Section no.:	KLX01_1
		Section length:	705.00-1077.99
Distance r _s [m]:	1368.18	max. Drawdown s _p [m]:*	0.03
Response time dt. [s]:	#NV		

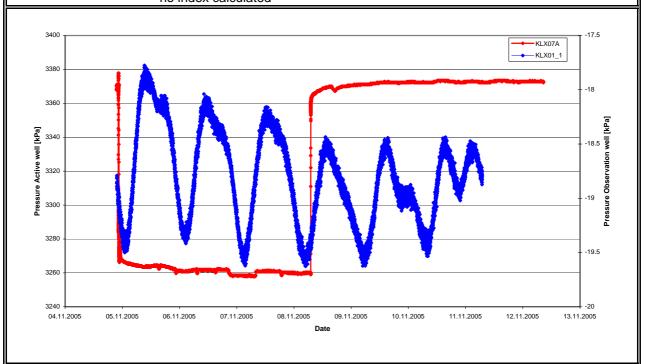
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	-19.1
Pressure in test section before stop of flowing:	p_p	kPa	-19.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	nge during flowing period:	dp_{p}	kPa	114
Observation Hole:	KLX01	Section no.:		KLX01_2
		Section length:		191.00-704.00
Distance r _s [m]:	1226.61	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	54.0

Pressure in test section before stop of flowing:

Maximum pressure change during flowing period:*

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$:

* see comment

53.8

0.2

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only

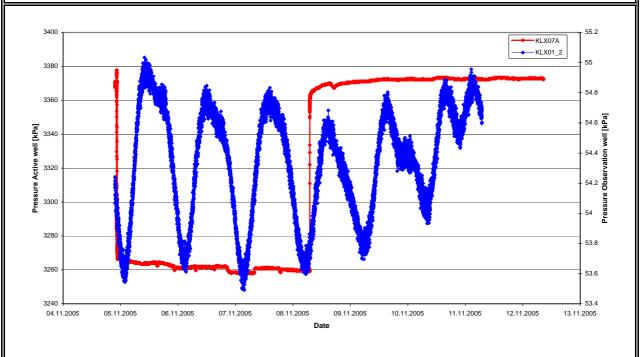
no index calculated

 p_{p}

 dp_p

kPa

kPa



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	3374
Pressure in test section	Pressure in test section before stop of flowing:		kPa	3260
Maximum pressure chai	Maximum pressure change during flowing period:		kPa	114
Observation Hole:	KLX01	Section no.: KI		KLX01_3
		Section length:		171.00-190.00
Distance r _s [m]:	1213.05	max. Drawdown s _p	[m]:*	0.02
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	64.7
Pressure in test section before stop of flowing:		p_p	kPa	64.5

Maximum pressure change during flowing period:*

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

0.2

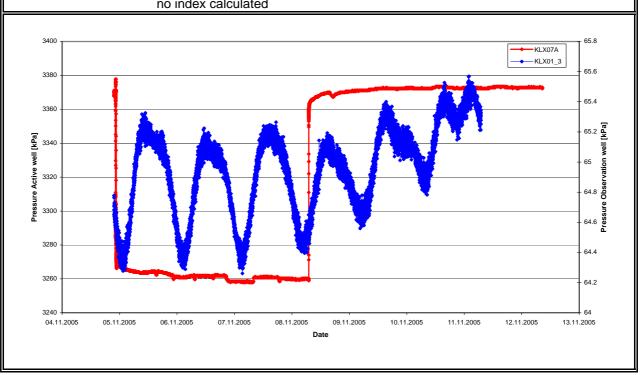
Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

 dp_p

kPa



KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
04.11.2005 21:35	Test Stop:		12.11.2005 08:36
04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
3.02E-04			
	Nomenclature	Unit	Value
pefore start of flowing:	p_{i}	kPa	a 3374
Pressure in test section before stop of flowing:		kPa	a 3260
Maximum pressure change during flowing period:		kPa	a 114
Observation Hole: KLX01			KLX01_4
	Section length:		1.00-170.00
1222.04	-	[m]:*	0.04
#NV	·		
	Nomenclature	Unit	Value
Pressure in test section before start of flowing:		kPa	a 139.8
Pressure in test section before stop of flowing:		kPa	a 140.2
Maximum pressure change during flowing period:*		kPa	a 0.4
•	04.11.2005 21:35 04.11.2005 22:33 3.02E-04 Defore start of flowing: Defore stop of flowing: Defore stop of flowing period: KLX01 1222.04 #NV Defore start of flowing: Defore start of flowing: Defore start of flowing: Defore stop of flowing:	04.11.2005 21:35	04.11.2005 21:35 04.11.2005 22:33 3.02E-04 Nomenclature Unit pefore start of flowing: p _i kPa pefore stop of flowing: p _p kPa KLX01 Section no.: Section length: max. Drawdown s _p [m]:* Nomenclature Unit Page during flowing period: Nomenclature Unit Nomenclature Unit Page during flowing: p _i kPage during flowing flowing: p _i kPage during flowing

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A -KLX01_4 140.8 3360 140.6 [KPa] 140.4 140.2 e Opservation well [KPa] Pressure Active well [kPa] 3340 3320 3300 140 3280 139.8 3260 139.6 3240 07.11.2005 11.11.2005 12.11.2005 13.11.2005 04.11.2005 05.11.2005 06.11.2005 08.11.2005 09.11.2005 10.11.2005 Date

Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.02E-04		
Pump Start:	04.11.2005 22:33	Pump Stop:	08.11.2005 07:03
Test Start:	04.11.2005 21:35	Test Stop:	12.11.2005 08:36
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	335.00-455.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	3374
Pressure in test section before stop of flowing:	p_p	kPa	3260
Maximum pressure change during flowing period:	dp_p	kPa	114

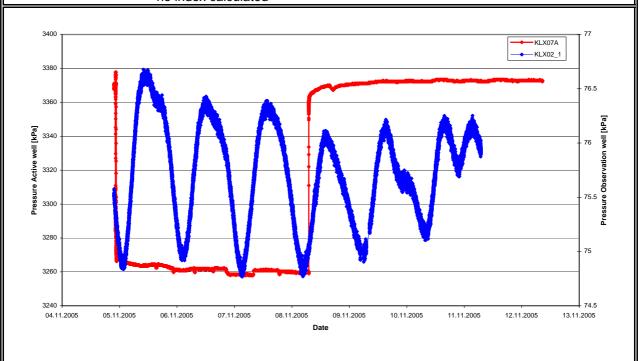
Observation Hole:	KLX02	Section no.:	KLX02_1
		Section length:	1165.00-1700.00
Distance r _s [m]:	1199.67	max. Drawdown s _p [m]:*	0.04
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	75.4
Pressure in test section before stop of flowing:	p_p	kPa	75.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:	12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:	08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	3374
Pressure in test section before stop of flowing:	p_p	kPa	3260
Maximum pressure change during flowing period:	dp_p	kPa	114

Observation Hole:	KLX02	Section no.:	KLX02_2
		Section length:	1145.00-1164.00
Distance r _s [m]:	931.10	max. Drawdown s _p [m]:*	0.03
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	58.4
Pressure in test section before stop of flowing:	p_p	kPa	58.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

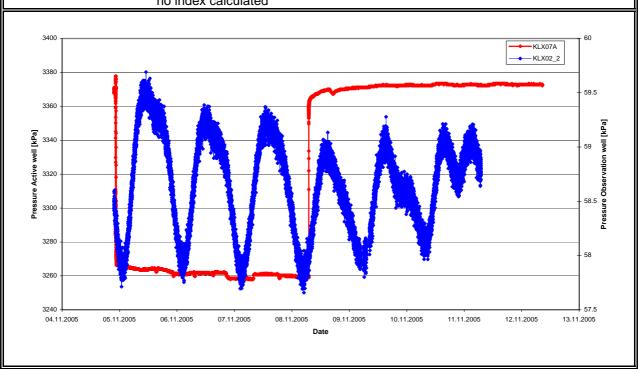
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g.

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p _i	kl	Pa 3374
Pressure in test section	n before stop of flowing:	p_p	kl	Pa 3260
Maximum pressure cha	ange during flowing period:	dp_p	kl	Pa 114
Observation Hole:	KLX02	Section no.:		KLX02_3

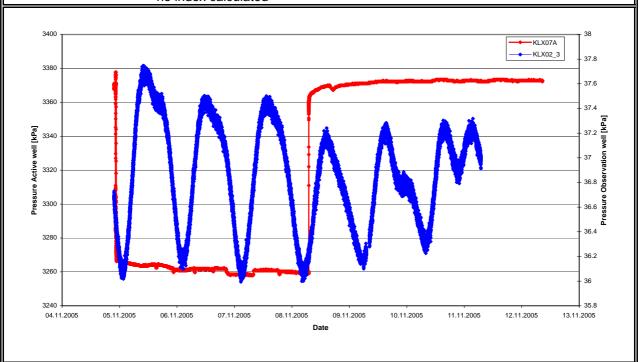
Observation Hole:	KLX02	Section no.:	KLX02_3
		Section length:	718.00-1144.00
Distance r _s [m]:	721.66	max. Drawdown s _p [m]:*	0.02
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	36.5
Pressure in test section before stop of flowing:	p_p	kPa	36.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment



Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-45	5.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 0	8:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 0	7:03
Flow Rate Q _p [m ³ /s]:	3.02E-04				
Pressure data		Nomenclature	Unit	Value	
Pressure in test section	before start of flowing:	p _i	k	Pa 3	3374

			141.140.0.4
Maximum pressure change during flowing period:	dp_p	kPa	114
Pressure in test section before stop of flowing:	p_p	kPa	3260
Pressure in test section before start of flowing:	p _i	kPa	3374

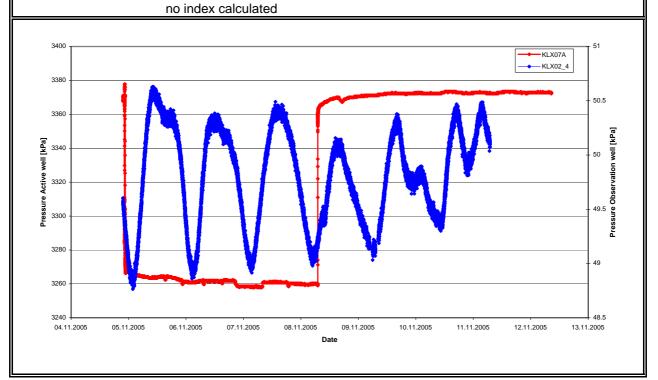
Observation Hole:	KLX02	Section no.:	KLX02_4
		Section length:	495.00-717.00
Distance r _s [m]:	443.26	max. Drawdown s _p [m]:*	0.01
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	49.4
Pressure in test section before stop of flowing:	p_p	kPa	49.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [n	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:	(08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	nge during flowing period:	dp_p	kPa	114
Observation Hole:	KLX02	Section no.:		KLX02_5
		Section length:		452.00-494.00
Distance r _s [m]:	353.61	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV			

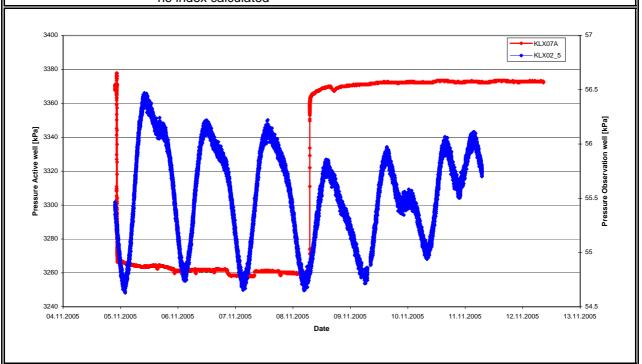
Pressure data **Nomenclature** Unit Value Pressure in test section before start of flowing: kPa 55.2 p_{i} 55.0 Pressure in test section before stop of flowing: kPa p_p Maximum pressure change during flowing period:* dp_p kPa 0.2

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

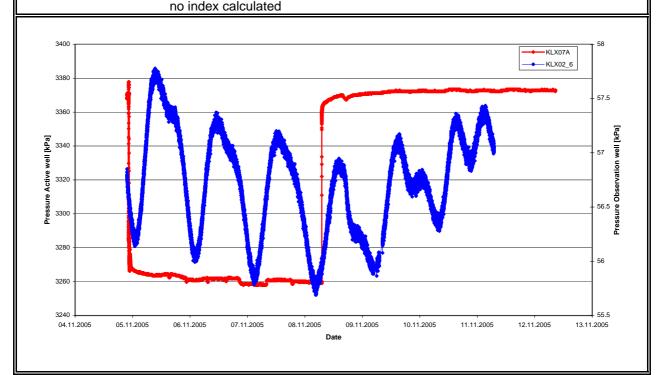
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment



Activityplan No.	AP PS 400-05-045					
Pumping Hole:	KLX07A		Pumping Section [[m bToC]:		335.00-455.00
Test Start:	04.11.2005 21:35		Test Stop:		•	12.11.2005 08:36
Pump Start:	04.11.2005 22:33		Pump Stop:		(08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p_{i}		kPa	3374
Pressure in test section before stop of flowing:			p_p		kPa	3260
Maximum pressure cha	nge during flowing period	d:	dp_p		kPa	114
Observation Hole:	KLX02		Section no.:			KLX02_6
			Section length:			348.00-451.00
Distance r _s [m]:	317.84		max. Drawdown s	_p [m]:*		0.06
Response time dt _L [s]:	#NV					
Pressure data			Nomenclature	Unit		Value
Pressure in test section	before start of flowing:		p _i		kPa	57.8
Pressure in test section	before stop of flowing:		p_p		kPa	57.2
Maximum pressure cha	nge during flowing period	d:*	dp _p		kPa	0.6
Normalized response ti	me with respect to the dis	stance				
Index 1	r _s ²/dt _L (m²/s):	#NV				
Normalized drawdown	with respect to pumping f	low rate				
Index 2	s_p/Q_p (s/m ²):	#NV				
$(s_p/Q_p)*In(r_s/r_0) (s/m^2):$		#NV				
					*	see comment
Comment:	response due to pumpi	-				
	no response according	to SKB	MD 330.003 (s _p <	0.1 m)		
	no index calculated					



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure cha	inge during flowing period:	dp_p	kPa	114
Observation Hole:	KLX02	Section no.:		KLX02_7
		Section length:		209.00-347.00
Distance r _s [m]:	293.03	max. Drawdown s _p	[m]:*	0.15
Response time dt _L [s]:	#NV			
İ				

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	60.8
Pressure in test section before stop of flowing:	p_p	kPa	59.3
Maximum pressure change during flowing period:*	dp_p	kPa	1.5

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): 506.31

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 2875.97

3240

04.11.2005

05.11.2005

06.11.2005

(3p/4p) III(1g/10) (3/III).

07.11.2005

Comment: response due to pumping in source

pressure changes mainly influenced by natural fluctuations (e.g. tidal effects) no index 1 calculated

* see comment

- 57.5

13.11.2005

12.11.2005

3380

| Feed and the second of
08.11.2005

Date

09.11.2005

10.11.2005

11.11.2005

Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop: 12.11.2005 0		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section before stop of flowing:		p_p	kPa	3260
Maximum pressure change during flowing period:		dp_p	kPa	114
Observation Hole:	KLX02	Section no.:		KLX02_8
		Section length:		202.95-208.00
Distance r _s [m]:	301.92	max. Drawdown s _p	[m]:*	0.11
Response time dt_L [s]:	#NV	·		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	75.9
Pressure in test section before stop of flowing:		p_p	kPa	74.8
Maximum pressure change during flowing period:*		dp _p	kPa	1.1
i				

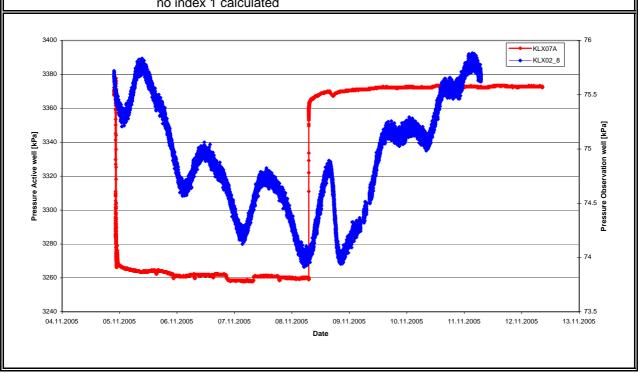
Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 371.29

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 2120.14

* see comment

Comment:

response due to pumping in source pressure changes mainly influenced by natural fluctuations (e.g. tidal effects)



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.02E-04		
Pump Start:	04.11.2005 22:33	Pump Stop:	08.11.2005 07:03
Test Start:	04.11.2005 21:35	Test Stop:	12.11.2005 08:36
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	335.00-455.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	3374
Pressure in test section before stop of flowing:	p_p	kPa	3260
Maximum pressure change during flowing period:	dp_p	kPa	114

Observation Hole:	KLX04	Section no.:	KLX04_1
		Section length:	898.00-1000.00
Distance r _s [m]:	1367.48	max. Drawdown s _p [m]:*	0.02
Response time dt. [s]:	#NV		

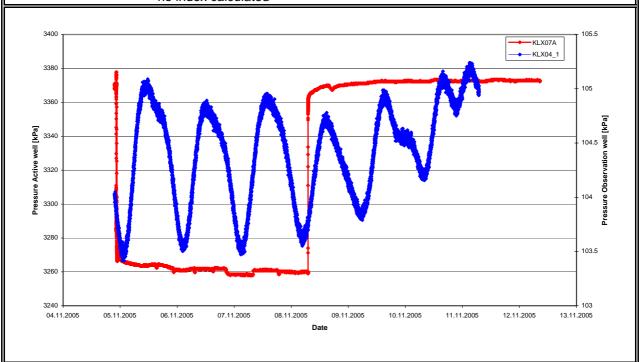
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	103.9
Pressure in test section before stop of flowing:	p_p	kPa	103.7
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	a 3374
Pressure in test section	before stop of flowing:	p_p	kPa	a 3260
Maximum pressure cha	inge during flowing period:	dp_p	kPa	a 114
Observation Hole:	KLX04	Section no.:		KLX04_2

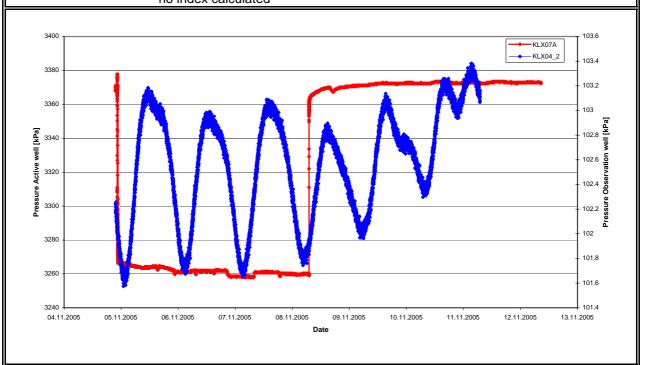
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	102.1
Pressure in test section before stop of flowing:	p_p	kPa	101.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	k	Pa 3374
Pressure in test section	before stop of flowing:	p_p	k	Pa 3260
Maximum pressure cha	inge during flowing period:	dp_p	k	Pa 114
01	1/1 1/0 4	0 "		141 140 4 6

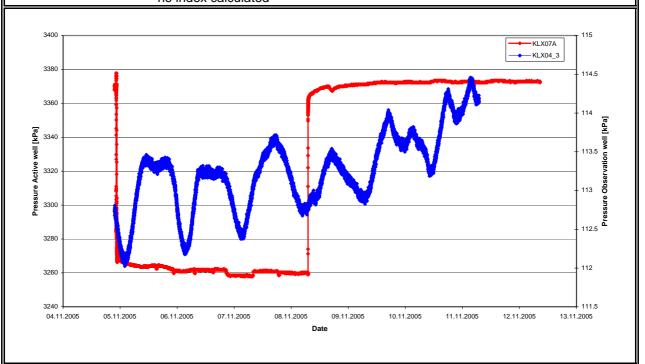
Observation Hole:	KLX04	Section no.:	KLX04_3
		Section length:	686.00-869.00
Distance r _s [m]:	1304.87	max. Drawdown s _p [m]:*	0.02
Response time dt_L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	112.6
Pressure in test section before stop of flowing:	p_p	kPa	112.8
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2):$ #NV

* see comment



Activityplan No.	AP PS 400-05-045			
Pumping Hole: KLX07A		Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 3374
Pressure in test section before stop of flowing:		p_p	kPa	a 3260
Maximum pressure change during flowing period:		dp_p	kPa	a 114
Observation Hole: KLX04		Section no.:		KLX04_4
		Section length:		531.00-685.00
Distance r _s [m]: 1258.31		max. Drawdown s _p	[m]:*	0.04
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p_{i}	kPa	a 111.8

Pressure in test section before stop of flowing:

Maximum pressure change during flowing period:*

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

112.2

0.4

kPa

kPa

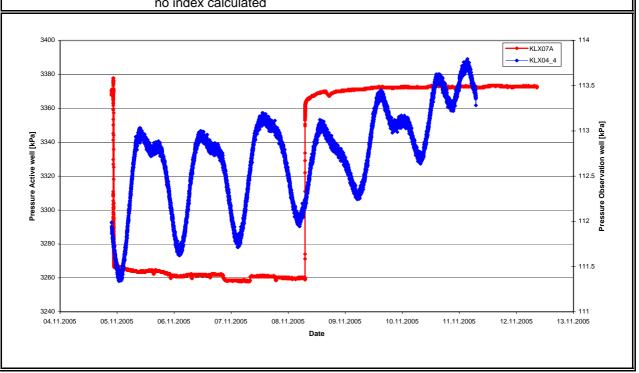
 p_{p}

 dp_p

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole: KLX07A		Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section before stop of flowing:		p_p	kPa	3260
Maximum pressure change during flowing period:		dp_p	kPa	114
Observation Hole:	Observation Hole: KLX04 Section no.:			KLX04_5
		Section length:		507.00-530.00
Distance r _s [m]:	1241.13	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	114.7
Pressure in test section before stop of flowing:		p_p	kPa	114.9

Maximum pressure change during flowing period:*

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

0.2

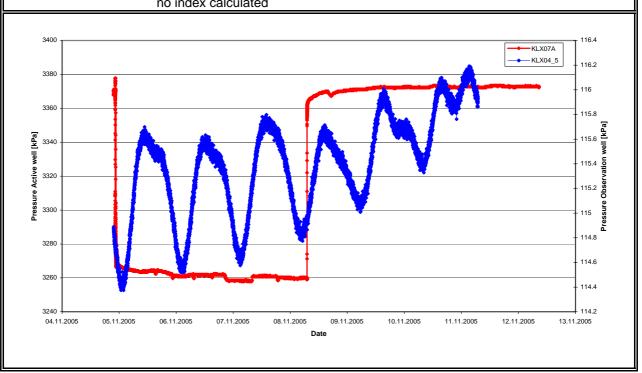
Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

 dp_p

kPa



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section before stop of flowing:		p_p	kPa	3260
Maximum pressure change during flowing period:		dp_p	kPa	114
Observation Hole: KLX04		Section no.:		KLX04_6
		Section length:		231.00-506.00
Distance r _s [m]:	1224.52	max. Drawdown s _p	[m]:*	0.04
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	112.8
Pressure in test section before stop of flowing:		p_p	kPa	113.2
Maximum pressure change during flowing period:*		dp _p	kPa	0.4

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): #NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

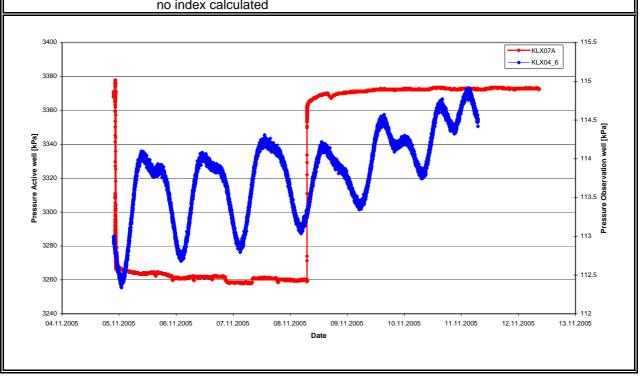
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	Pressure in test section before stop of flowing:		kPa	3260
Maximum pressure cha	ange during flowing period:	dp_p	kPa	114
Observation Hole:	KLX04	Section no.:		KLX04_7
		Section length:		163.00-230.00
Distance r _s [m]:	1224.05	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	D:	kPa	115.2

Pressure in test section before start of flowing: kPa 115.2 Pressure in test section before stop of flowing: kPa 115.3 p_{p} Maximum pressure change during flowing period:* dp_p kPa 0.1

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

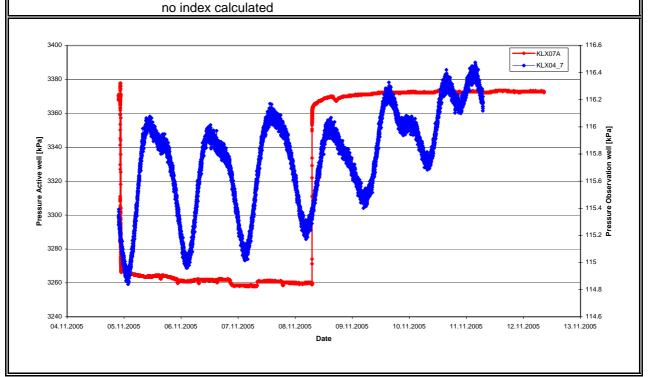
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	Pumping Hole: KLX07A		n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 3374
Pressure in test section before stop of flowing:		p_p	kPa	a 3260
Maximum pressure change during flowing period:		dp_p	kPa	a 114
Observation Hole:	KLX04	Section no.:		KLX04_8
		Section length:		12.24-162.00
Distance r _s [m]:	1234.59	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV	·		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p _i	kPa	a 119.4
Pressure in test section	n before stop of flowing:	p_p	kPa	a 119.6
Maximum pressure change during flowing period:*		dp _p	kPa	n 0.2

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

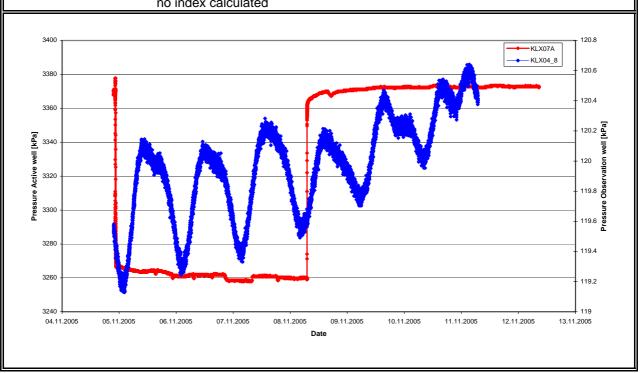
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [ı	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kP	a 3374
Pressure in test section	before stop of flowing:	p_p	kP	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kP	'a 114
Observation Hole:	KLX07B	Section no.:		KLX07B_1
		Section length:		112.00-200.00
Distance r _s [m]:	280.96	max. Drawdown s _p	, [m]:*	0.16
Response time dt _L [s]:	2238			
Pressure data		Nomenclature	Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	64.7
Pressure in test section before stop of flowing:	p_p	kPa	63.1
Maximum pressure change during flowing period:*	dp_p	kPa	1.6

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 35.2

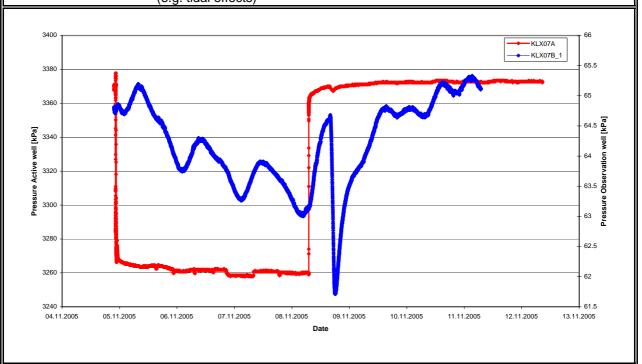
35.27

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 540.06

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3044.99

* see comment

Comment: clear response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects)



Pressure data		Nomenclature	Unit	Value
Response time dt _L [s]:	1852			
Distance r _s [m]:	332.03	max. Drawdown s_p	[m]:*	0.17
		Section length:		49.00-111.00
Observation Hole:	KLX07B	Section no.:		KLX07B_2
Maximum pressure cha	ange during flowing period:	dp_p	kF	Pa 114
Pressure in test section	before stop of flowing:	p_p	kF	Pa 3260
Pressure in test section before start of flowing:		p_{i}	kF	Pa 3374
Pressure data		Nomenclature	Unit	Value
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Test Start:	04.11.2005 21:35	Test Stop:	5.00].	12.11.2005 08:36
Pumping Hole:	KLX07A	Pumping Section [r	n hToCl·	335.00-455.00
Activityplan No.	AP PS 400-05-045			

Pressure in test section before start of flowing: p_{i} kPa 63.9 Pressure in test section before stop of flowing: kPa 62.2 p_{p} Maximum pressure change during flowing period:* dp_p kPa 1.7

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 59.5

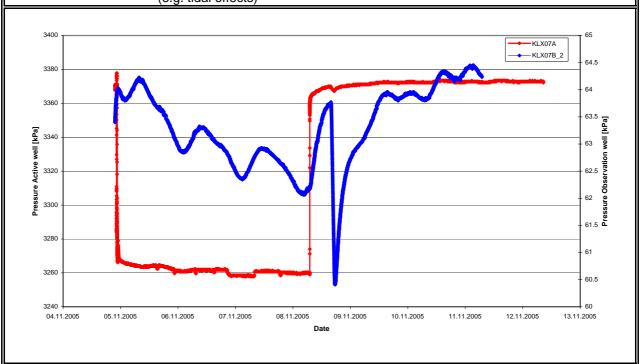
59.53

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 573.82

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3331.13

* see comment

Comment: clear response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects)



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [n	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure char	nge during flowing period:	dp_p	kPa	114
Observation Hole:	KLX07B	Section no.:		KLX07B_3
		Section length:		0.00-48.00
Distance r _s [m]:	375.09	max. Drawdown s _p	[m]:*	0.16
Response time dt _L [s]:	1165	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	64.6
Pressure in test section	Pressure in test section before stop of flowing:		kPa	63.0

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 120.7

Maximum pressure change during flowing period:*

120.77

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 540.06

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3201.04

* see comment

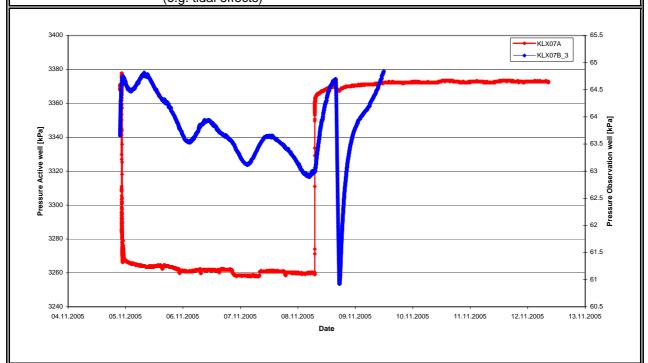
kPa

1.6

 dp_p

Comment: clear response due to pumping in source pressure changes influenced additionally by natural fluctuations

(e.g. tidal effects)



Borehole: KLX07A

APPENDIX 6-4

Index calculation
KLX07A Section 610.00-655.00 m pumped

Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX01	Section no.:	HLX01_1
		Section length:	16.00-100.63
Distance r _s [m]:	1120.93	max. Drawdown s _p [m]:*	0.00
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	62.8
Pressure in test section before stop of flowing:	p_p	kPa	62.8
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

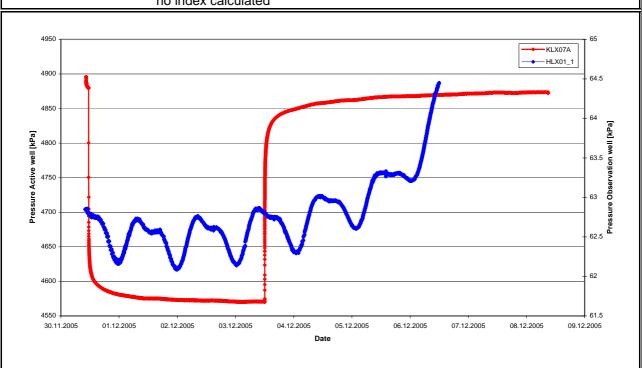
#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX02	Section no.:	HLX02_1
		Section length:	0.6-132.00
Distance r _s [m]:	1959.89	max. Drawdown s _p [m]:*	0.07
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	46.1
Pressure in test section before stop of flowing:	p_p	kPa	45.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.7

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

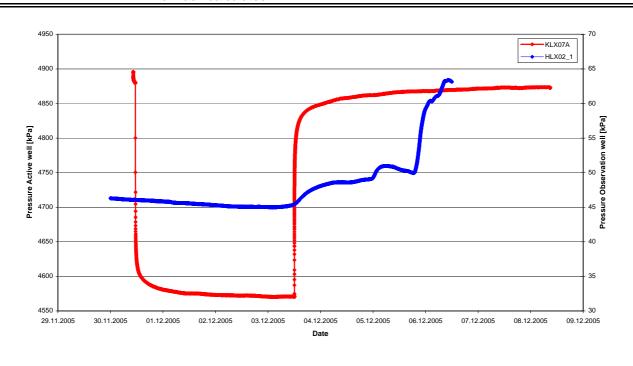
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX06	Section no.:	HLX06_1
		Section length:	1.00-100.00
Distance r _s [m]:	1057.69	max. Drawdown s _p [m]:*	0.03
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	78.0
Pressure in test section before stop of flowing:	p_p	kPa	77.7 0.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

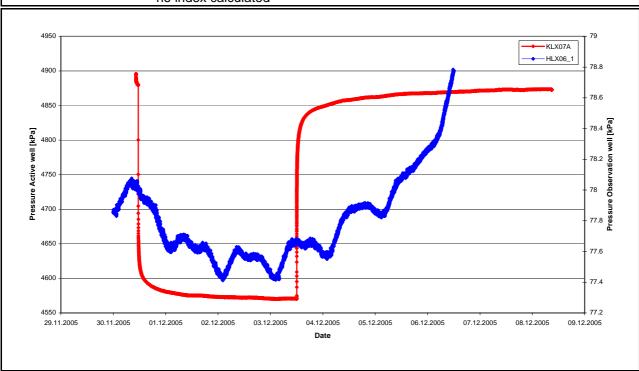
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



AP PS 400-05-045		
KLX07A	Pumping Section [m bToC]:	610.00-655.00
30.11.2005 10:14	Test Stop:	08.12.2005 08:54
30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
2.93E-04		
	KLX07A 30.11.2005 10:14 30.11.2005 11:27	KLX07A Pumping Section [m bToC]: 30.11.2005 10:14 Test Stop: 30.11.2005 11:27 Pump Stop:

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX07	Section no.:	HLX07_1
		Section length:	16.00-100.00
Distance r _s [m]:	1218.57	max. Drawdown s _p [m]:*	0.01
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	55.6
Pressure in test section before stop of flowing:	p_p	kPa	55.7
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

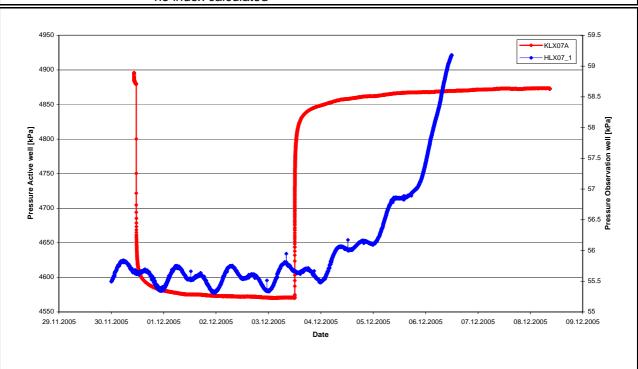
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX10	Section no.:	HLX10_1
		Section length:	3.00-85.00
Distance r _s [m]:	492.34	max. Drawdown s _p [m]:*	0.04
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	50.5
Pressure in test section before stop of flowing:	p_p	kPa	50.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

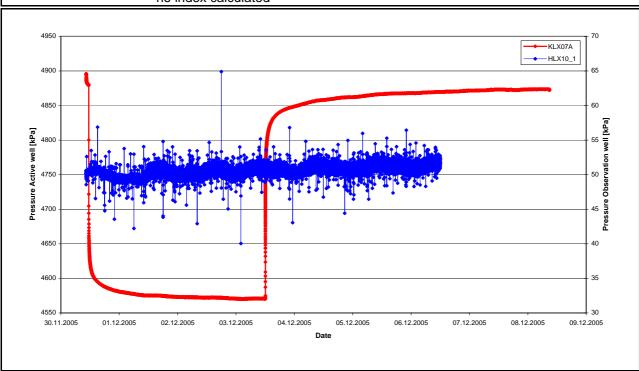
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



AP PS 400-05-045		
KLX07A	Pumping Section [m bToC]:	610.00-655.00
30.11.2005 10:14	Test Stop:	08.12.2005 08:54
30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
2.93E-04		
	KLX07A 30.11.2005 10:14 30.11.2005 11:27	KLX07A Pumping Section [m bToC]: 30.11.2005 10:14 Test Stop: 30.11.2005 11:27 Pump Stop:

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX11	Section no.:	HLX11_1
		Section length:	17.00-70.00
Distance r _s [m]:	543.34	max. Drawdown s _p [m]:*	0.08
Response time dt _i [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	62.5
Pressure in test section before stop of flowing:	p_p	kPa	63.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.8

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

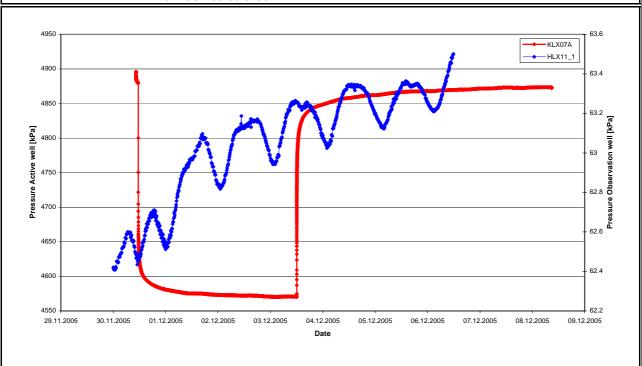
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX11	Section no.:	HLX11_2
		Section length:	6.00-16.00
Distance r _s [m]:	556.45	max. Drawdown s _p [m]:*	0.06
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	61.4
Pressure in test section before stop of flowing:	p_p	kPa	62.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.6

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

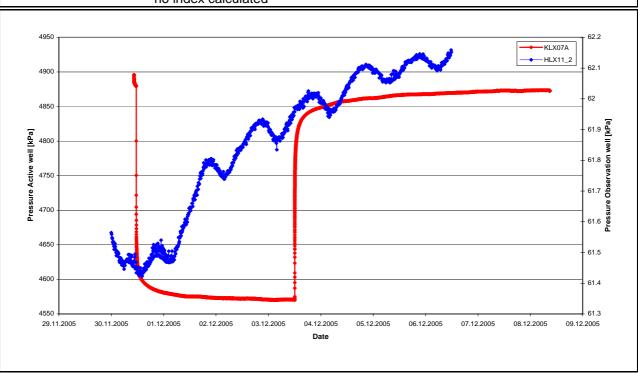
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX13	Section no.:	HLX13_1
		Section length:	11.87-200.02
Distance r _s [m]:	1701.55	max. Drawdown s _p [m]:*	0.02
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	121.0
Pressure in test section before stop of flowing:	p_p	kPa	120.8
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

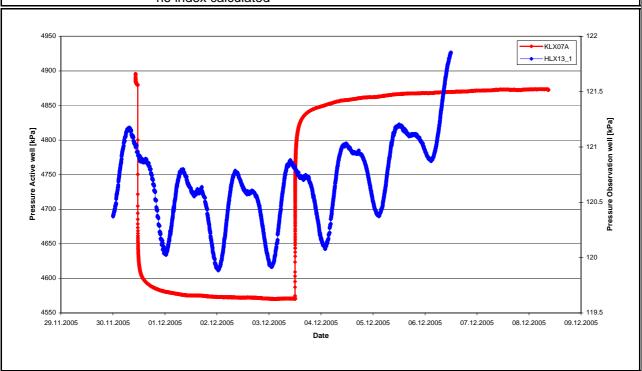
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX14	Section no.:	HLX14_1
		Section length:	11.00-115.90
Distance r _s [m]:	1727.77	max. Drawdown s _p [m]:*	0.02
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	117.8
Pressure in test section before stop of flowing:	p_p	kPa	117.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

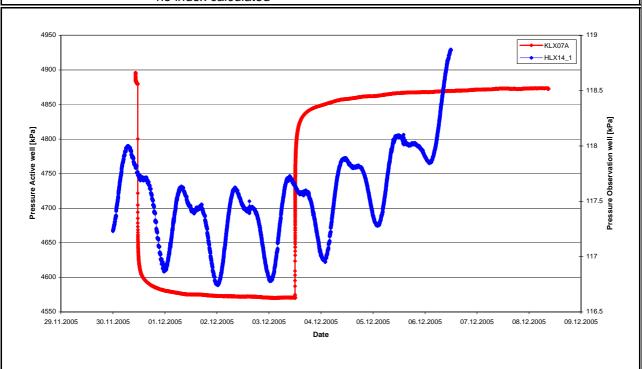
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX21	Section no.:	HLX21_1
		Section length:	81.00-150.00
Distance r _s [m]:	585.94	max. Drawdown s _p [m]:*	0.05
Response time dt_L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	51.7
Pressure in test section before stop of flowing:	p_p	kPa	51.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX21	Section no.:	HLX21_2
		Section length:	9.10-80.00
Distance r _s [m]:	601.98	max. Drawdown s _p [m]:*	0.05
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	50.5
Pressure in test section before stop of flowing:	p_p	kPa	50.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

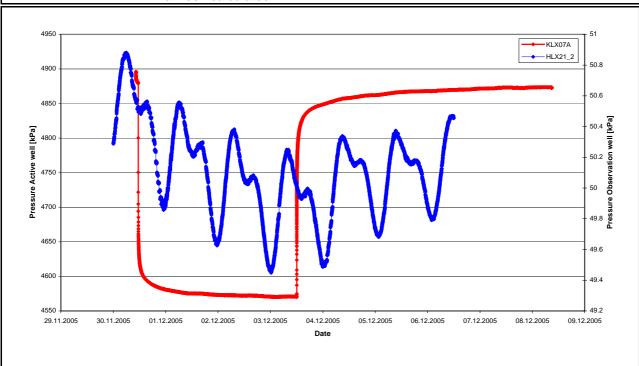
#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX22	Section no.:	HLX22_1
		Section length:	86.00-163.20
Distance r _s [m]:	613.00	max. Drawdown s _p [m]:*	0.05
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	50.4
Pressure in test section before stop of flowing:	p_p	kPa	49.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

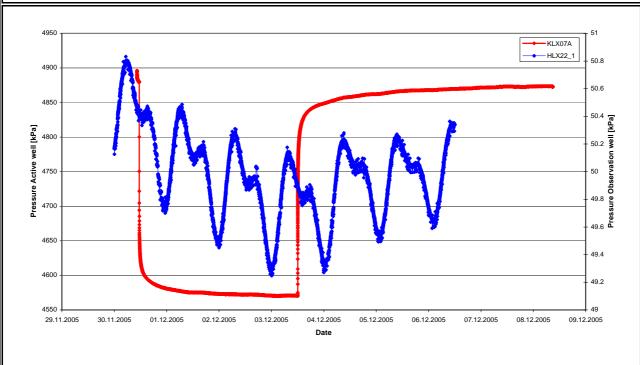
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX22	Section no.:	HLX22_2
		Section length:	9.19-85.00
Distance r _s [m]:	631.00	max. Drawdown s _p [m]:*	0.03
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	37.7
Pressure in test section before stop of flowing:	p_p	kPa	37.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

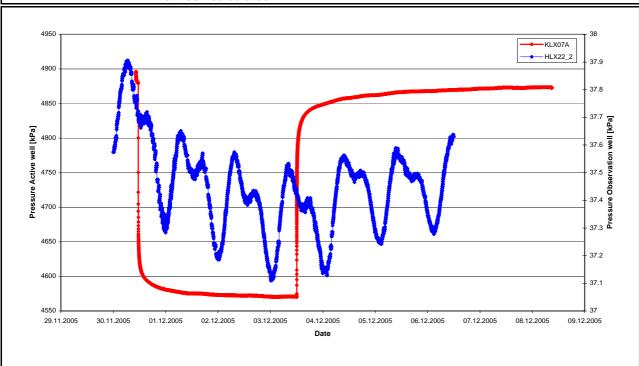
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No. Al	P PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start: 3	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
•	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX23	Section no.:	HLX23_1
		Section length:	61.00-160.20
Distance r _s [m]:	593.69	max. Drawdown s _p [m]:*	0.01
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	98.4
Pressure in test section before stop of flowing:	p_p	kPa	98.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

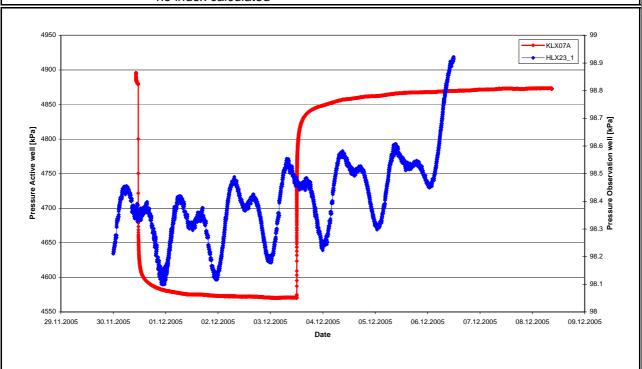
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX23	Section no.:	HLX23_2
		Section length:	6.10-60.00
Distance r _s [m]:	607.81	max. Drawdown s _p [m]:*	0.02
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	96.4
Pressure in test section before stop of flowing:	p_p	kPa	96.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

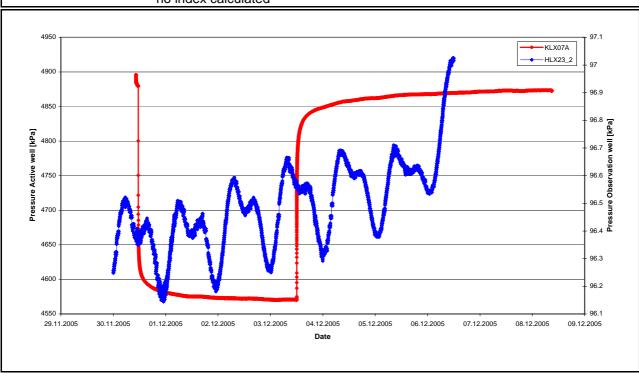
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



AP PS 400-05-045		
KLX07A	Pumping Section [m bToC]:	610.00-655.00
30.11.2005 10:14	Test Stop:	08.12.2005 08:54
30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
2.93E-04		
	KLX07A 30.11.2005 10:14 30.11.2005 11:27	KLX07A Pumping Section [m bToC]: 30.11.2005 10:14 Test Stop: 30.11.2005 11:27 Pump Stop:

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX24	Section no.:	HLX24_1
		Section length:	41.00-175.20
Distance r _s [m]:	588.96	max. Drawdown s _p [m]:*	0.01
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	98.5
Pressure in test section before stop of flowing:	p_p	kPa	98.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX24	Section no.:	HLX24_2
		Section length:	9.10-40.00
Distance r _s [m]:	630.30	max. Drawdown s _p [m]:*	0.00
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	100.1
Pressure in test section before stop of flowing:	p_p	kPa	100.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

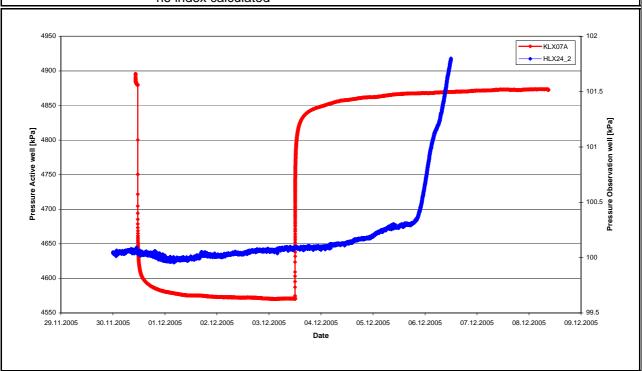
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX25	Section no.:	HLX25_1
		Section length:	61.00-202.50
Distance r _s [m]:	1578.84	max. Drawdown s _p [m]:*	0.01
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	111.9
Pressure in test section before stop of flowing:	p_p	kPa	111.8 0.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

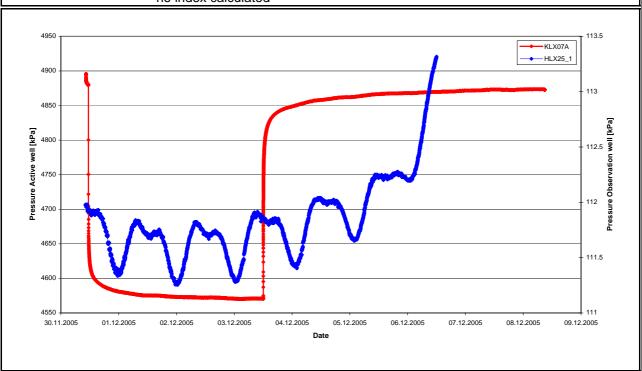
#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX25	Section no.:	HLX25_2
		Section length:	6.12-60.00
Distance r _s [m]:	1588.80	max. Drawdown s _p [m]:*	0.01
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	112.1
Pressure in test section before stop of flowing:	p_p	kPa	112.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

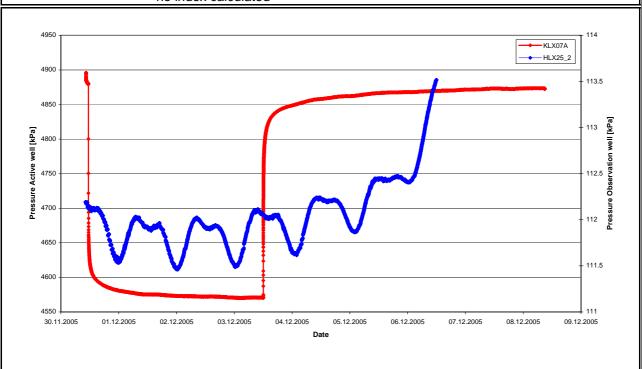
#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX30	Section no.:	HLX30_1
		Section length:	101.00-163.40
Distance r _s [m]:	1291.59	max. Drawdown s _p [m]:*	0.02
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	107.3
Pressure in test section before stop of flowing:	p_p	kPa	107.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

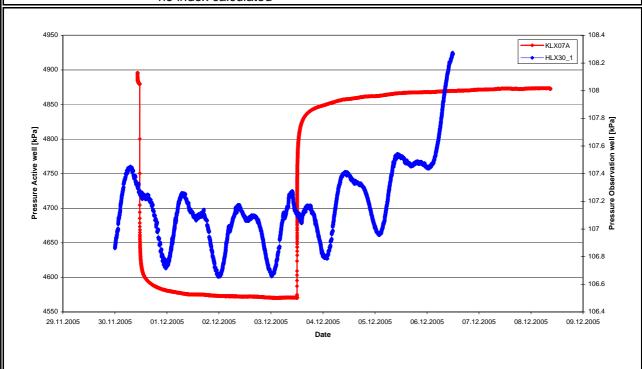
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX30	Section no.:	HLX30_2
		Section length:	9.10-100.00
Distance r _s [m]:	1318.16	max. Drawdown s _p [m]:*	0.01
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	106.8
Pressure in test section before stop of flowing:	p_p	kPa	106.7
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

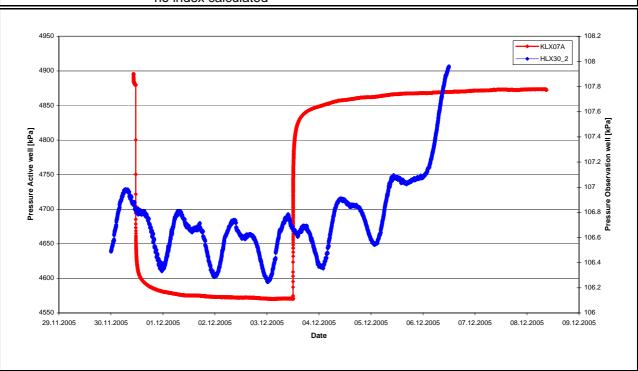
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX31	Section no.:	HLX31_1
		Section length:	9.10-133.20
Distance r _s [m]:	1249.42	max. Drawdown s _p [m]:*	0.01
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	107.3
Pressure in test section before stop of flowing:	p_p	kPa	107.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

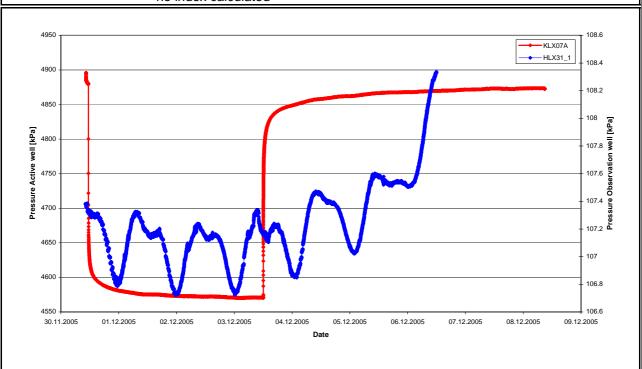
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX33	Section no.:	HLX33_1
		Section length:	31.00-202.10
Distance r _s [m]:	758.60	max. Drawdown s _p [m]:*	0.00
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	100.3
Pressure in test section before stop of flowing:	p_p	kPa	100.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

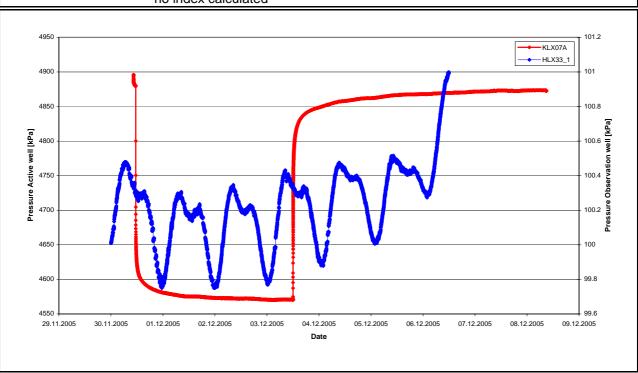
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX33	Section no.:	HLX33_2
		Section length:	9.10-30.00
Distance r _s [m]:	834.31	max. Drawdown s _p [m]:*	0.00
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	100.1
Pressure in test section before stop of flowing:	p_p	kPa	100.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

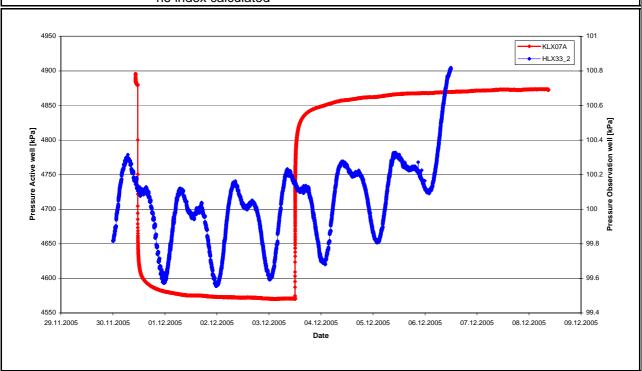
#NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



AP PS 400-05-045		
KLX07A	Pumping Section [m bToC]:	610.00-655.00
30.11.2005 10:14	Test Stop:	08.12.2005 08:54
30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
2.93E-04		
	KLX07A 30.11.2005 10:14 30.11.2005 11:27	KLX07A Pumping Section [m bToC]: 30.11.2005 10:14 Test Stop: 30.11.2005 11:27 Pump Stop:

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX34	Section no.:	HLX34_1
		Section length:	9.00-151.80
Distance r _s [m]:	1988.83	max. Drawdown s _p [m]:*	0.00
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	134.2
Pressure in test section before stop of flowing:	p_p	kPa	134.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Index 1 r_s^2/dt_L (m²/s): #NV

Normalized drawdown with respect to pumping flow rate

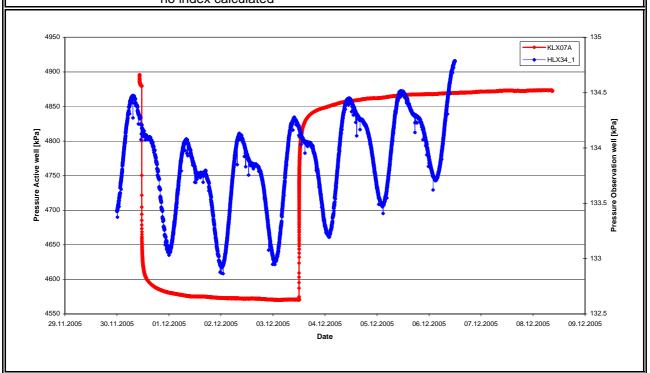
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX35	Section no.:	HLX35_1
		Section length:	65.00-151.50
Distance r _s [m]:	1962.20	max. Drawdown s _p [m]:*	0.01
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	133.0
Pressure in test section before stop of flowing:	p_p	kPa	132.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

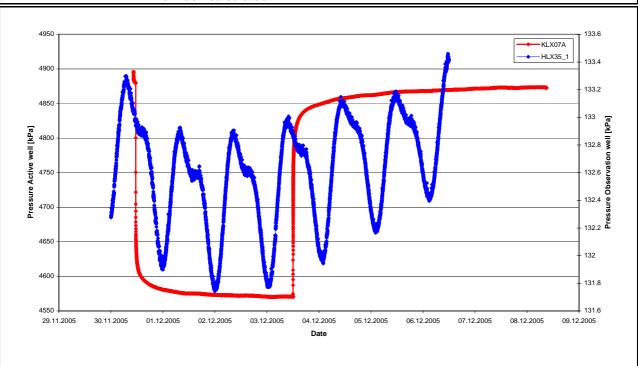
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	HLX35	Section no.:	HLX35_2
		Section length:	6.00-64.00
Distance r _s [m]:	2035.45	max. Drawdown s _p [m]:*	0.01
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	114.4
Pressure in test section before stop of flowing:	p_p	kPa	114.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

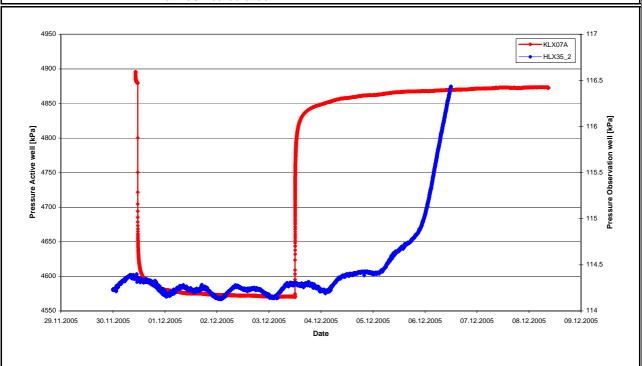
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX01	Section no.:	KLX01_1
		Section length:	705.00-1077.99
Distance r _s [m]:	1426.23	max. Drawdown s _p [m]:*	0.09
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	-19.1
Pressure in test section before stop of flowing:	p_p	kPa	-20.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.9

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

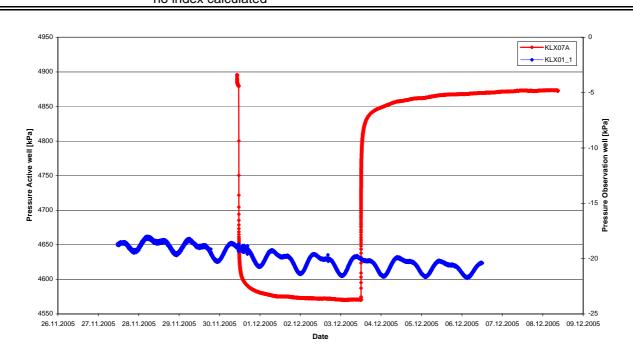
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX01	Section no.:	KLX01_2
		Section length:	191.00-704.00
Distance r _s [m]:	1350.09	max. Drawdown s _p [m]:*	0.03
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	55.3
Pressure in test section before stop of flowing:	p_p	kPa	55.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

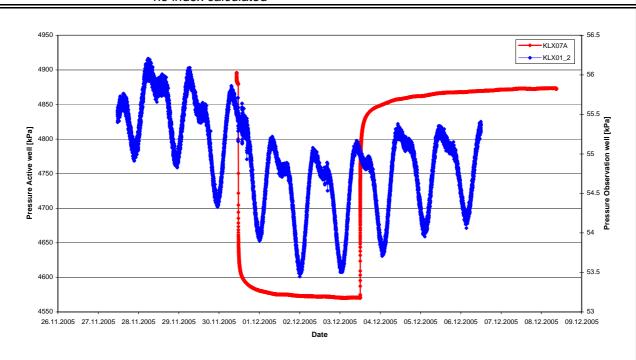
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX01	Section no.:	KLX01_3
		Section length:	171.00-190.00
Distance r _s [m]:	1372.14	max. Drawdown s _p [m]:*	0.03
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	65.7
Pressure in test section before stop of flowing:	p_p	kPa	65.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

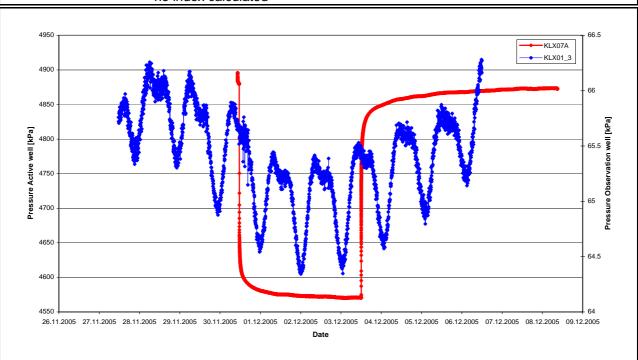
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX01	Section no.:	KLX01_4
		Section length:	1.00-170.00
Distance r _s [m]:	1391.97	max. Drawdown s _p [m]:*	0.01
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	140.3
Pressure in test section before stop of flowing:	p_p	kPa	140.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

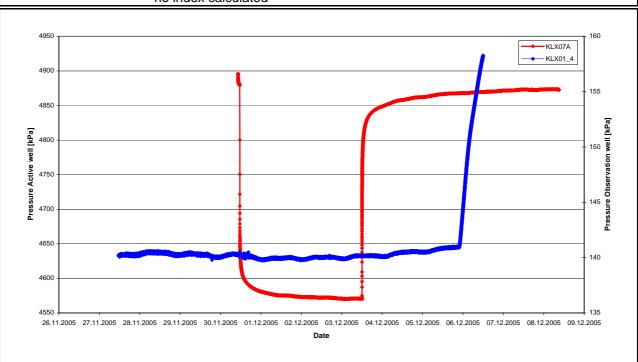
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



AP PS 400-05-045		
KLX07A	Pumping Section [m bToC]:	610.00-655.00
30.11.2005 10:14	Test Stop:	08.12.2005 08:54
30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
2.93E-04		
	KLX07A 30.11.2005 10:14 30.11.2005 11:27	KLX07A Pumping Section [m bToC]: 30.11.2005 10:14 Test Stop: 30.11.2005 11:27 Pump Stop:

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_1
		Section length:	1165.00-1700.00
Distance r _s [m]:	1106.44	max. Drawdown s _p [m]:*	0.05
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	77.3
Pressure in test section before stop of flowing:	p_p	kPa	76.8
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

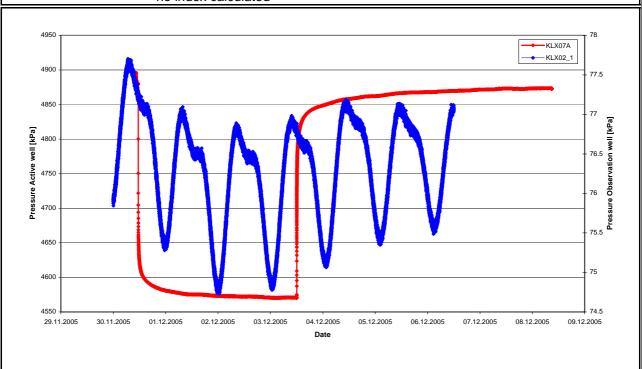
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_2
		Section length:	1145.00-1164.00
Distance r _s [m]:	860.97	max. Drawdown s _p [m]:*	0.07
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	59.8
Pressure in test section before stop of flowing:	p_p	kPa	59.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.7

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

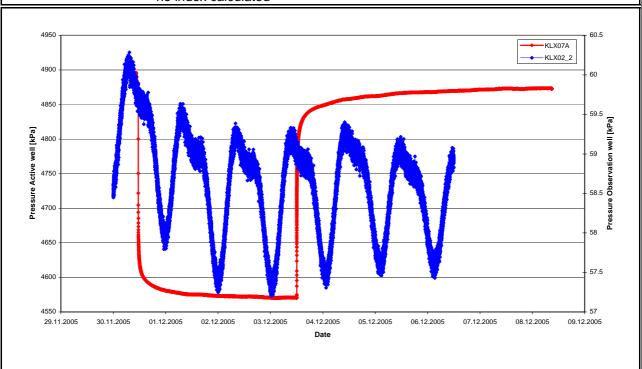
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_3
		Section length:	718.00-1144.00
Distance r _s [m]:	684.20	max. Drawdown s _p [m]:*	0.08
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	37.4
Pressure in test section before stop of flowing:	p_p	kPa	36.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.8

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

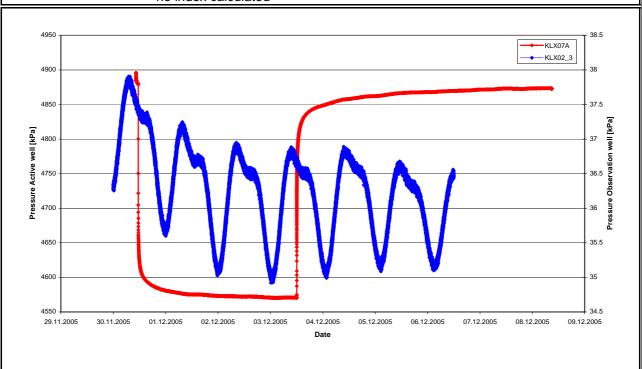
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



AP PS 400-05-045		
KLX07A	Pumping Section [m bToC]:	610.00-655.00
30.11.2005 10:14	Test Stop:	08.12.2005 08:54
30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
2.93E-04		
	KLX07A 30.11.2005 10:14 30.11.2005 11:27	KLX07A Pumping Section [m bToC]: 30.11.2005 10:14 Test Stop: 30.11.2005 11:27 Pump Stop:

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_4
		Section length:	495.00-717.00
Distance r _s [m]:	500.47	max. Drawdown s _p [m]:*	0.02
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	51.6
Pressure in test section before stop of flowing:	p_p	kPa	51.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

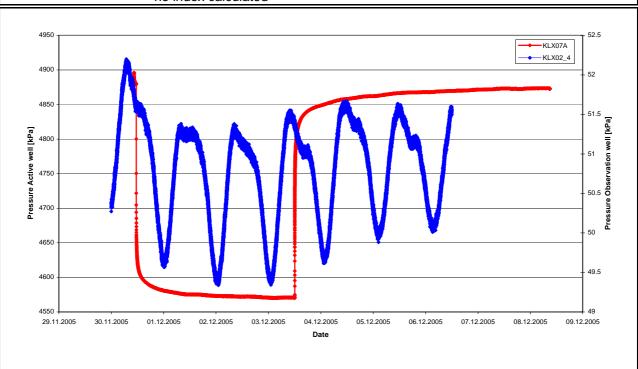
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_5
		Section length:	452.00-494.00
Distance r _s [m]:	472.13	max. Drawdown s _p [m]:*	0.03
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	57.2
Pressure in test section before stop of flowing:	p_p	kPa	56.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

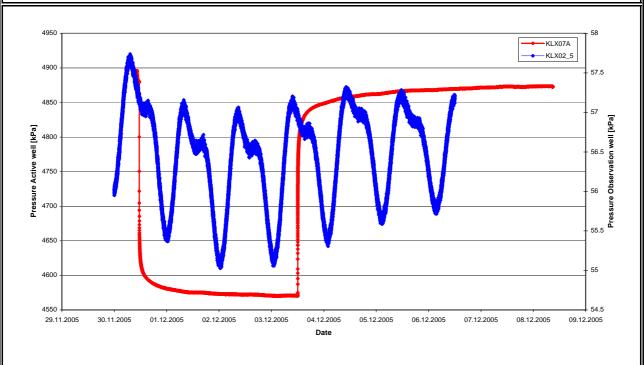
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_6
		Section length:	348.00-451.00
Distance r _s [m]:	472.57	max. Drawdown s _p [m]:*	0.00
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	57.9
Pressure in test section before stop of flowing:	p_p	kPa	57.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.0

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

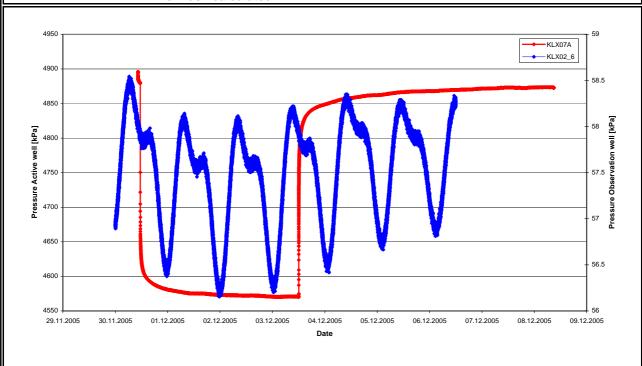
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_7
		Section length:	209.00-347.00
Distance r _s [m]:	499.06	max. Drawdown s _p [m]:*	0.06
Response time dt _∟ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	59.6
Pressure in test section before stop of flowing:	p_p	kPa	60.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.6

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

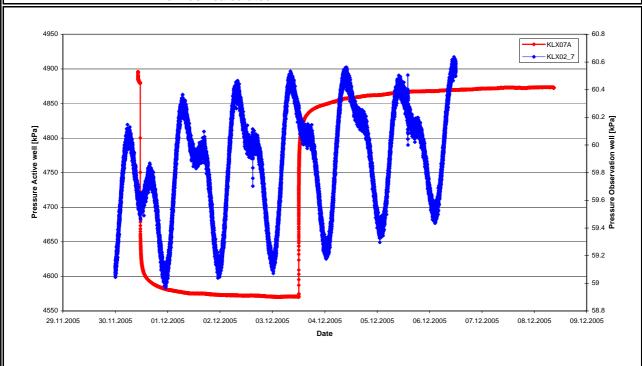
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX02	Section no.:	KLX02_8
		Section length:	202.95-208.00
Distance r _s [m]:	528.13	max. Drawdown s _p [m]:*	0.09
Response time dt _i [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	74.7
Pressure in test section before stop of flowing:	p_p	kPa	75.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.9

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

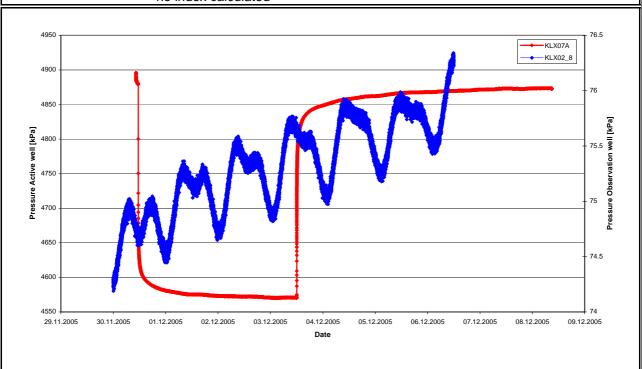
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX04	Section no.:	KLX04_1
		Section length:	898.00-1000.00
Distance r _s [m]:	1387.15	max. Drawdown s _p [m]:*	0.04
Response time dt ₁ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	107.7
Pressure in test section before stop of flowing:	p_p	kPa	107.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

Index 1 r_s^2

 $r_s^2/dt_L (m^2/s)$: #NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

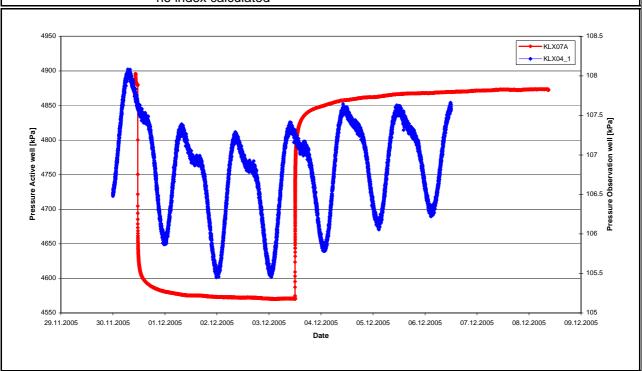
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX04	Section no.:	KLX04_2
		Section length:	870.00-897.00
Distance r _s [m]:	1370.19	max. Drawdown s _p [m]:*	0.04
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	105.8
Pressure in test section before stop of flowing:	p_p	kPa	105.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

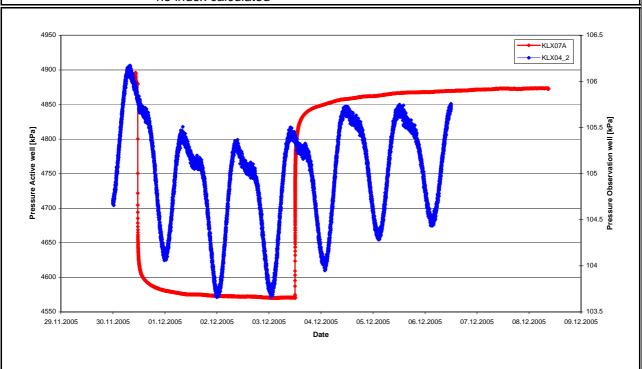
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX04	Section no.:	KLX04_3
		Section length:	686.00-869.00
Distance r _s [m]:	1347.72	max. Drawdown s _p [m]:*	0.03
Response time dt _∟ [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	115.9
Pressure in test section before stop of flowing:	p_p	kPa	115.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 r_s^2/dt_L (m²/s):

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

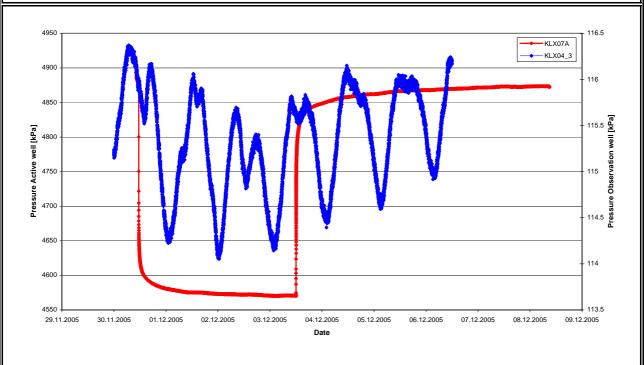
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX04	Section no.:	KLX04_4
		Section length:	531.00-685.00
Distance r _s [m]:	1324.85	max. Drawdown s _p [m]:*	0.03
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	114.7
Pressure in test section before stop of flowing:	p_p	kPa	114.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

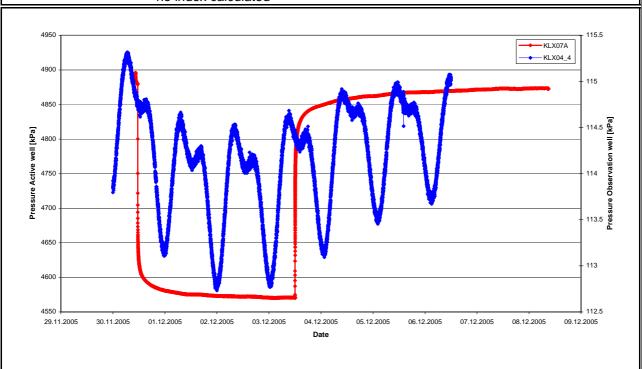
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX04	Section no.:	KLX04_5
		Section length:	507.00-530.00
Distance r _s [m]:	1320.25	max. Drawdown s _p [m]:*	0.02
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	116.8
Pressure in test section before stop of flowing:	p_p	kPa	116.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

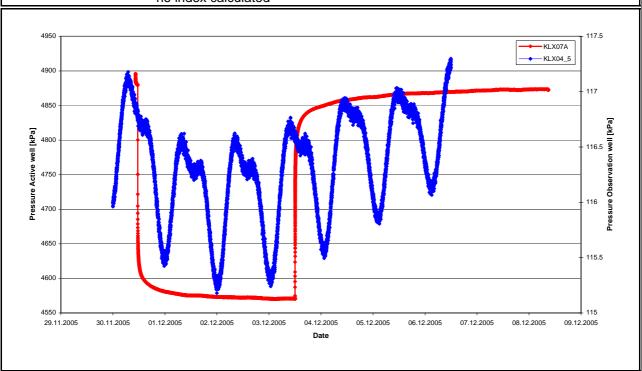
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	610.00-655.00
Test Start:	30.11.2005 10:14	Test Stop:	08.12.2005 08:54
Pump Start:	30.11.2005 11:27	Pump Stop:	03.12.2005 12:03
Flow Rate Q _p [m ³ /s]:	2.93E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	4880
Pressure in test section before stop of flowing:	p_p	kPa	4571
Maximum pressure change during flowing period:	dp_p	kPa	309

Observation Hole:	KLX04	Section no.:	KLX04_6
		Section length:	231.00-506.00
Distance r _s [m]:	1324.13	max. Drawdown s _p [m]:*	0.03
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	115.9
Pressure in test section before stop of flowing:	p_p	kPa	115.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Index 1

 $r_s^2/dt_L (m^2/s)$:

#NV

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

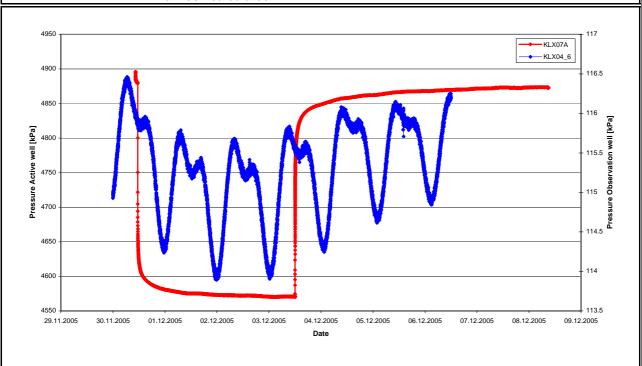
#NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	3374
Pressure in test section	Pressure in test section before stop of flowing:		kPa	3260
Maximum pressure cha	ange during flowing period:	dp_p	kPa	114
Observation Hole:	KLX04	Section no.:		KLX04_7
		Section length:		163.00-230.00
Distance r _s [m]:	1224.05	max. Drawdown s _p	[m]:*	0.01
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	D:	kPa	115.2

Pressure in test section before start of flowing: kPa 115.2 Pressure in test section before stop of flowing: kPa 115.3 p_{p} Maximum pressure change during flowing period:* dp_p kPa 0.1

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

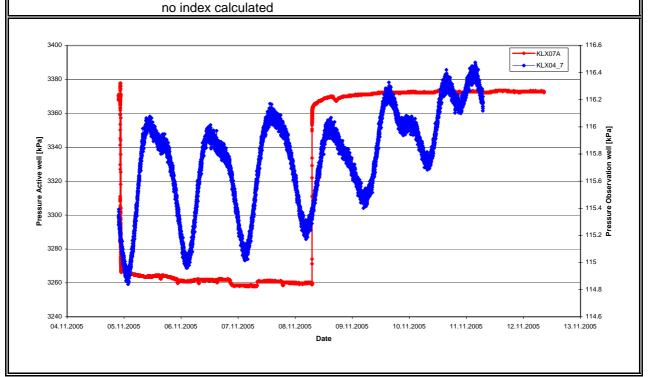
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole: KLX07A		Pumping Section [r	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 3374
Pressure in test section before stop of flowing:		p_p	kPa	a 3260
Maximum pressure change during flowing period:		dp_p	kPa	a 114
Observation Hole:	KLX04	Section no.:		KLX04_8
		Section length:		12.24-162.00
Distance r _s [m]:	1234.59	max. Drawdown s _p	[m]:*	0.02
Response time dt _L [s]:	#NV	·		
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	a 119.4
Pressure in test section	n before stop of flowing:	p_p	kPa	a 119.6
Maximum pressure change during flowing period:*		dp _p	kPa	n 0.2

Normalized drawdown with respect to pumping flow rate

Index 2

 s_p/Q_p (s/m²):

#NV

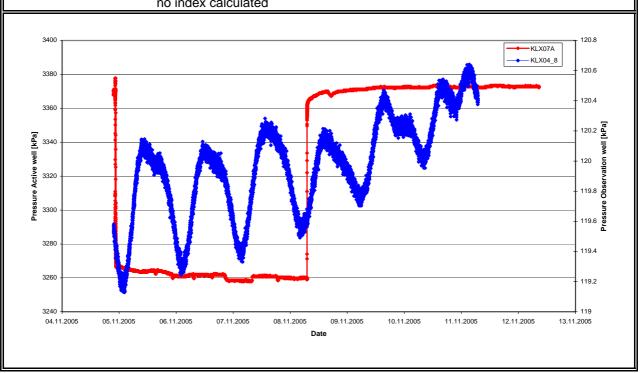
 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment:

no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [ı	m bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kP	a 3374
Pressure in test section	Pressure in test section before stop of flowing:		kP	a 3260
Maximum pressure cha	nge during flowing period:	dp_p	kP	'a 114
Observation Hole:	KLX07B	Section no.:		KLX07B_1
		Section length:		112.00-200.00
Distance r _s [m]:	280.96	max. Drawdown s _p	, [m]:*	0.16
Response time dt _L [s]:	2238			
Pressure data		Nomenclature	Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	64.7
Pressure in test section before stop of flowing:	p_p	kPa	63.1
Maximum pressure change during flowing period:*	dp_p	kPa	1.6

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 35.2

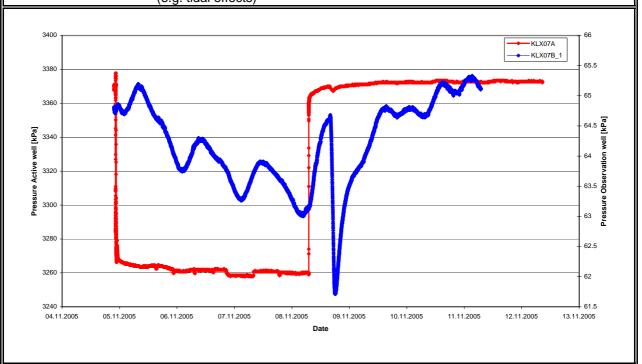
35.27

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 540.06

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3044.99

* see comment

Comment: clear response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects)



Pressure data		Nomenclature	Unit	Value
Response time dt _L [s]:	1852			
Distance r _s [m]:	332.03	max. Drawdown s_p	[m]:*	0.17
		Section length:		49.00-111.00
Observation Hole:	KLX07B	Section no.:		KLX07B_2
Maximum pressure cha	ange during flowing period:	dp_p	kF	Pa 114
Pressure in test section	before stop of flowing:	p_p	kF	Pa 3260
Pressure in test section before start of flowing:		p_{i}	kF	Pa 3374
Pressure data		Nomenclature	Unit	Value
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Test Start:	04.11.2005 21:35	Test Stop:	5.00].	12.11.2005 08:36
Pumping Hole:	KLX07A	Pumping Section [r	n hToCl·	335.00-455.00
Activityplan No.	AP PS 400-05-045			

Pressure in test section before start of flowing: p_{i} kPa 63.9 Pressure in test section before stop of flowing: kPa 62.2 p_{p} Maximum pressure change during flowing period:* dp_p kPa 1.7

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 59.5

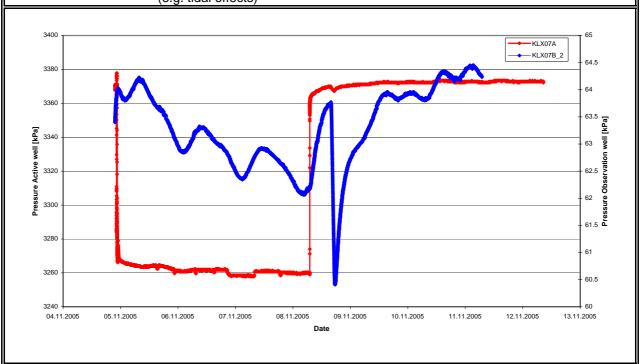
59.53

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 573.82

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3331.13

* see comment

Comment: clear response due to pumping in source pressure changes influenced additionally by natural fluctuations (e.g. tidal effects)



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [n	n bToC]:	335.00-455.00
Test Start:	04.11.2005 21:35	Test Stop:		12.11.2005 08:36
Pump Start:	04.11.2005 22:33	Pump Stop:		08.11.2005 07:03
Flow Rate Q _p [m ³ /s]:	3.02E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p_{i}	kPa	3374
Pressure in test section	before stop of flowing:	p_p	kPa	3260
Maximum pressure char	nge during flowing period:	dp_p	kPa	114
Observation Hole:	KLX07B	Section no.:		KLX07B_3
		Section length:		0.00-48.00
Distance r _s [m]:	375.09	max. Drawdown s _p	[m]:*	0.16
Response time dt _L [s]:	1165	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	before start of flowing:	p _i	kPa	64.6
Pressure in test section before stop of flowing:		p_p	kPa	63.0

Normalized response time with respect to the distance Index 1 r_s^2/dt_L (m²/s): 120.7

Maximum pressure change during flowing period:*

120.77

Normalized drawdown with respect to pumping flow rate s_p/Q_p (s/m²): Index 2 540.06

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: 3201.04

* see comment

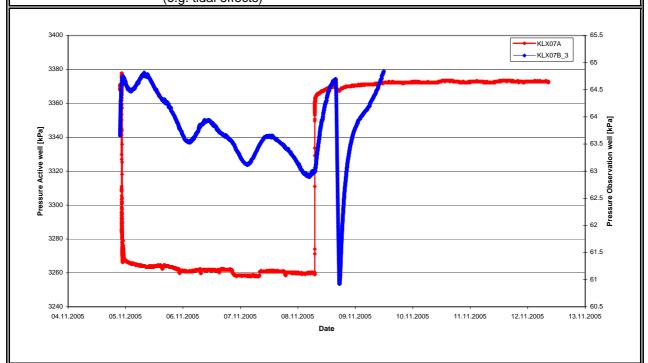
kPa

1.6

 dp_p

Comment: clear response due to pumping in source pressure changes influenced additionally by natural fluctuations

(e.g. tidal effects)



Borehole: KLX07A

APPENDIX 6-5

Index calculation

KLX07A Section 747.00-792.00 m pumped

Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX01	Section no.:	HLX01_1
		Section length:	16.00-100.63
Distance r _s [m]:	1226.22	max. Drawdown s _p [m]:*	0.08
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	62.2
Pressure in test section before stop of flowing:	p_p	kPa	63.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.8

Normalized drawdown with respect to pumping flow rate

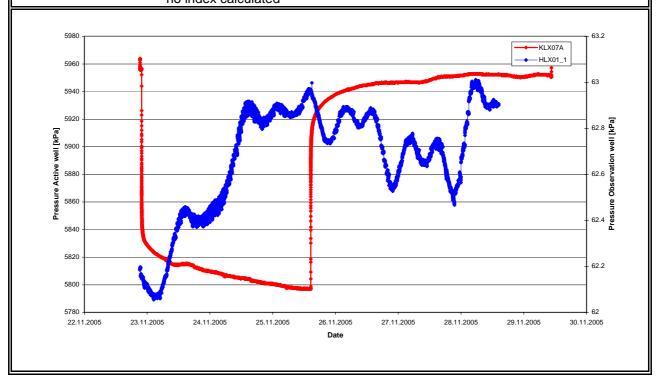
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX02	Section no.:	HLX02_1
		Section length:	0.6-132.00
Distance r _s [m]:	2042.12	max. Drawdown s _p [m]:*	0.01
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	43.8
Pressure in test section before stop of flowing:	p_p	kPa	43.7
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

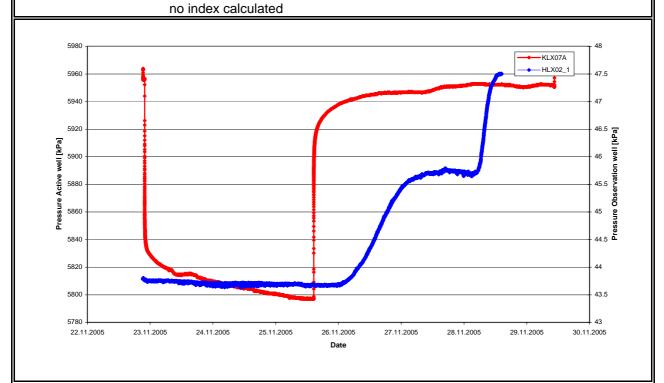
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-79	2.00
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005 1	0:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 1	4:33
Flow Rate Q _p [m ³ /s]:	3.48E-04				
Pressure data		Nomenclature	Unit	Value	
Pressure in test sectio	n before start of flowing:	p _i	k	Pa 5	5957

Pressure in test section before	start of flowing:	p_i	kPa	5957
Pressure in test section before	stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:		dp_p	kPa	160
Observation Hole:	HLX06	Section no.:		HLX06_1

Observation note.	ПЕЛОО	Section no	HLX00_1
		Section length:	1.0-100.0
Distance r _s [m]:	1156.05	max. Drawdown s _p [m]:*	0.08
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	77.7
Pressure in test section before stop of flowing:	p_p	kPa	78.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.8

Normalized drawdown with respect to pumping flow rate

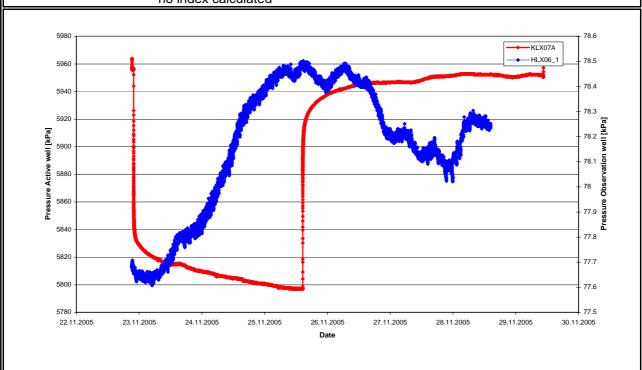
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Nomenclature	Unit	Value
p _i	kPa	5957
p_p	kPa	5797
dp _p	kPa	160
	p _i p _p	p _p kPa

Observation Hole:	HLX07	Section no.:	HLX07_1
		Section length:	16.0-100.0
Distance r _s [m]:	1303.89	max. Drawdown s _p [m]:*	0.03
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	55.1
Pressure in test section before stop of flowing:	p_p	kPa	55.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Normalized drawdown with respect to pumping flow rate

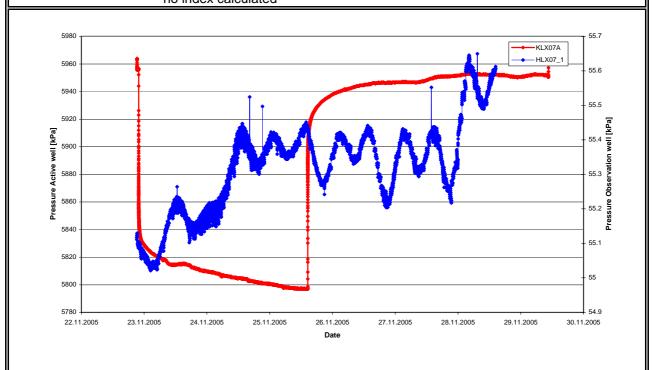
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	747.00-7	792.00
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005	10:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005	14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04				
Pressure data		Nomenclature	Unit	Value	;
Pressure in test sectio	n before start of flowing:	p _i	kP	'a	5957
Pressure in test sectio	n before stop of flowing:	p_p	kP	'a	5797

Maximum pressure change during flowing period:		dp _p	kPa	160
Observation Hole:	HLX10	Section no.:		HLX10_1
		Section length:		3.00-85.00
Distance r _s [m]:	615.73	max. Drawdown s _p [m]:*		0.13
Response time dt_L [s]:	#NV			

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	49.6
Pressure in test section before stop of flowing:	p_p	kPa	50.9
Maximum pressure change during flowing period:*	dp_p	kPa	1.3

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

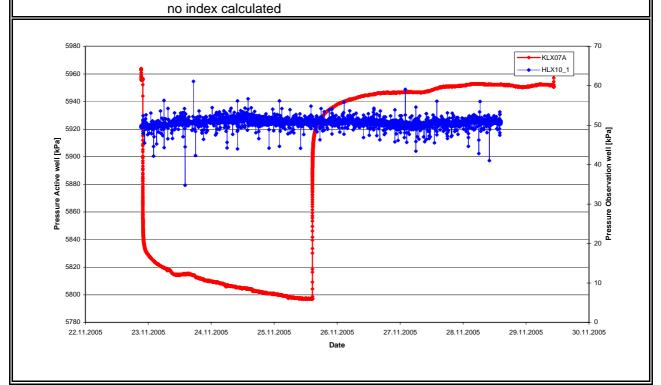
Normalized drawdown with respect to pumping flow rate

 s_p/Q_p (s/m²): Index 2

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bTo	
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start: Flow Rate Q _p [m ³ /s]:	22.11.2005 21:53 3.48E-04	Pump Stop:	25.11.2005 14:33
·	3.40⊑-04		
Pressure data		Nomenclature Ur	
	n before start of flowing:	p_i	kPa 5957
	n before stop of flowing:	p_p	kPa 5797
Maximum pressure ch	ange during flowing period:	dp _p	kPa 160
Observation Hole:	HLX11	Section no.:	HLX11_1
		Section length:	17.00-70.00
Distance r _s [m]:	664.96	max. Drawdown s _p [m]:*	0.02
Response time dt _L [s]:	#NV		
Pressure data		Nomenclature Ur	it Value
Pressure in test sectio	n before start of flowing:	p_i	kPa 62.8
Pressure in test section	n before stop of flowing:	p_p	kPa 63.0
Maximum pressure ch	ange during flowing period:*	dp_p	kPa 0.2
(s _p /Q _p)*In(r _s /r ₀) (s/m ²) Comment:	no response due to pumpir pressure changes due to n		* see comment effects) only
	no index calculated		
5980			63.5
5960	<u>alia</u>		→ KLX07A → HLX11_1
			63.4
5940			+ 63.3
5920		<u> </u>	
Pressure Active well [KPa]			63.2 63.2 63.1 63.2 63.1 63.2 63.1 63.2 63.2 63.1 63.2 63.2 63.2 63.2 63.2 63.2 63.2 63.2
e wel	10 10 10 10 10 10 10 10 10 10 10 10 10 1		ation
9 Activ			63.1 A
5860	1	A 84	
5840		IM IT	Press
		V W	- 62.9
5820			
5800		<u> </u>	- 62.8
5780			62.7
22.11.2005 23.11.2	2005 24.11.2005 25.11.2005 26	3.11.2005 27.11.2005 28.11.2005	29.11.2005 30.11.2005
		Date	

Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m	bToCl:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:].	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_{i}	kPa	s 5957
Pressure in test section	n before stop of flowing:	p_p	kPa	5797
Maximum pressure cha	ange during flowing period:	dp _p	kPa	a 160
Observation Hole:	HLX11	Section no.:		HLX11_2
		Section length:		6.00-16.00
Distance r _s [m]:	677.66	max. Drawdown s _p [n	n]:*	0.03
Response time dt_L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_i	kPa	a 61.7
Pressure in test section	n before stop of flowing:	p_p	kPa	a 62.0
Maximum pressure cha	ange during flowing period:*	dp_p	kPa	a 0.3
Index 1 Normalized drawdown Index 2	ime with respect to the distar r_s^2/dt_L (m^2/s): #N' with respect to pumping flow s_p/Q_p (s/m^2): #N'	v rate v		
Index 1 Normalized drawdown	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source	idal effects	* see comment) only
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r_s^2 /dt _L (m ² /s): #N' with respect to pumping flow s_p /Q _p (s/m ²): #N' : #N'	rate V rate ing in source	idal effects) only
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²):	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source) only
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source) only
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source) only
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2 -KLX07A -HLX11_2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2 -KLX07A -HLX11_2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2 -KLX07A -HLX11_2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2 -KLX07A -HLX11_2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2 -KLX07A -HLX11_2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment: 5980 5960 5940 5920 10 5920 5940 5940 5940 5940 5940 5940 5940 594	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2 -KLX07A -HLX11_2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment: 5980 5960 5940 5920 5980 5980 5980 5980 5980 5980 5980 598	r _s ²/dt _L (m²/s): #N¹ with respect to pumping flow s _p /Q _p (s/m²): #N¹ no response due to pumpir pressure changes due to n	rate V rate ing in source		62.2

Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	747.00-7	792.00
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005	10:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005	14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04				
Pressure data		Nomenclature	Unit	Value)
Pressure in test section	n before start of flowing:	p_i	k	Pa	5957

Maximum pressure change during flowing period:		dp_p	kPa	160
Observation Hole:	HLX13	Section no.:		HLX13_1
		Section length:		11.87-200.2
Distance r _s [m]:	1759.97	max. Drawdown s _p [m]:*		0.09
Response time dt _L [s]:	#NV			

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	120.4
Pressure in test section before stop of flowing:	p_p	kPa	121.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.9

Pressure in test section before stop of flowing:

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

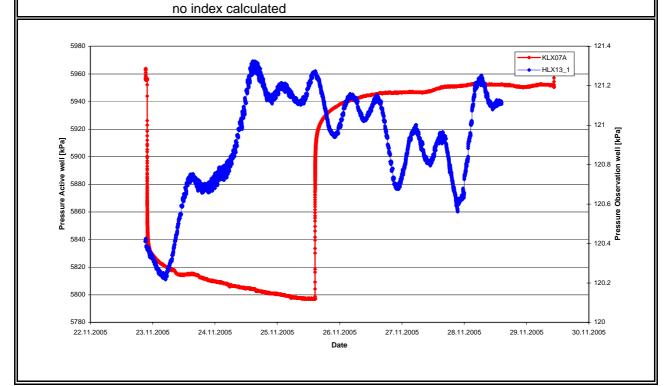
* see comment

 p_p

5797

kPa

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Proceuro data		Nomonoleturo Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX14	Section no.:	HLX14_1
		Section length:	11.00-115.90
Distance r _s [m]:	1792.00	max. Drawdown s _p [m]:*	0.10
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	117.1
Pressure in test section before stop of flowing:	p_p	kPa	118.1
Maximum pressure change during flowing period:*	dp_p	kPa	1.0

Normalized drawdown with respect to pumping flow rate

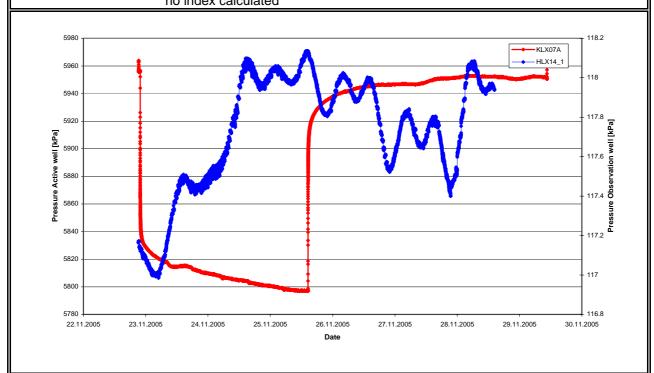
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX21	Section no.:	HLX21_1
		Section length:	81.00-150.00
Distance r _s [m]:	678.15	max. Drawdown s _p [m]:*	0.05
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	52.0
Pressure in test section before stop of flowing:	p_p	kPa	52.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

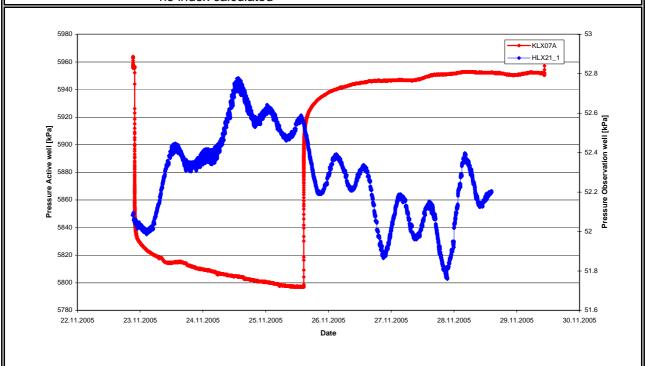
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Proceure in test section	hofore start of flowing:	n	I ₂ I	70 5	957
Pressure data		Nomenclature	Unit	Value	
Flow Rate Q _p [m ³ /s]:	3.48E-04				
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 1	4:33
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005 1	0:56
Pumping Hole:	KLX07A	Pumping Section [r	n bToC]:	747.00-792	2.00
Activityplan No.	AP PS 400-05-045				

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX21	Section no.:	HLX21_2
		Section length:	9.10-80.00
Distance r _s [m]:	695.83	max. Drawdown s _p [m]:*	0.05
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	50.8
Pressure in test section before stop of flowing:	p_p	kPa	51.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

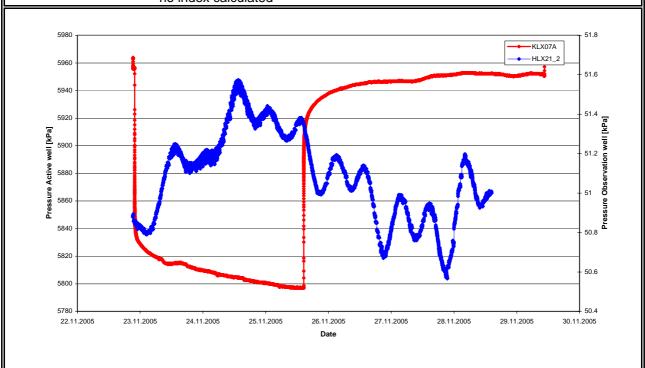
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \text{$\#NV$}$

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Proceuro data		Nomonoleturo Unit	Volue
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX22	Section no.:	HLX22_1
		Section length:	86.00-163.20
Distance r _s [m]:	702.00	max. Drawdown s _p [m]:*	0.05
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	50.8
Pressure in test section before stop of flowing:	p_p	kPa	51.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

* see comment

KLX07A -HLX22_1 5960 51.6 5940 51.4 [kPa] 5900 Pressure Active well 51 5880 5860 5840 50.6 50.4 5800 5780 50.2 24.11.2005 22.11.2005 23.11.2005 25.11.2005 26.11.2005 27.11.2005 28.11.2005 29.11.2005 30.11.2005

Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp _p	kPa	160

Observation Hole:	HLX22	Section no.:	HLX22_2
		Section length:	9.19-85.00
Distance r _s [m]:	721.00	max. Drawdown s _p [m]:*	0.04
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	37.9
Pressure in test section before stop of flowing:	p_p	kPa	38.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

Normalized drawdown with respect to pumping flow rate

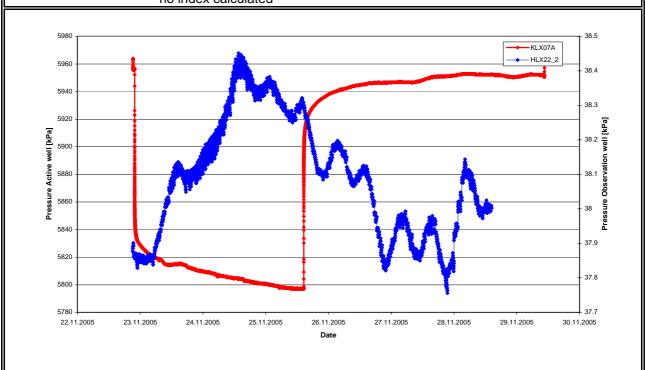
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX23	Section no.:	HLX23_1
		Section length:	61.00-160.20
Distance r _s [m]:	698.87	max. Drawdown s _p [m]:*	0.02
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	98.3
Pressure in test section before stop of flowing:	p_p	kPa	98.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A 5960 98.6 5940 98.55 98.5 [kPa] 5900 Pressure Active well 98.45 5880 5860 5840 98.3 98.25 5800 5780 98.2 23.11.2005 24.11.2005 27.11.2005 22.11.2005 25.11.2005 26.11.2005 28.11.2005 29.11.2005 30.11.2005

Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Pressure data		Nomenclature	Unit	Value
Pressure in test section before start of flowing:		p _i	kPa	5957
Pressure in test section before stop of flowing:		p_p	kPa	5797
Maximum pressure change during flowing period:		dp_p	kPa	160
Observation Hole:	⊔I V22	Section no :		⊔I ∨22 2

Observation Hole:	HLX23	Section no.:	HLX23_2
		Section length:	6.10-60.00
Distance r _s [m]:	713.82	max. Drawdown s _p [m]:*	0.03
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	96.3
Pressure in test section before stop of flowing:	p_p	kPa	96.6
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

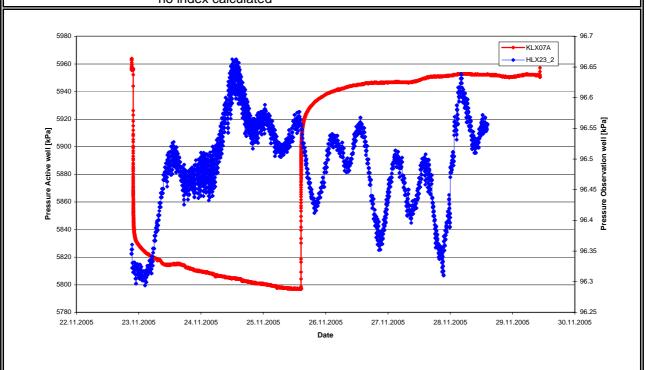
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

Comment:

no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only

* see comment



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX24	Section no.:	HLX24_1
		Section length:	41.00-175.20
Distance r _s [m]:	692.22	max. Drawdown s _p [m]:*	0.03
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	98.4
Pressure in test section before stop of flowing:	p_p	kPa	98.7
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Normalized drawdown with respect to pumping flow rate

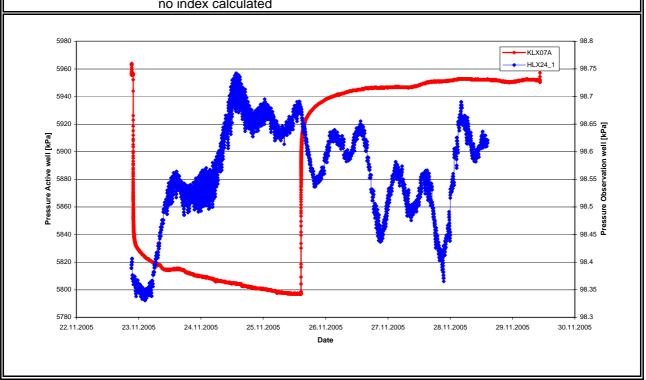
 s_p/Q_p (s/m²): Index 2

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

no response due to pumping in source Comment:

pressure changes due to natural fluctuations (e.g. tidal effects) only



Prossure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX24	Section no.:	HLX24_2
		Section length:	9.10-40.00
Distance r _s [m]:	732.87	max. Drawdown s _p [m]:*	0.01
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	100.0
Pressure in test section before stop of flowing:	p_p	kPa	100.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

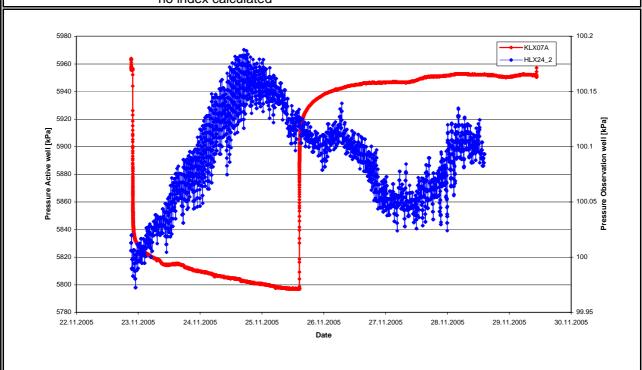
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX25	Section no.:	HLX25_1
		Section length:	61.00-202.50
Distance r _s [m]:	1637.74	max. Drawdown s _p [m]:*	0.07
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	111.4
Pressure in test section before stop of flowing:	p_p	kPa	112.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.7

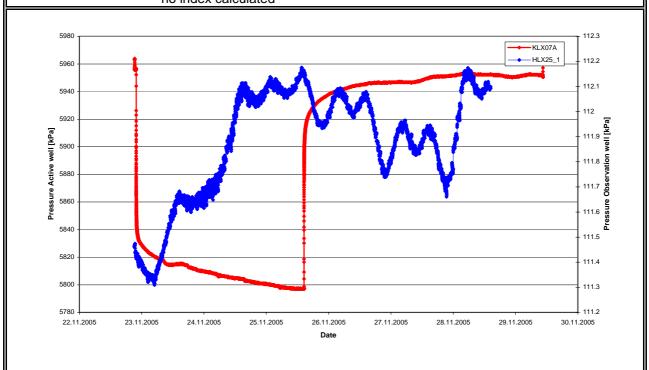
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m b	ToC1·	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	rocj.	29.11.2005 10:56
Pump Start:	22.11.2005 21:14	Pump Stop:		25.11.2005 10:30
Flow Rate Q _p [m ³ /s]:	3.48E-04	· ····································		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_i	kPa	5957
Pressure in test section	n before stop of flowing:	p_p	kPa	5797
Maximum pressure cha	ange during flowing period:	dp_p	kPa	160
Observation Hole:	HLX25	Section no.:		HLX25_2
		Section length:		6.12-60.00
Distance r _s [m]:	1648.73	max. Drawdown s _p [m	1]:*	0.02
Response time dt _L [s]:	#NV			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p_i	kPa	111.6
Pressure in test section	n before stop of flowing:	p_p	kPa	111.8
Maximum pressure cha	ange during flowing period:*	dp_p	kPa	0.2
Normalized drawdown Index 2	r_s^2/dt_L (m ² /s): #N' with respect to pumping flow s_p/Q_p (s/m ²): #N'	v rate v		
Index 1	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source	dal effects)	* see comment only
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r_s^2/dt_L (m ² /s): #N' with respect to pumping flow s_p/Q_p (s/m ²): #N' : #N'	rate V V org in source		only
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		Only 112.5 KLX07A HLX25_2 112.4
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		Only 112.5 112.4 112.3 112.3 112.4 112.3 112.3 112.4 112.3
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		00 nly 112.5 112.4 112.3 112.2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		00 nly 112.5 112.4 112.3 112.2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		00 nly 112.5 112.4 112.3 112.2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		only 112.5 (LX07A HLX25_2 112.4 112.3 112.2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		only 112.5 (LX07A HLX25_2 112.4 112.3 112.2
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		112.5 KLX07A 112.5 HLX25_2 112.4 112.3 112.2 112.9 111.9 111.9 111.9 111.9
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		112.5 LLXO7A 112.5 112.4 112.2 112.1 112.0 112.9 111.9 90 111.8 884
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		Only 112.5 KLX07A 112.4 112.3 112.2 112.1 112.9 112.9 111.8 111.8 111.7
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²): Comment:	r _s ²/dt _L (m²/s): #N' with respect to pumping flow s _p /Q _p (s/m²): #N' : #N' no response due to pumpir pressure changes due to n	rate V V org in source		112.5 KLX07A 112.5 112.4 112.3 112.2 112.1 112.9 111.9 111.8 111.7 111.6

Pressure in test section	n before start of flowing:	p_{i}	kF	Pa	5957
Pressure data		Nomenclature	Unit	Value	
Flow Rate Q _p [m ³ /s]:	3.48E-04				
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005	14:33
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005	10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-7	92.00
Activityplan No.	AP PS 400-05-045				

Nomenclature	Unit	Value
p _i	kPa	5957
p_p	kPa	5797
dp _p	kPa	160
	p _i p _p	p _p kPa

Observation Hole:	HLX30	Section no.:	HLX30_1
		Section length:	101.00-163.40
Distance r _s [m]:	1355.95	max. Drawdown s _p [m]:*	0.05
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	106.9
Pressure in test section before stop of flowing:	p_p	kPa	107.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

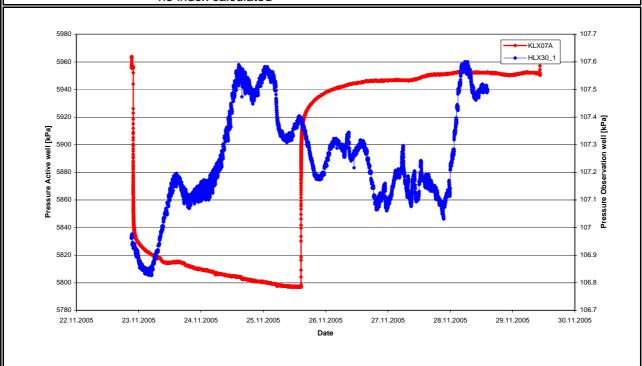
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX30	Section no.:	HLX30_2
		Section length:	9.10-100.00
Distance r _s [m]:	1383.70	max. Drawdown s _p [m]:*	0.04
Posnonse time dt [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	106.5
Pressure in test section before stop of flowing:	p_p	kPa	106.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.4

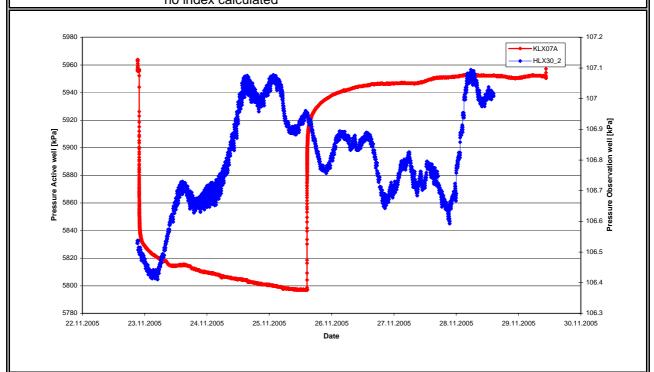
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.



Pressure data		Nomenclature	Unit	Value
Response time dt _L [s]:	#NV			
Distance r _s [m]:	1315.16	max. Drawdown s _p	, [m]:*	0.05
		Section length:		9.10-133.20
Observation Hole:	HLX31	Section no.:		HLX31_1
Maximum pressure cha	nge during flowing period:	dp_p	kPa	160
Pressure in test section before stop of flowing:		p_p	kPa	5797
Pressure in test section before start of flowing:		p_i	kPa	5957
Pressure data		Nomenclature	Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04			
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045			

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	107.0
Pressure in test section before stop of flowing:	p_p	kPa	107.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Normalized drawdown with respect to pumping flow rate

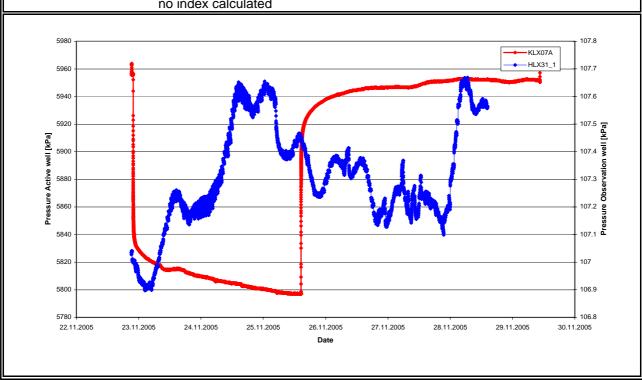
 s_p/Q_p (s/m²): Index 2 #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

no response due to pumping in source Comment:

pressure changes due to natural fluctuations (e.g. tidal effects) only



Prossure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX33	Section no.:	HLX33_1
		Section length:	31.00-202.10
Distance r _s [m]:	835.81	max. Drawdown s _p [m]:*	0.05
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	100.2
Pressure in test section before stop of flowing:	p_p	kPa	100.7
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

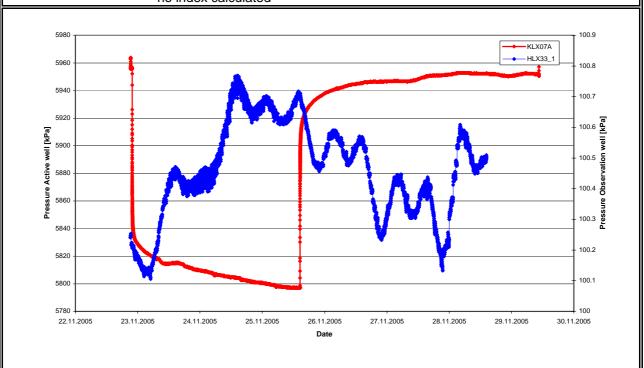
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source



Proceuro data		Nomonoleturo Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX33	Section no.:	HLX33_2
		Section length:	9.10-30.00
Distance r _s [m]:	913.36	max. Drawdown s _p [m]:*	0.05
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	100.0
Pressure in test section before stop of flowing:	p_p	kPa	100.5
Maximum pressure change during flowing period:*	dp_p	kPa	0.5

Normalized drawdown with respect to pumping flow rate

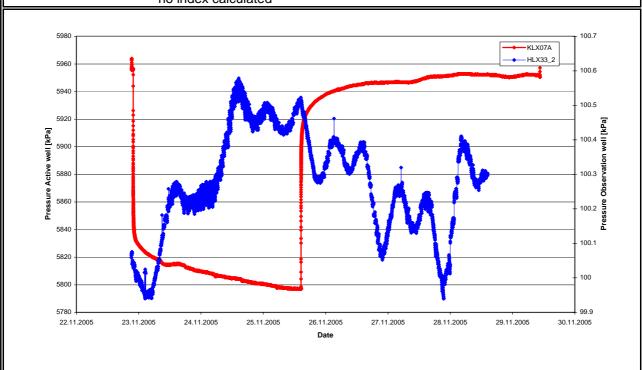
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only

* see comment



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp _p	kPa	160

Observation Hole:	HLX34	Section no.:	HLX34_1
		Section length:	9.00-151.80
Distance r _s [m]:	2054.64	max. Drawdown s _p [m]:*	0.03
Response time dt. [s]:	#N\/		

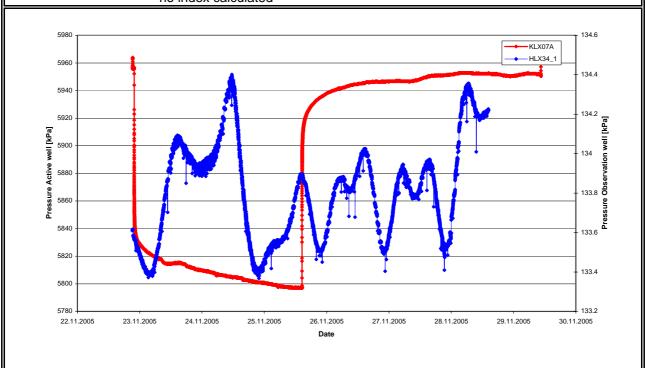
Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	133.6
Pressure in test section before stop of flowing:	p_p	kPa	133.9
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Normalized drawdown with respect to pumping flow rate

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX35	Section no.:	HLX35_1
		Section length:	65.00-151.50
Distance r _s [m]:	2023.09	max. Drawdown s _p [m]:*	0.08
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	132.3
Pressure in test section before stop of flowing:	p_p	kPa	133.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.8

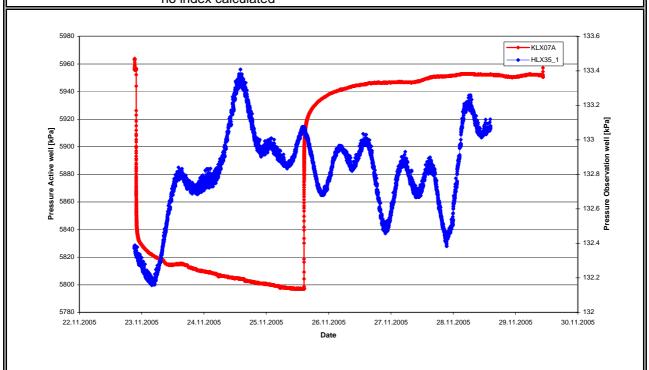
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. t



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bT	oC]: 747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature U	nit Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	HLX35	Section no.:	HLX35_2
		Section length:	6.00-64.00
Distance r _s [m]:	2099.36	max. Drawdown s _p [m]:*	0.02
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	114.1
Pressure in test section before stop of flowing:	p_p	kPa	114.3
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

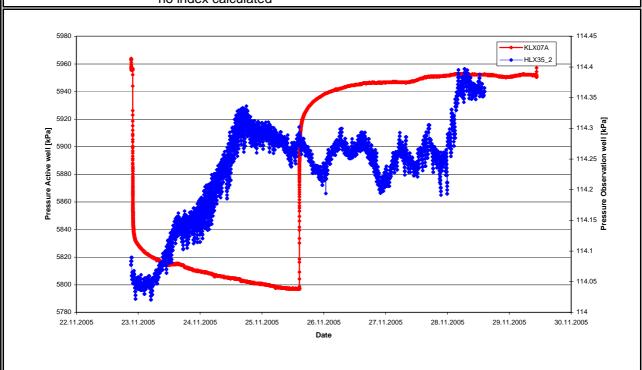
Normalized drawdown with respect to pumping flow rate Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

Comment: no response due to pumping in sour

no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only

* see comment



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX01	Section no.:	KLX01_1
		Section length:	705.00-1077.99
Distance r _s [m]:	1465.21	max. Drawdown s _p [m]:*	0.21
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	-19.9
Pressure in test section before stop of flowing:	p_p	kPa	-17.8
Maximum pressure change during flowing period:*	dp_p	kPa	2.1

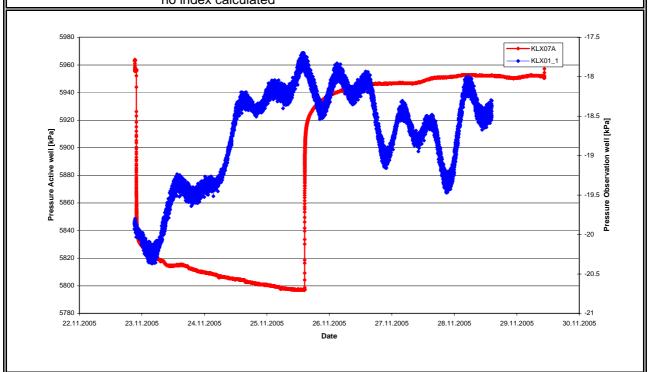
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tic



Dressure dete		Namanalatura IInit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX01	Section no.:	KLX01_2
		Section length:	191.00-704.00
Distance r _s [m]:	1420.65	max. Drawdown s _p [m]:*	0.21
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	53.9
Pressure in test section before stop of flowing:	p_p	kPa	56.0
Maximum pressure change during flowing period:*	dp_p	kPa	2.1

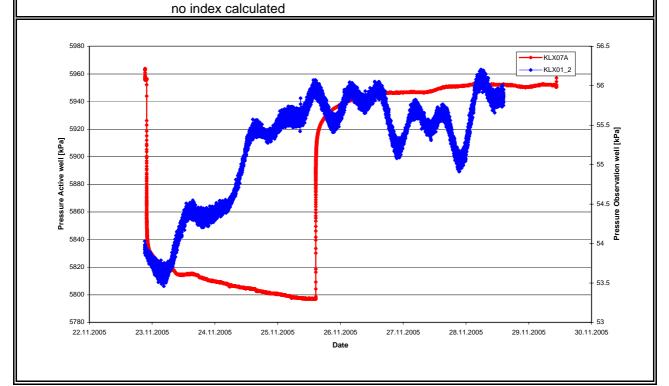
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04			
Pressure data		Nomenclature	Unit	Value
	on before start of flowing:	p _i	kP:	
	on before stop of flowing:	P _p	kP:	
<u> </u>	hange during flowing period:	dp _p	kP	
Observation Hole:	KLX01	Section no.:		KLX01_3
Diotonoo r [m]:	1450.66	Section length:	[m]·*	171.00-190.00
Distance r _s [m]:	1458.66	max. Drawdown s _p	ı [III].	0.13
Response time dt _L [s]	: #NV			
Pressure data		Nomenclature	Unit	Value
	on before start of flowing:	p_i	kP	-
Pressure in test section	on before stop of flowing:	p_p	kP	
Maximum pressure cl	hange during flowing period:*	dp_p	kP	a 1.3
Index 1 Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ²	e time with respect to the distance r_s^2/dt_L (m²/s): #NV In with respect to pumping flow s_p/Q_p (s/m²): #NV	rate r		
Normalized drawdow	r _s ² /dt _L (m ² /s): #NV n with respect to pumping flow s _p /Q _p (s/m ²): #NV no response due to pumping pressure changes due to na	rate / g in source	. tidal effects	* see comment s) only
Normalized drawdown Index 2 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$	r_s^2/dt_L (m ² /s): #NV n with respect to pumping flow s_p/Q_p (s/m ²): #NV no response due to pumping	rate / g in source	. tidal effects	
Normalized drawdown Index 2 (s _p /Q _p)*In(r _s /r ₀) (s/m ² Comment:	r _s ² /dt _L (m ² /s): #NV n with respect to pumping flow s _p /Q _p (s/m ²): #NV no response due to pumping pressure changes due to na	rate / g in source	. tidal effects	66.4 66.4 66.2 66.4 66.4 66.4 66.4 66.4 66.4 esc. a line with the service of the service

Activityplan No.	AP PS 400-05-045				
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-7	792.00
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005	10:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005	14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04				
Pressure data		Nomenclature	Unit	Value	:
Pressure in test sectio	n before start of flowing:	p_i	kP	'a	5957
Pressure in test section	n before stop of flowing:	p_p	kP	'a	5797

Maximum pressure change du	ıring flowing period:	dp_p	kPa	160
Observation Hole:	KLX01	Section no.:		KLX01_4
		Section length:		1.00-170.00
Distance r _s [m]:	1483.23	max. Drawdown s _p [m]:*		0.06
Response time dt _L [s]:	#NV			

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	139.8
Pressure in test section before stop of flowing:	p_p	kPa	140.4
Maximum pressure change during flowing period:*	dp_{p}	kPa	0.6

Normalized drawdown with respect to pumping flow rate

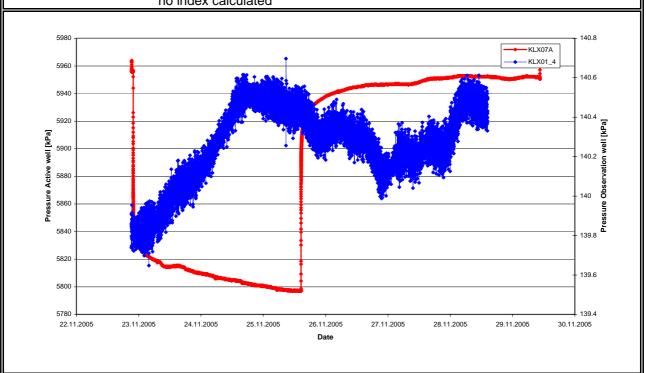
 s_p/Q_p (s/m²): Index 2

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

no response due to pumping in source

Comment: pressure changes due to natural fluctuations (e.g. tidal effects) only

* see comment



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_1
		Section length:	1165.00-1700.00
Distance r _s [m]:	1072.25	max. Drawdown s _p [m]:*	0.27
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	74.9
Pressure in test section before stop of flowing:	p_p	kPa	77.5
Maximum pressure change during flowing period:*	dp_p	kPa	2.6

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A KLX02_1 5960 78 5940 77.5 [kPa] [kPa] - 76.5 - 5900 Pressure Active well 5880 5860 5840 75 74.5 5800 5780 23.11.2005 24.11.2005 22.11.2005 25.11.2005 26.11.2005 27.11.2005 28.11.2005 29.11.2005 30.11.2005

Proceuro data		Nomonoleturo Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_2
		Section length:	1145.00-1164.00
Distance r _s [m]:	845.32	max. Drawdown s _p [m]:*	0.24
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	57.9
Pressure in test section before stop of flowing:	p_p	kPa	60.3
Maximum pressure change during flowing period:*	dp_p	kPa	2.4

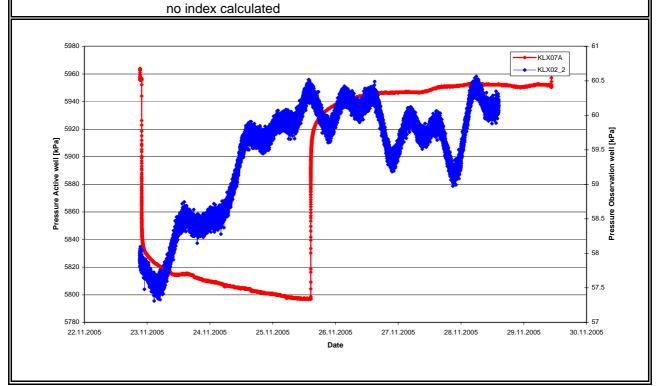
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
	-	·	_

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_3
		Section length:	718.00-1144.00
Distance r _s [m]:	693.11	max. Drawdown s _p [m]:*	0.24
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	35.8
Pressure in test section before stop of flowing:	p_p	kPa	38.2
Maximum pressure change during flowing period:*	dp_p	kPa	2.4

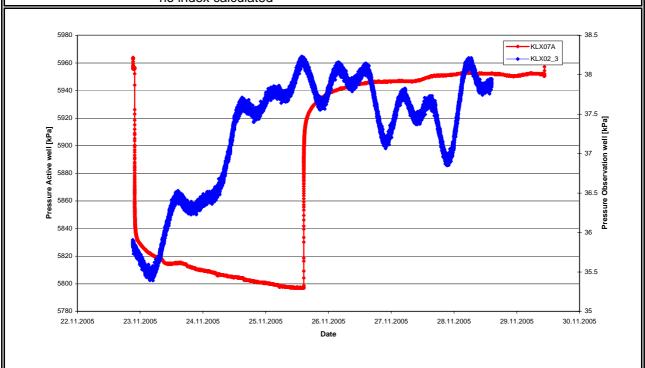
Normalized drawdown with respect to pumping flow rate

Index 2 $s_p/Q_p (s/m^2)$: #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_4
		Section length:	495.00-717.00
Distance r _s [m]:	565.38	max. Drawdown s _p [m]:*	0.31
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	49.0
Pressure in test section before stop of flowing:	p_p	kPa	52.0
Maximum pressure change during flowing period:*	dp_p	kPa	3.0

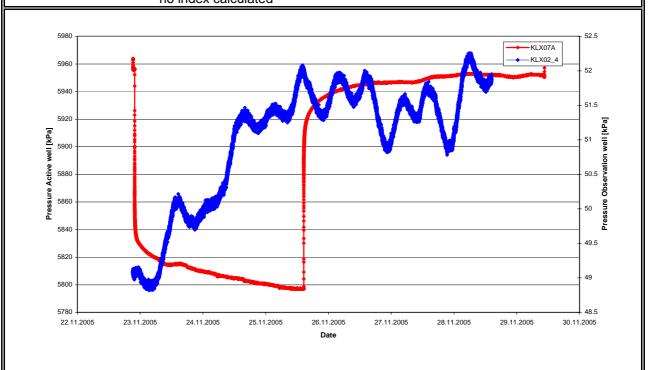
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to patural fluctuations (e.g. tida



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature Unit	Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_5
		Section length:	452.00-494.00
Distance r _s [m]:	561.70	max. Drawdown s _p [m]:*	0.28
Response time dt. [s]:	#N\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	54.9
Pressure in test section before stop of flowing:	p_p	kPa	57.6
Maximum pressure change during flowing period:*	dp_p	kPa	2.7

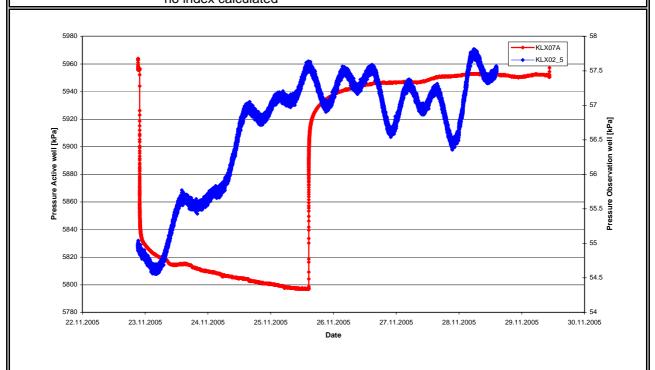
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_6
		Section length:	348.00-451.00
Distance r _s [m]:	573.54	max. Drawdown s _p [m]:*	0.24
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	56.1
Pressure in test section before stop of flowing:	p_p	kPa	58.5
Maximum pressure change during flowing period:*	dp_p	kPa	2.4

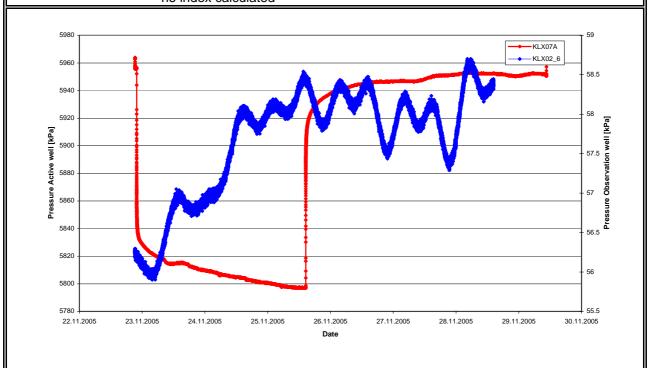
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m^2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
	·	<u> </u>	<u>. </u>

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_7
		Section length:	209.00-347.00
Distance r _s [m]:	613.56	max. Drawdown s _p [m]:*	0.07
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	59.7
Pressure in test section before stop of flowing:	p_p	kPa	60.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.7

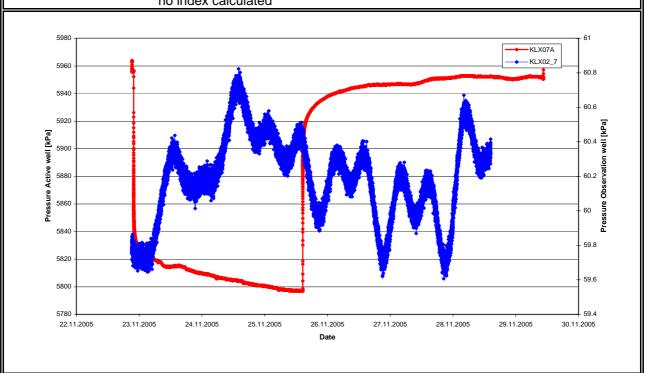
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
	-	·	_

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX02	Section no.:	KLX02_8
		Section length:	202.95-208.00
Distance r _s [m]:	647.60	max. Drawdown s _p [m]:*	0.07
Response time dt. [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	74.7
Pressure in test section before stop of flowing:	p_p	kPa	75.4
Maximum pressure change during flowing period:*	dp_p	kPa	0.7

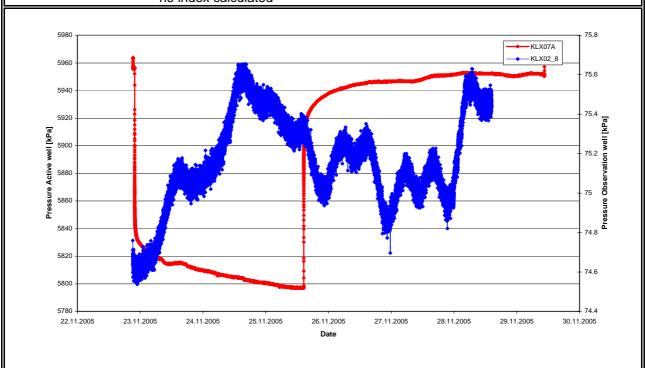
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
	·	<u> </u>	<u>. </u>

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX04	Section no.:	KLX04_1
		Section length:	898.00.1000.00
Distance r _s [m]:	1412.31	max. Drawdown s _p [m]:*	0.28
Response time dt_L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	104.8
Pressure in test section before stop of flowing:	p_p	kPa	107.5
Maximum pressure change during flowing period:*	dp_p	kPa	2.7

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A 5960 108 5940 107.5 107 [kPa] 5900 Pressure Active well Observation w 5880 5860 5840 105 104.5 5800 5780 104 23.11.2005 24.11.2005 22.11.2005 25.11.2005 26.11.2005 27.11.2005 28.11.2005 29.11.2005 30.11.2005

Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [r	m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04			
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p _i	kPa	5957
Pressure in test section	n before stop of flowing:	p_p	kPa	5797
Maximum pressure cha	ange during flowing period:	dp_p	kPa	160
Observation Hole:	KLX04	Section no.:		KLX04_2
		Section length:		870.00-897.00
Distance r _s [m]:	1400.00	max. Drawdown s _p	[m]:*	0.28

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	103.0
Pressure in test section before stop of flowing:	p_p	kPa	105.7
Maximum pressure change during flowing period:*	dp_n	kPa	2.7

#NV

Normalized response time with respect to the distance Index 1 ${r_s}^2/{dt_L}$ (m²/s): #NV

Response time dt_L [s]:

Normalized drawdown with respect to pumping flow rate

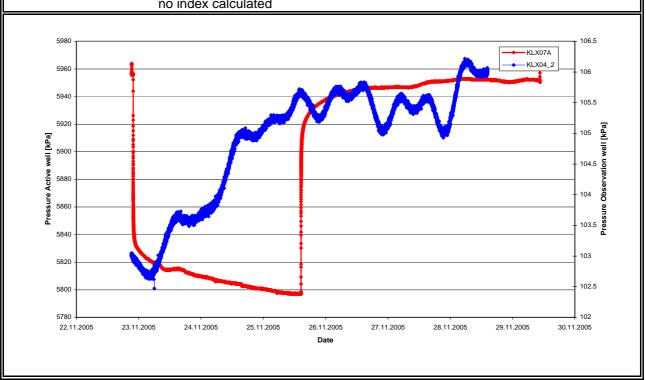
 s_p/Q_p (s/m²): Index 2

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



range in the second sec				
Activityplan No.	AP PS 400-05-045			
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04	•		
Pressure data		Nomenclature	Unit	Value
Pressure in test section	n before start of flowing:	p _i	kP	a 5957
Pressure in test section	n before stop of flowing:	p_p	kP	a 5797
Maximum pressure cha	ange during flowing period:	dp_p	kP	a 160
Observation Hole:	KI XO4	Section no :		KI XN4 3

Observation Hole:	KLX04	Section no.:	KLX04_3
		Section length:	686.00.869.00
Distance r _s [m]:	1385.09	max. Drawdown s _p [m]:*	0.22
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_i	kPa	114.1
Pressure in test section before stop of flowing:	p_p	kPa	116.3
Maximum pressure change during flowing period:*	dp_p	kPa	2.2

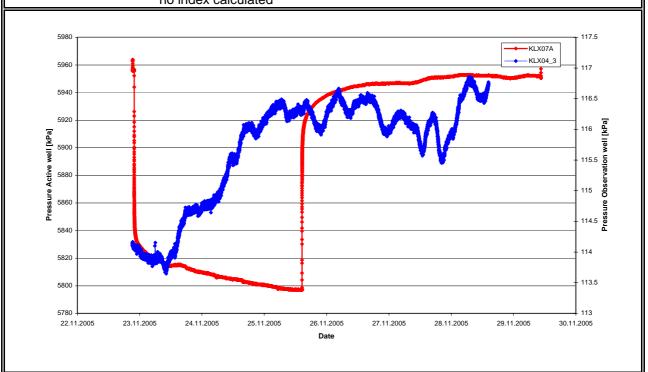
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source



		Nomenclature	Unit	value
Pressure data		Nomenalatura	l lm:4	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04			
Pump Start:	22.11.2005 21:53	Pump Stop:		25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:		29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [I	m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045			

Pressure data	Nomenciature	Unit	value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp _p	kPa	160

Observation Hole:	KLX04	Section no.:	KLX04_4
		Section length:	531.00-685.00
Distance r _s [m]:	1374.18	max. Drawdown s _p [m]:*	0.23
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	113.1
Pressure in test section before stop of flowing:	p_p	kPa	115.4
Maximum pressure change during flowing period:*	dp_p	kPa	2.3

Normalized drawdown with respect to pumping flow rate

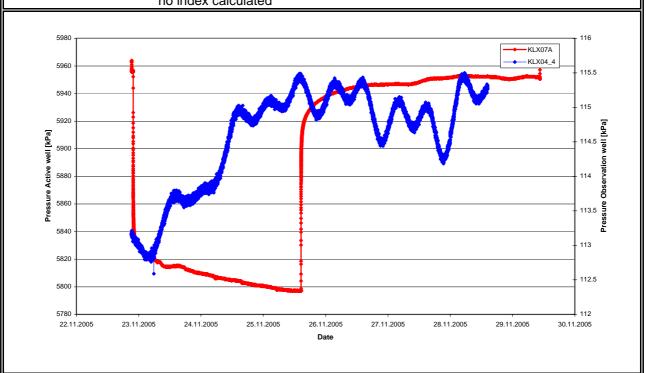
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bT	oC]: 747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pressure data		Nomenclature U	nit Value

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX04	Section no.:	KLX04_5
		Section length:	507.00-530.00
Distance r _s [m]:	1375.73	max. Drawdown s _p [m]:*	0.16
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	115.7
Pressure in test section before stop of flowing:	p_p	kPa	117.3
Maximum pressure change during flowing period:*	dp_p	kPa	1.6

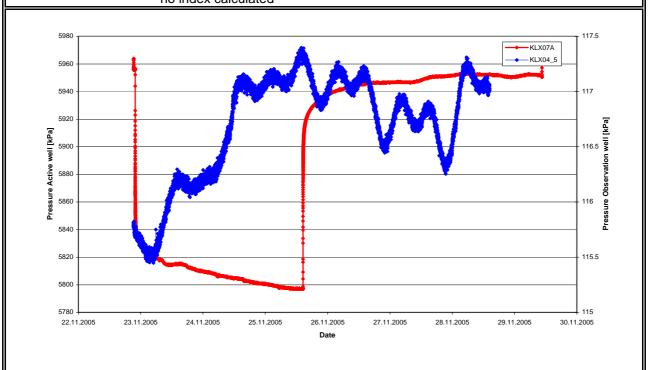
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source



Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX04	Section no.:	KLX04_6
		Section length:	231.00-506.00
Distance r _s [m]:	1389.30	max. Drawdown s _p [m]:*	0.23
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	114.3
Pressure in test section before stop of flowing:	p_p	kPa	116.6
Maximum pressure change during flowing period:*	dp_p	kPa	2.3

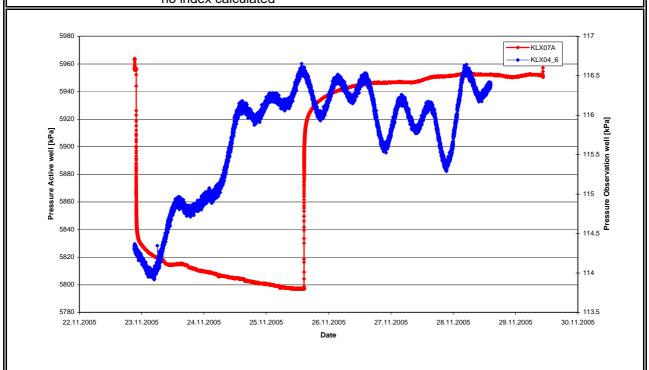
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX04	Section no.:	KLX04_7
		Section length:	163.00-230.00
Distance r _s [m]:	1420.73	max. Drawdown s _p [m]:*	0.14
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	116.1
Pressure in test section before stop of flowing:	p_p	kPa	117.5
Maximum pressure change during flowing period:*	dp_p	kPa	1.4

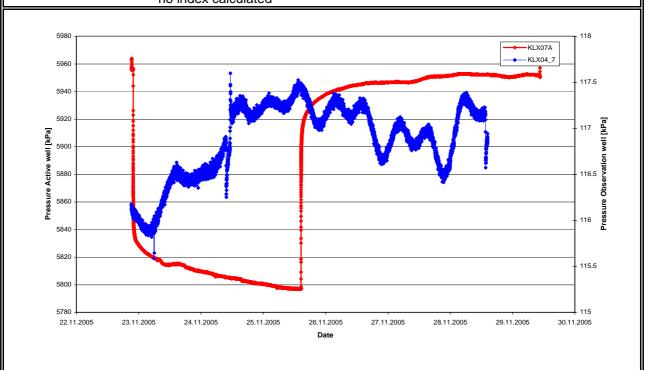
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX04	Section no.:	KLX04_8
		Section length:	12.24-162.00
Distance r _s [m]:	1449.12	max. Drawdown s _p [m]:*	0.12
Response time dt _L [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	120.8
Pressure in test section before stop of flowing:	p_p	kPa	122.0
Maximum pressure change during flowing period:*	dp_p	kPa	1.2

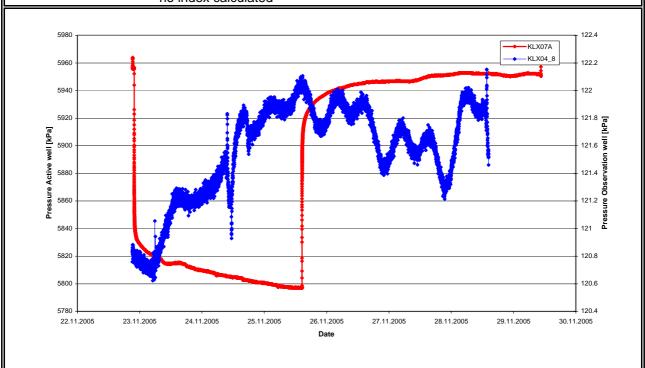
Normalized drawdown with respect to pumping flow rate

 $\label{eq:spQp} \text{Index 2} \qquad \qquad \text{s_p/Q_p (s/m2):} \qquad \qquad \text{$\#NV$}$

 $(s_p/Q_p)*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX07	Section no.:	KLX07B_1
		Section length:	112.00-200.00
Distance r _s [m]:	642.37	max. Drawdown s _p [m]:*	0.03
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	64.9
Pressure in test section before stop of flowing:	p_p	kPa	65.2
Maximum pressure change during flowing period:*	dp_p	kPa	0.3

Normalized drawdown with respect to pumping flow rate

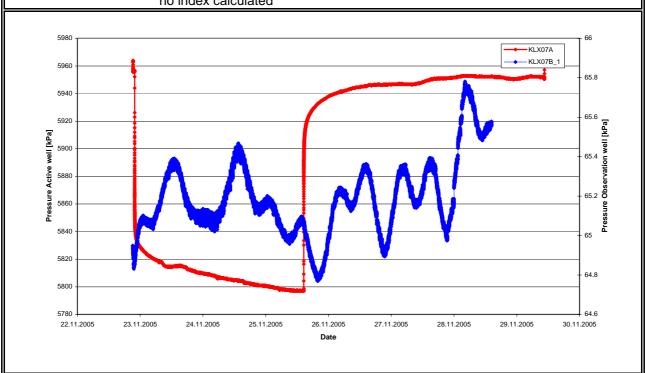
Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source

pressure changes due to natural fluctuations (e.g. tidal effects) only



Pressure data		Nomenclature Unit	Value
Flow Rate Q _p [m ³ /s]:	3.48E-04		
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Activityplan No.	AP PS 400-05-045		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p_{i}	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX07	Section no.:	KLX07B_2
		Section length:	49.00-111.00
Distance r _s [m]:	699.85	max. Drawdown s _p [m]:*	0.02
Response time dt, [s]:	#NV		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	63.9
Pressure in test section before stop of flowing:	p_p	kPa	64.1
Maximum pressure change during flowing period:*	dp_p	kPa	0.2

Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^* ln(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only no index calculated

KLX07A KLX07B_2 5960 64.6 5940 [kPa] 5900 Pressure Active well 64.2 5880 5860 5840 63.8 5800 5780 63.4 23.11.2005 24.11.2005 22.11.2005 25.11.2005 26.11.2005 27.11.2005 28.11.2005 29.11.2005 30.11.2005

Activityplan No.	AP PS 400-05-045		
Pumping Hole:	KLX07A	Pumping Section [m bToC]:	747.00-792.00
Test Start:	22.11.2005 21:14	Test Stop:	29.11.2005 10:56
Pump Start:	22.11.2005 21:53	Pump Stop:	25.11.2005 14:33
Flow Rate Q _p [m ³ /s]:	3.48E-04		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	5957
Pressure in test section before stop of flowing:	p_p	kPa	5797
Maximum pressure change during flowing period:	dp_p	kPa	160

Observation Hole:	KLX07	Section no.:	KLX07B_3
		Section length:	0.0-48.00
Distance r _s [m]:	744.34	max. Drawdown s _p [m]:*	0.01
Response time dt. [s]:	#NI\/		

Pressure data	Nomenclature	Unit	Value
Pressure in test section before start of flowing:	p _i	kPa	64.9
Pressure in test section before stop of flowing:	p_p	kPa	65.0
Maximum pressure change during flowing period:*	dp_p	kPa	0.1

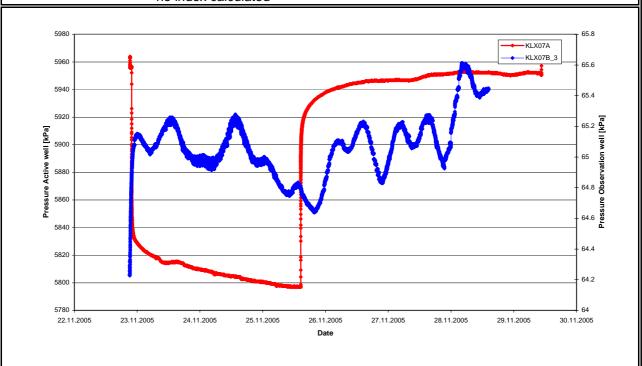
Normalized drawdown with respect to pumping flow rate

Index 2 s_p/Q_p (s/m²): #NV

 $(s_p/Q_p)^*In(r_s/r_0) (s/m^2)$: #NV

* see comment

Comment: no response due to pumping in source pressure changes due to natural fluctuations (e.g. tidal effects) only



Borehole: KLX07A

APPENDIX 7

Borehole: KLX07A

APPENDIX 7-1

KLX07A Section 103.20-193.20 m pumped

Pumped: KLX07A 103.20-193.20 m Page 7-1-1/1

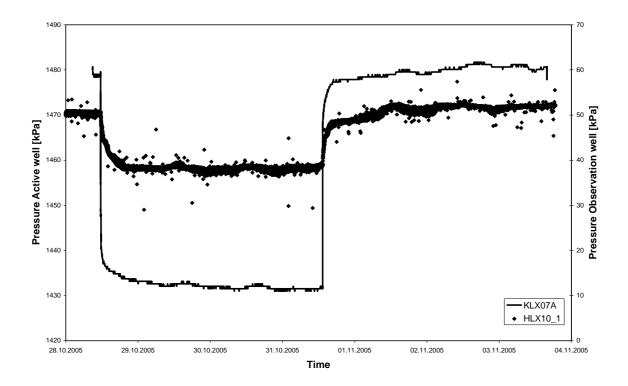
Observed: HLX10_1 3.00-85.00 m

APPENDIX 7-1-1

KLX07A Section 103.20-193.20 m pumped HLX10_1 3.00-85.00 m observed

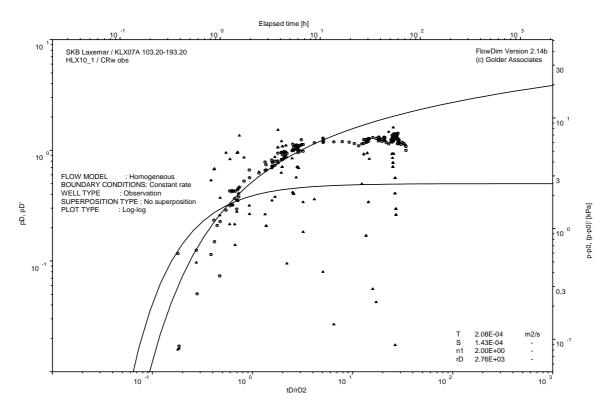
Pumped: KLX07A 103.20-193.20 m Page 7-1-1/2

Observed: HLX10_1 3.00-85.00 m

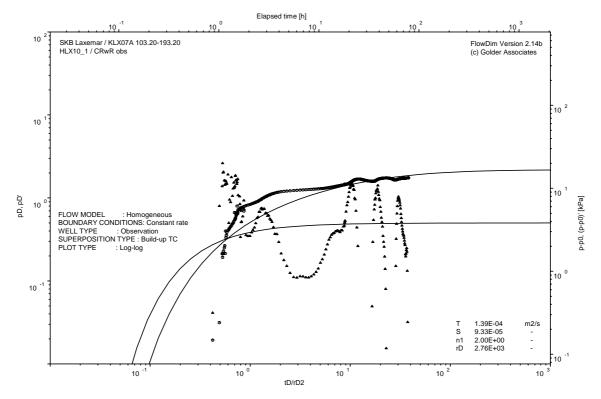


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX10_1 3.00-85.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX10_1 3.00-85.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX10_1 3.00-85.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX10_1 3.00-85.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-2/1

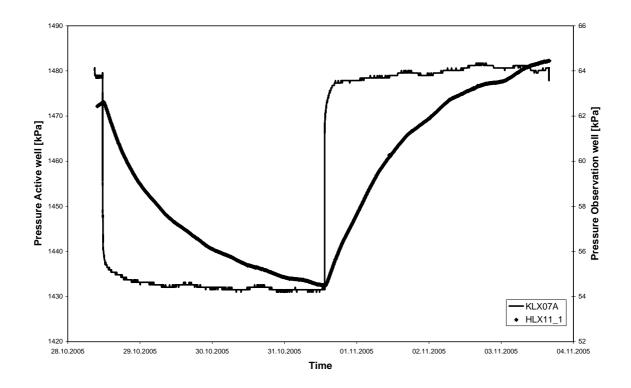
Observed: HLX11_1 17.00-70.00 m

APPENDIX 7-1-2

KLX07A Section 103.20-193.20 m pumped HLX11_1 17.00-70.00 m observed

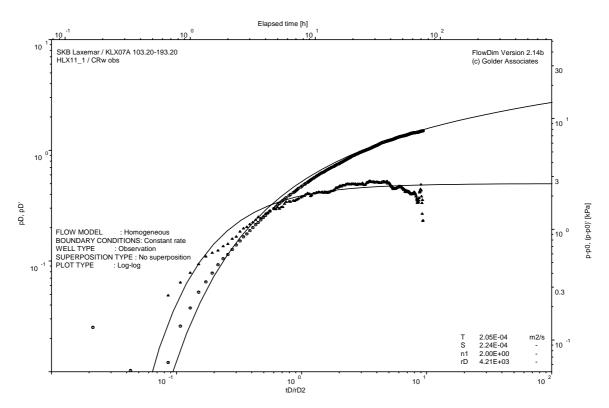
Pumped: KLX07A 103.20-193.20 m Page 7-1-2/2

Observed: HLX11_1 17.00-70.00 m

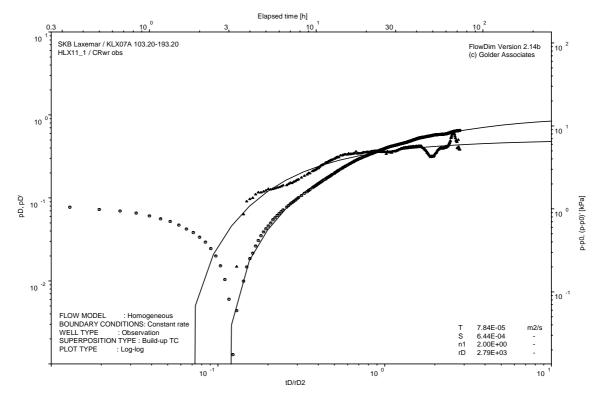


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX11_1 17.00-70.00 m

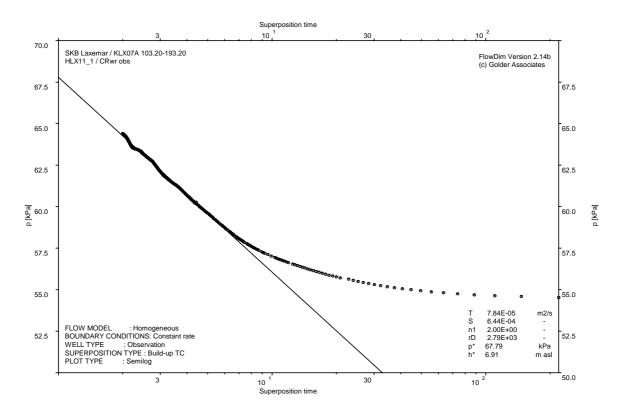


CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX11_1 17.00-70.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX11_1 17.00-70.00 m



CRwr phase; HORNER match; KLX07A 103.20-193.20 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-3/1

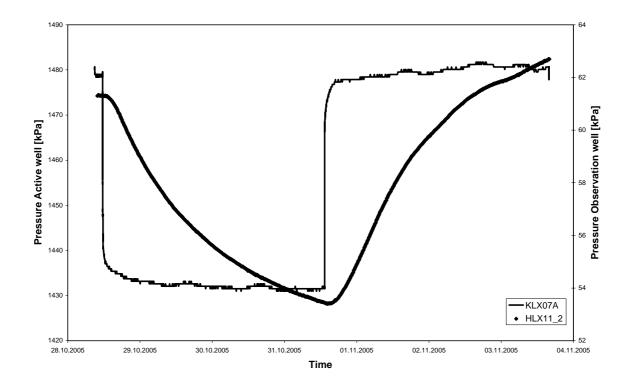
Observed: HLX11_2 6.00-16.00 m

APPENDIX 7-1-3

KLX07A Section 103.20-193.20 m pumped HLX11_2 6.00-16.00 m observed

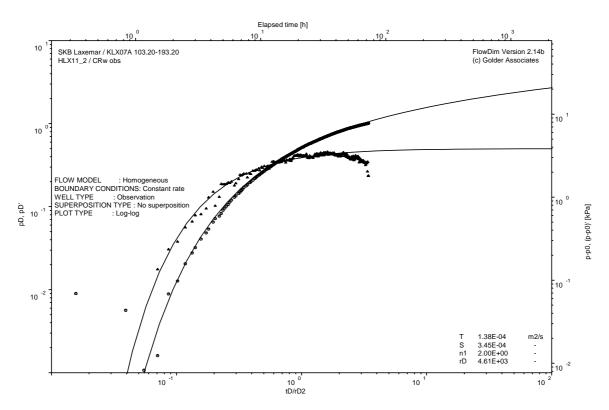
Pumped: KLX07A 103.20-193.20 m Page 7-1-3/2

Observed: KLX0/A 103.20-193.20 ii
Observed: HLX11_2 6.00-16.00 m

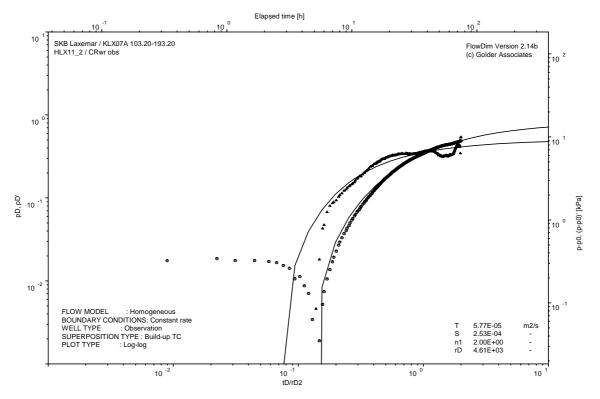


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX11_2 6.00-16.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX11_2 6.00-16.00 m

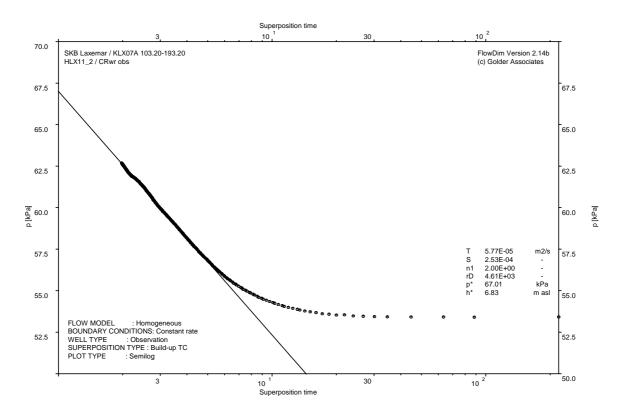


CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX11_2 6.00-16.00~m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX11_2 6.00-16.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX11_2 6.00-16.00 m



CRwr phase; HORNER match; KLX07A 103.20-193.20 m pumped and HLX11 $_2$ 6.00-16.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-4/1

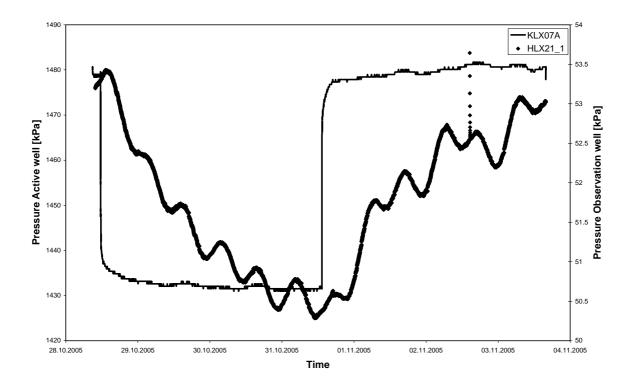
Observed: HLX21_1 81.00-150.00 m

APPENDIX 7-1-4

KLX07A Section 103.20-193.20 m pumped HLX21_1 81.00-150.00 m observed

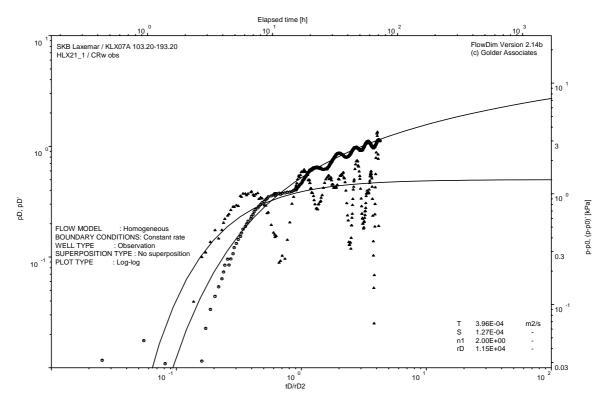
Pumped: KLX07A 103.20-193.20 m Page 7-1-4/2

Observed: HLX21_1 81.00-150.00 m

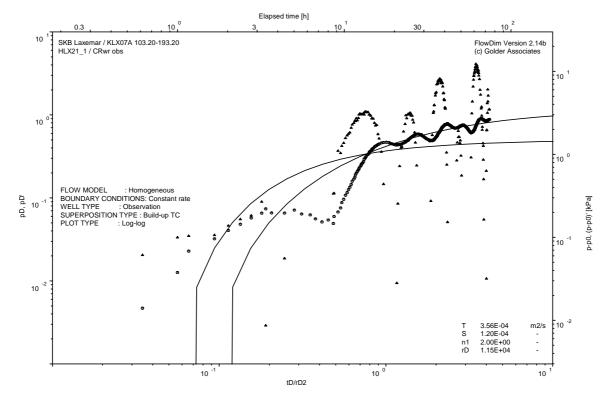


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX21_1 81.00-150.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX21_1 81.00-150.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX21_1 81.00-150.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX21_1 81.00-150.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-5/1

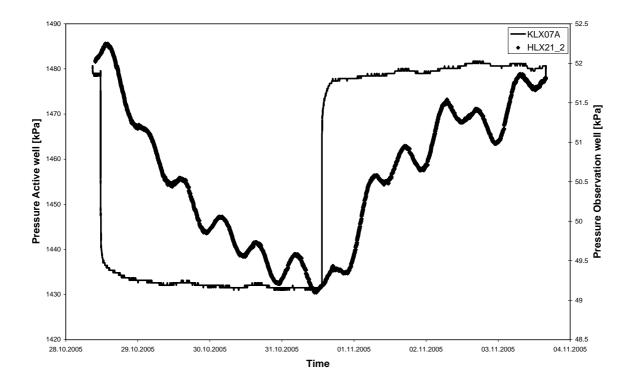
Observed: HLX21_2 9.10-80.00 m

APPENDIX 7-1-5

KLX07A Section 103.20-193.20 m pumped HLX21_2 9.10-80.00 m observed

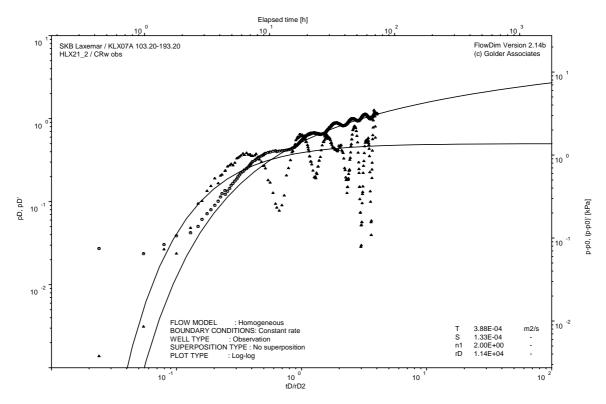
Pumped: KLX07A 103.20-193.20 m Page 7-1-5/2

Observed: HLX21_2 9.10-80.00 m

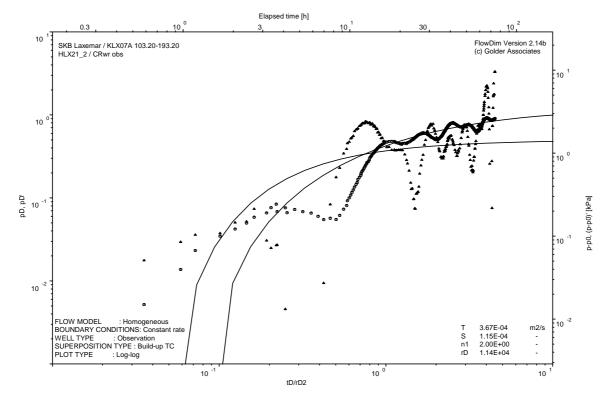


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX21_2 9.10-80.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX21_2 9.10-80.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX21_2 9.10-80.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX21_2 9.10-80.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-6/1

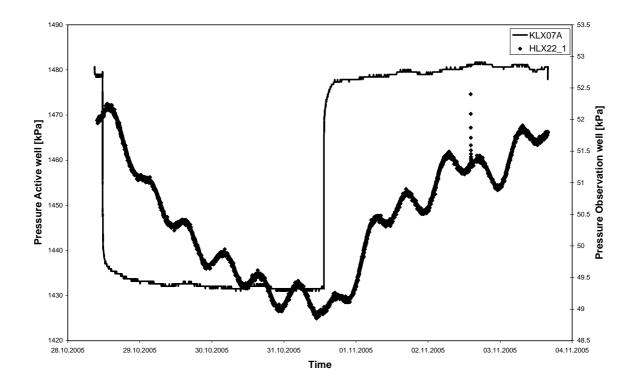
Observed: HLX22_1 86.00-163.20 m

APPENDIX 7-1-6

KLX07A Section 103.20-193.20 m pumped HLX22_1 86.00-163.20 m observed

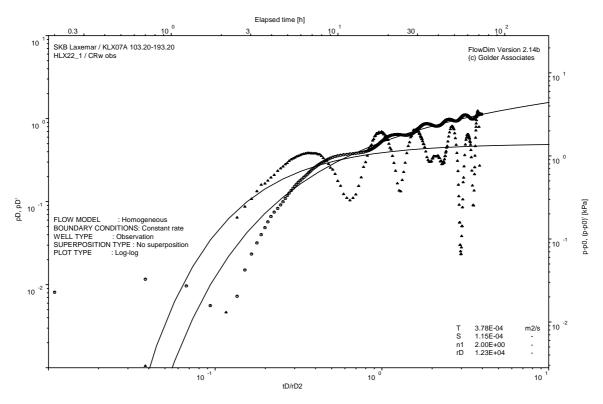
Pumped: KLX07A 103.20-193.20 m Page 7-1-6/2

Observed: HLX22_1 86.00-163.20 m

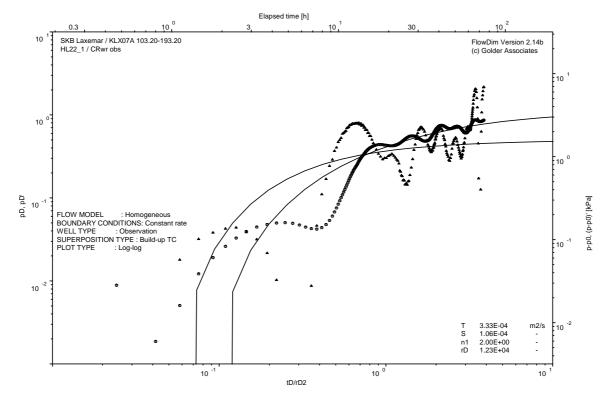


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX22_1 86.00-163.20 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX22_1 86.00-163.20 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX22_1 86.00-163.20 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX22_1 86.00-163.20 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-7/1

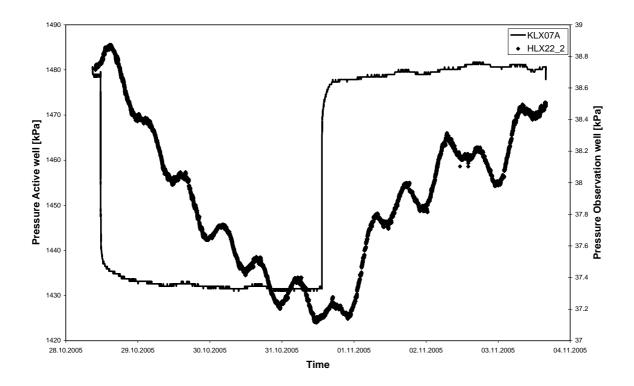
Observed: HLX22_2 9.19-85.00 m

APPENDIX 7-1-7

KLX07A Section 103.20-193.20 m pumped HLX22_2 9.19-85.00 m observed

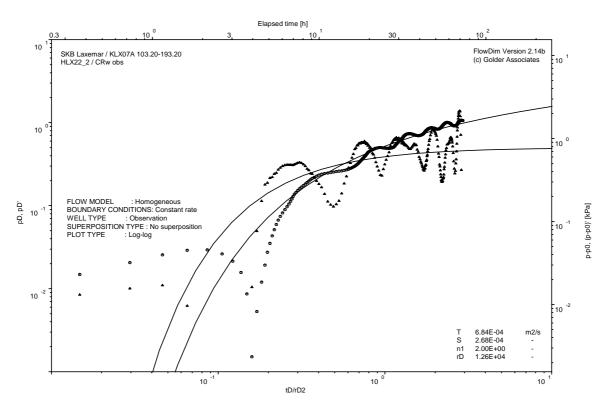
Pumped: KLX07A 103.20-193.20 m Page 7-1-7/2

Observed: HLX22_2 9.19-85.00 m

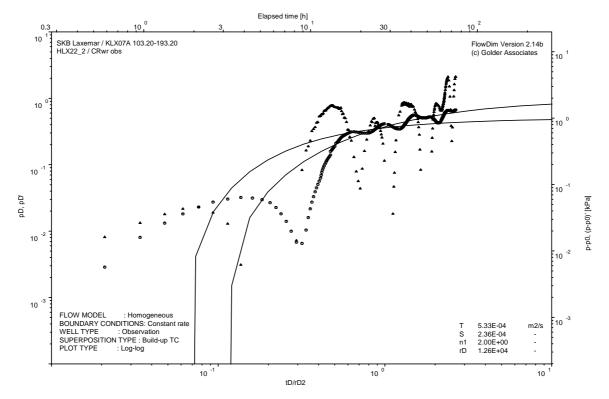


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX22_2 9.19-85.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX22_2 9.19-85.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX22_2 9.19-85.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX22_2 9.19-85.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-8/1

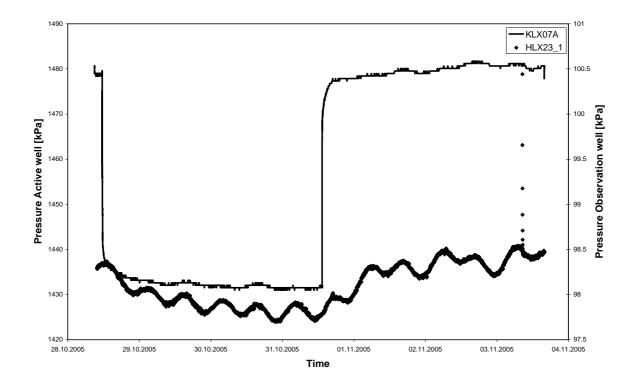
Observed: HLX23_1 61.00-160.20 m

APPENDIX 7-1-8

KLX07A Section 103.20-193.20 m pumped HLX23_1 61.00-160.20 m observed

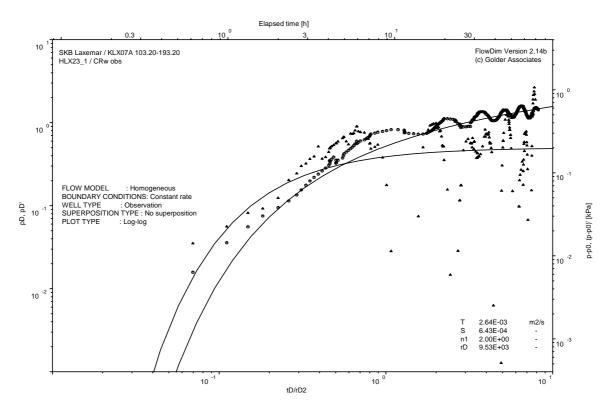
Pumped: KLX07A 103.20-193.20 m Page 7-1-8/2

Observed: HLX23_1 61.00-160.20 m

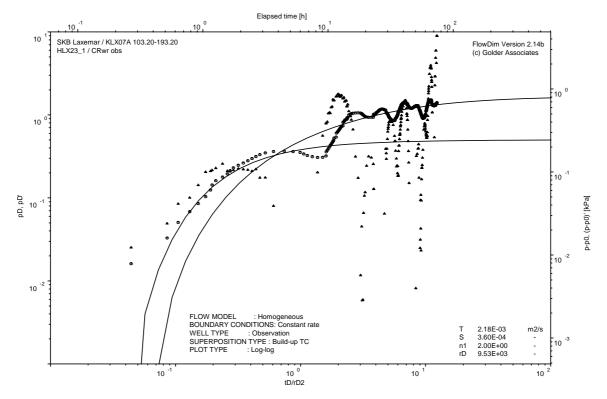


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX23_1 61.00-160.20 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX23_1 61.00-160.20 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX23_1 61.00-160.20 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX23_1 61.00-160.20 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-9/1

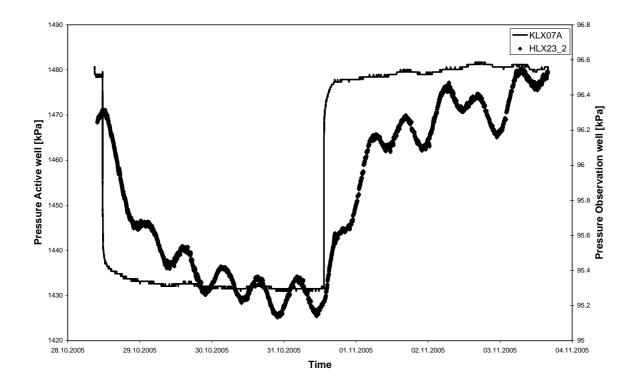
Observed: HLX23_2 6.10-60.00 m

APPENDIX 7-1-9

KLX07A Section 103.20-193.20 m pumped HLX23_2 6.10-60.00 m observed

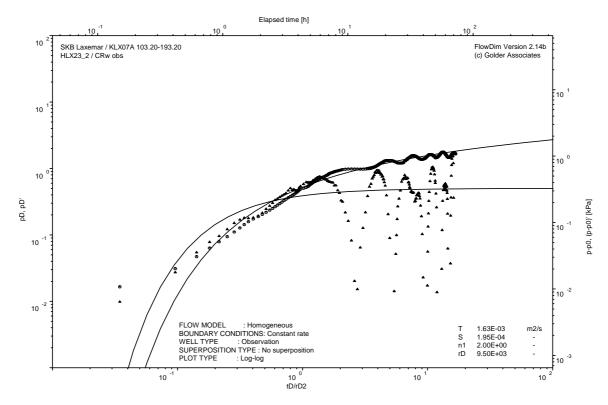
Pumped: KLX07A 103.20-193.20 m Page 7-1-9/2

Observed: HLX23_2 6.10-60.00 m

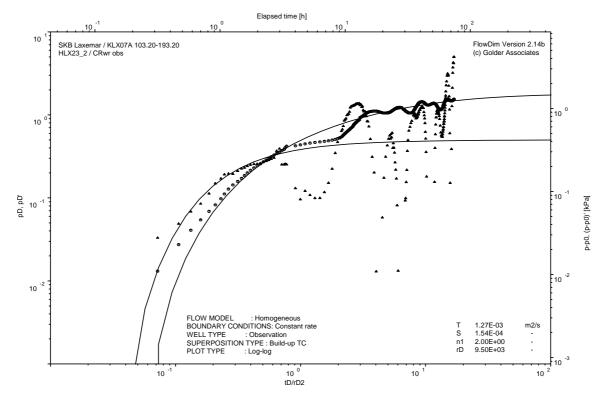


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX23_2 6.10-60.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX23_2 6.10-60.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX23_2 6.10-60.00~m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX23_2 6.10-60.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-10/1

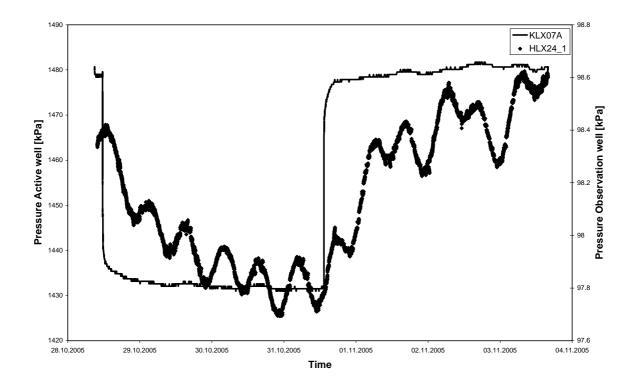
Observed: HLX24_1 41.00-175.20 m

APPENDIX 7-1-10

KLX07A Section 103.20-193.20 m pumped HLX24_1 41.00-175.20 m observed

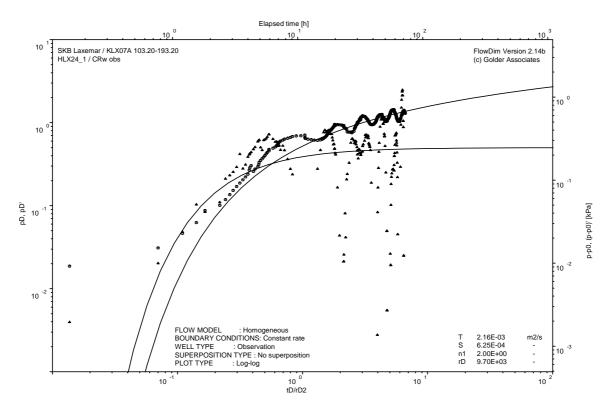
Pumped: KLX07A 103.20-193.20 m Page 7-1-10/2

Observed: HLX24_1 41.00-175.20 m

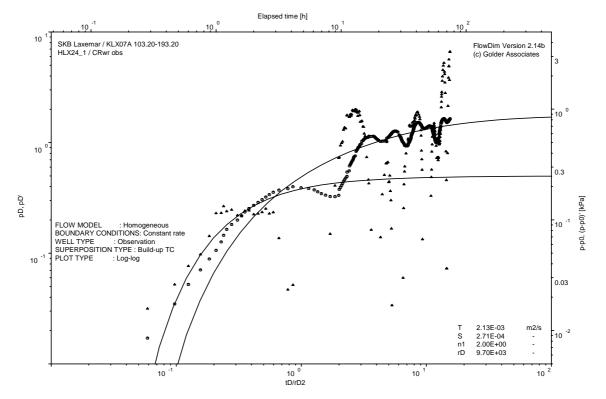


Pressure vs. time; KLX07A 103.20-193.20 m pumped and HLX24_1 41.00-175.20 m observed

Pumped: KLX07A 103.20-193.20 m Observed: HLX24_1 41.00-175.20 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX24_1 41.00-175.20 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and HLX24_1 41.00-175.20 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-11/1

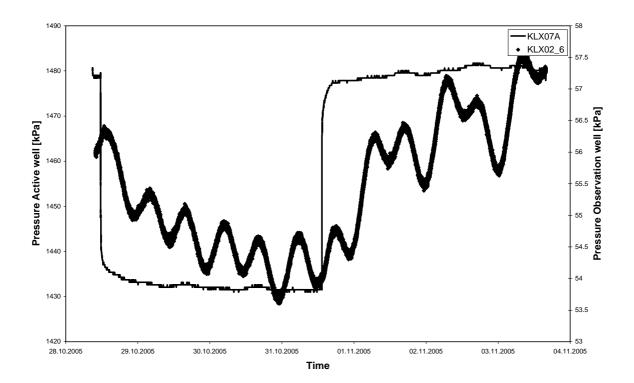
Observed: KLX02_6 348.00-451.00 m

APPENDIX 7-1-11

KLX07A Section 103.20-193.20 m pumped KLX02_6 348.00-451.00 m observed

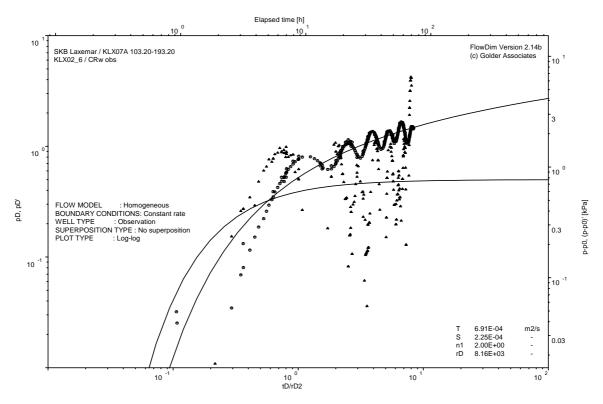
Pumped: KLX07A 103.20-193.20 m Page 7-1-11/2

Observed: KLX02_6 348.00-451.00 m

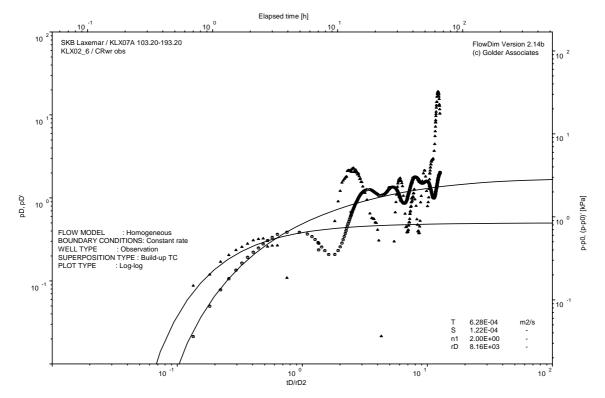


Pressure vs. time; KLX07A 103.20-193.20 m pumped and KLX02_6 348.00-451.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: KLX02_6 348.00-451.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX02_6 348.00-451.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX02_6 348.00-451.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-12/1

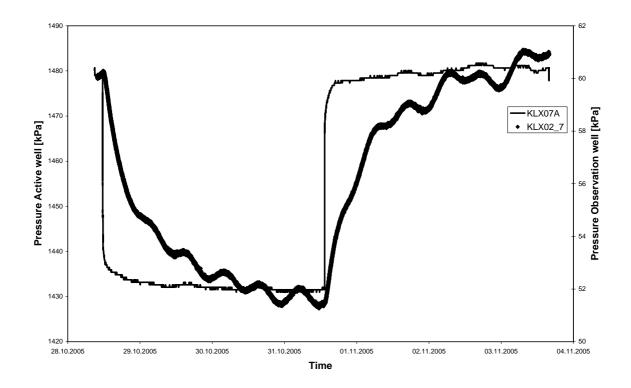
Observed: KLX02_7 209.00-347.00 m

APPENDIX 7-1-12

KLX07A Section 103.20-193.20 m pumped KLX02_7 209.00-347.00 m observed

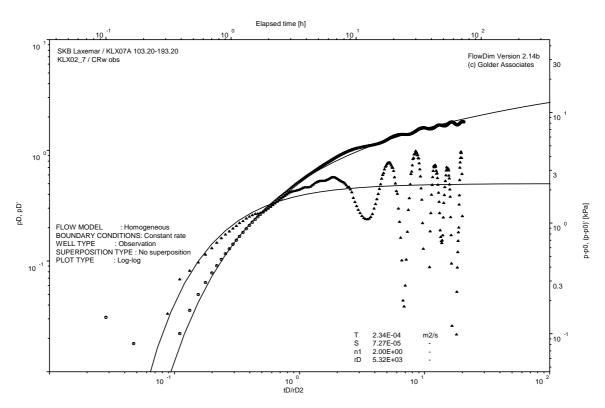
Page 7-1-12/2

Pumped: KLX07A 103.20-193.20 m Observed: KLX02_7 209.00-347.00 m

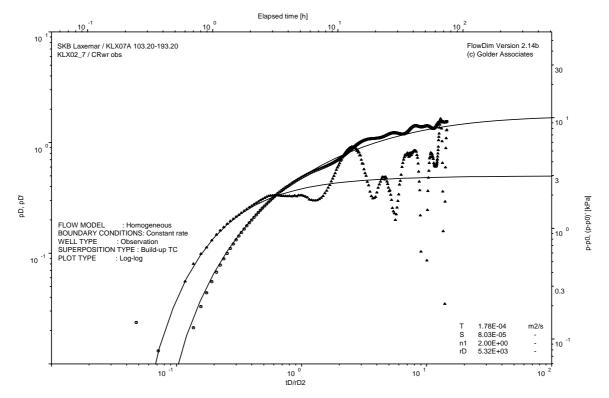


Pressure vs. time; KLX07A 103.20-193.20 m pumped and KLX02_7 209.00-347.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: KLX02_7 209.00-347.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX02_7 209.00-347.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX02_7 209.00-347.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-13/1

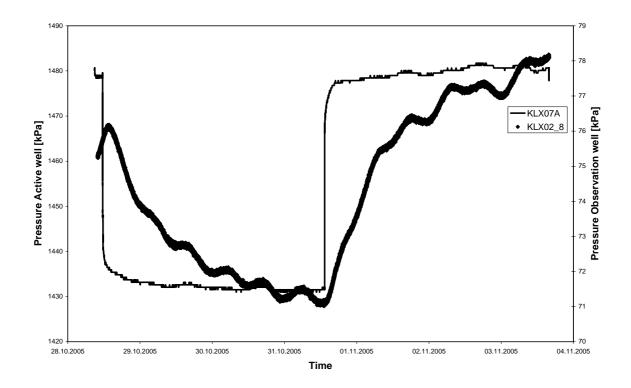
Observed: KLX02_8 202.95-208.00 m

APPENDIX 7-1-13

KLX07A Section 103.20-193.20 m pumped KLX02_8 202.95-208.00 m observed

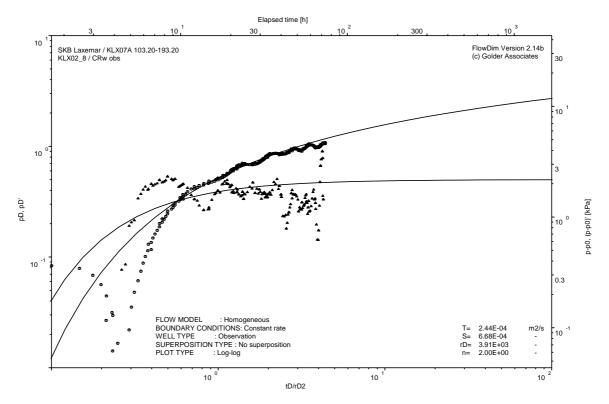
Page 7-1-13/2

Pumped: KLX07A 103.20-193.20 m Observed: KLX02_8 202.95-208.00 m

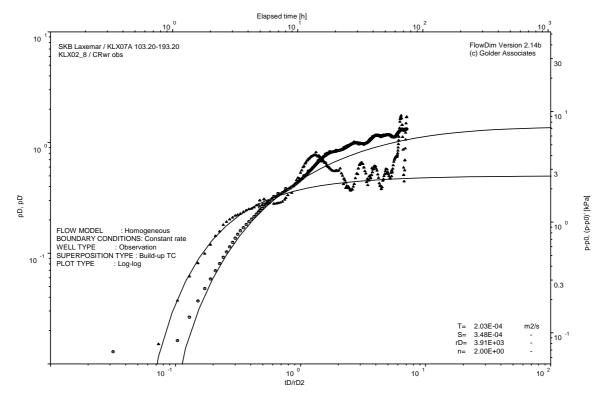


Pressure vs. time; KLX07A 103.20-193.20 m pumped and KLX02_8 202.95-208.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: KLX02_8 202.95-208.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX02_8 202.95-208.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX02_8 202.95-208.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-14/1

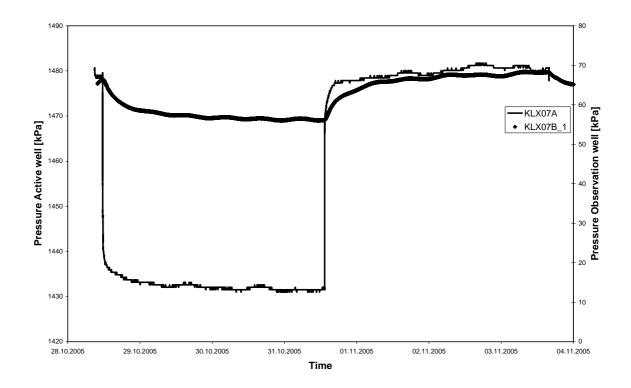
Observed: KLX07B_1 112.00-200.00 m

APPENDIX 7-1-14

KLX07A Section 103.20-193.20 m pumped KLX07B_1 112.00-200.00 m observed

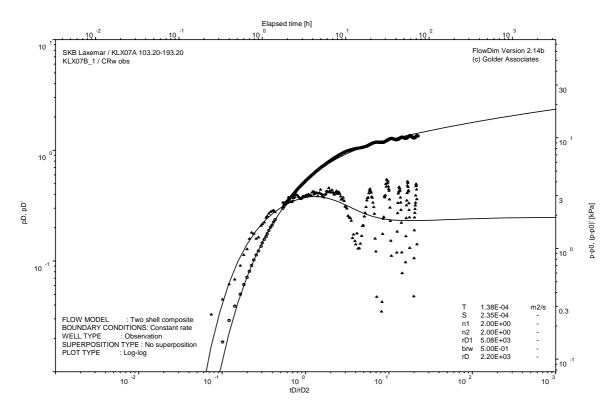
Page 7-1-14/2

Pumped: KLX07A 103.20-193.20 m Observed: KLX07B_1 112.00-200.00 m

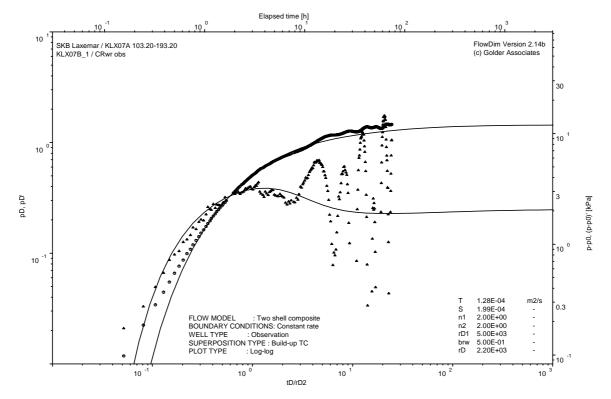


Pressure vs. time; KLX07A 103.20-193.20 m pumped and KLX07B_1 112.0-200.00 m observed

Pumped: KLX07A 103.20-193.20 m Observed: KLX07B_1 112.00-200.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped KLX07B_1 112.0-200.00 m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX07B_1 112.0-200.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-15/1

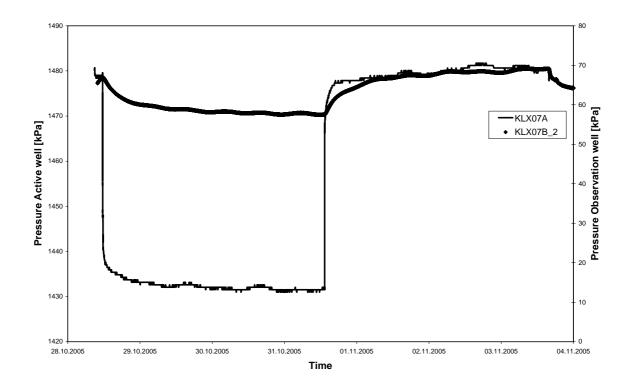
Observed: KLX07B_2 49.00-111.00 m

APPENDIX 7-1-15

KLX07A Section 103.20-193.20 m pumped KLX07B_2 49.00-111.00 m observed

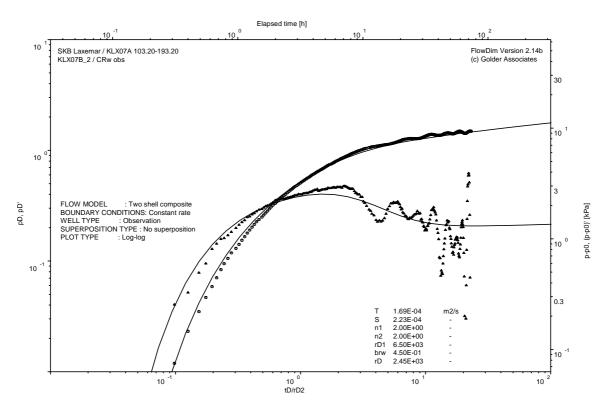
Page 7-1-15/2

Pumped: KLX07A 103.20-193.20 m Observed: KLX07B_2 49.00-111.00 m

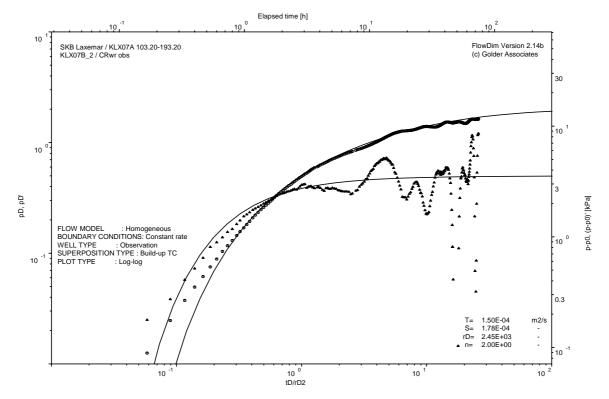


Pressure vs. time; KLX07A 103.20-193.20 m pumped and KLX07B_2 49.00-111.00~m observed

Pumped: KLX07A 103.20-193.20 m Observed: KLX07B_2 49.00-111.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped KLX07B_2 49.00-111.00~m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX07B_2 49.00-111.00 m observed

Pumped: KLX07A 103.20-193.20 m Page 7-1-16/1

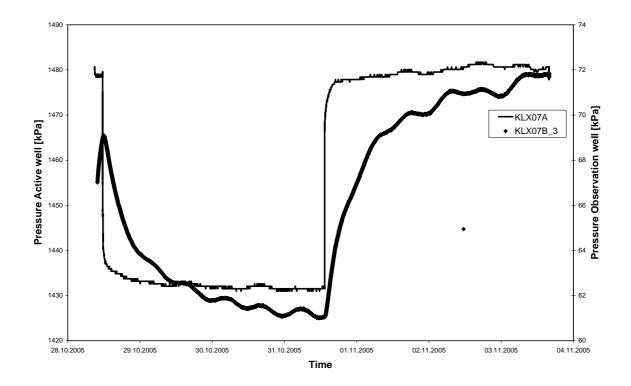
Observed: KLX07B_3 0.00-48.00 m

APPENDIX 7-1-16

KLX07A Section 103.20-193.20 m pumped KLX07B_3 0.00-48.00 m observed

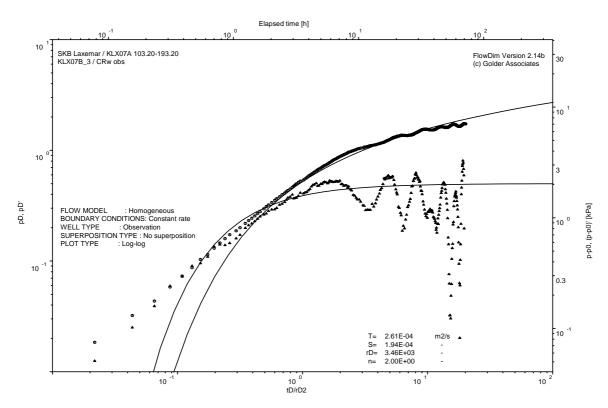
Page 7-1-16/2

Pumped: KLX07A 103.20-193.20 m Observed: KLX07B_3 0.00-48.00 m

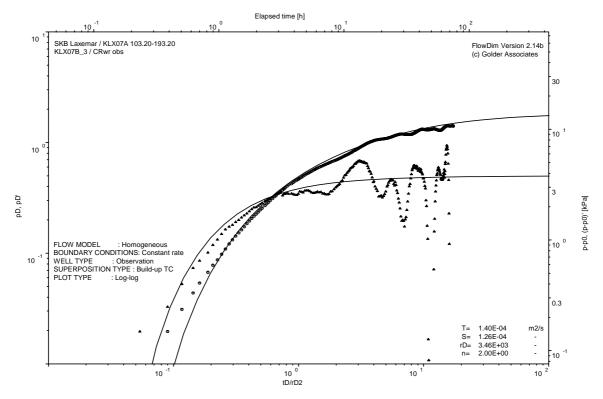


Pressure vs. time; KLX07A 103.20-193.20 m pumped and KLX07B_3 0.00-48.00~m observed

Pumped: KLX07A 103.20-193.20 m Observed: KLX07B_3 0.00-48.00 m



CRw phase; log-log match; KLX07A 103.20-193.20 m pumped KLX07B_3 0.00-48.00~m observed



CRwr phase; log-log match; KLX07A 103.20-193.20 m pumped and KLX07B_3 0.00-48.00 m observed

Borehole: KLX07A

APPENDIX 7-2

KLX07A Section 193.00-313.00 m pumped

Pumped: KLX07A 193.00-313.00 m Page 7-2-1/1

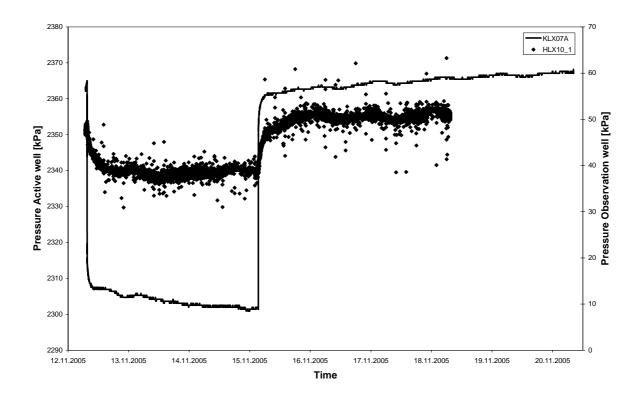
Observed: HLX10_1 3.00-85.00 m

APPENDIX 7-2-1

KLX07A Section 193.00-313.00 m pumped HLX10_1 3.00-85.00 m observed

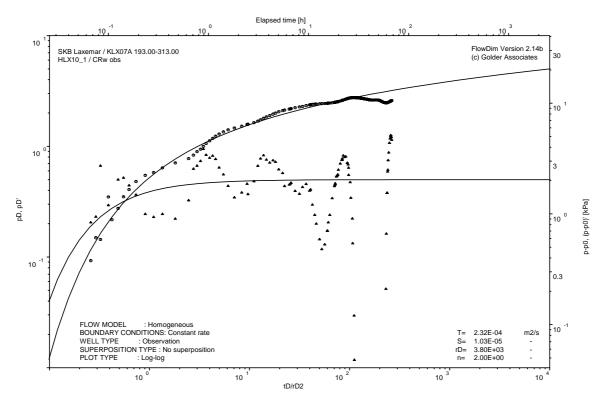
Pumped: KLX07A 193.00-313.00 m Page 7-2-1/2

Observed: HLX10_1 3.00-85.00 m

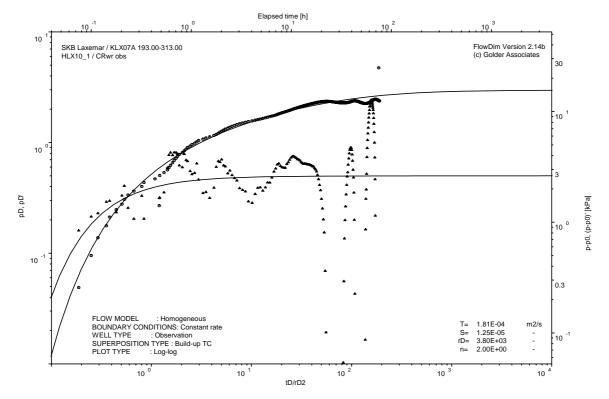


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX10_1 3.00-85.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX10_1 3.00-85.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX10_1 3.00-85.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX10_1 3.00-85.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-2/1

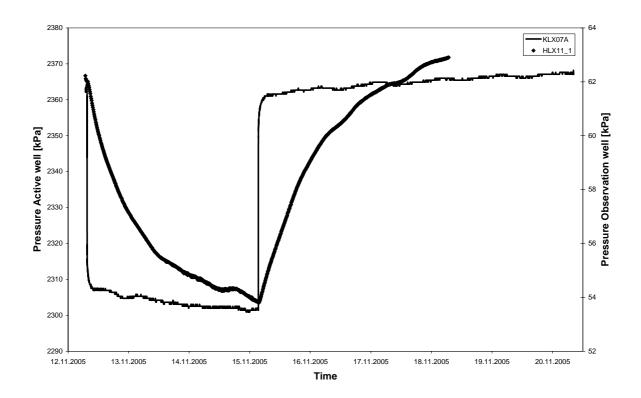
Observed: HLX11_1 17.00-70.00 m

APPENDIX 7-2-2

KLX07A Section 193.00-313.00 m pumped HLX11_1 17.00-70.00 m observed

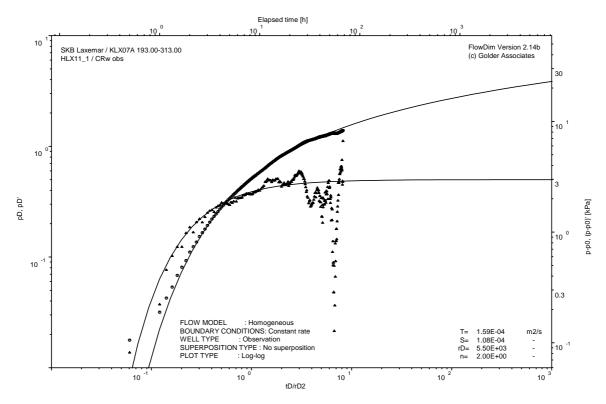
Pumped: KLX07A 193.00-313.00 m Page 7-2-2/2

Observed: HLX11_1 17.00-70.00 m

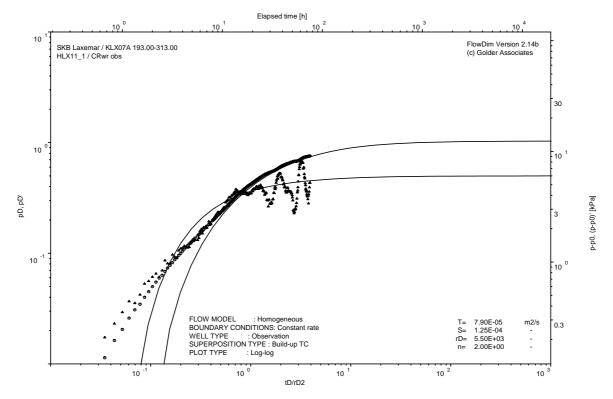


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX11_1 17.00-70.00 m

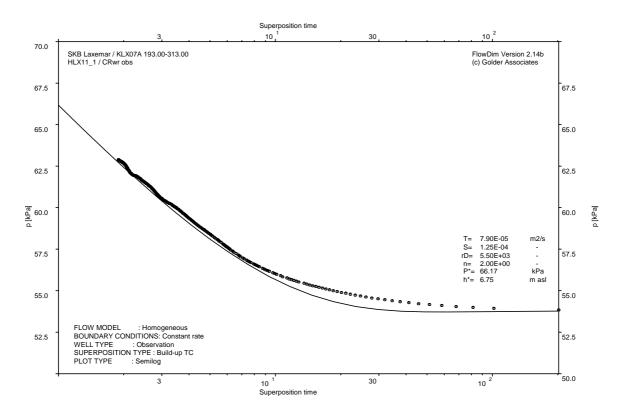


CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX11_1 17.00-70.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX11_1 17.00-70.00 m



CRwr phase; HORNER match; KLX07A 193.00-313.00 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-3/1

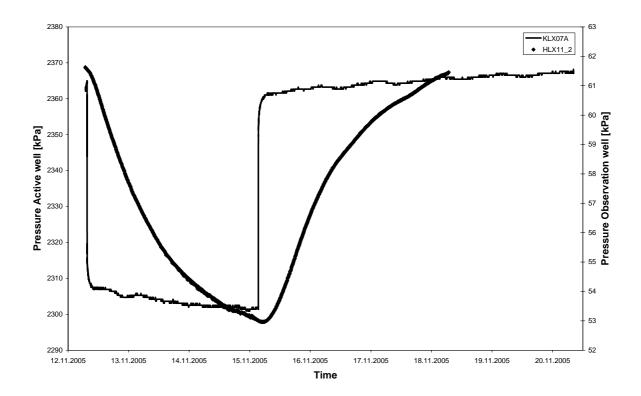
Observed: HLX11_2 6.00-16.00 m

APPENDIX 7-2-3

KLX07A Section 193.00-313.00 m pumped HLX11_2 6.00-16.00 m observed

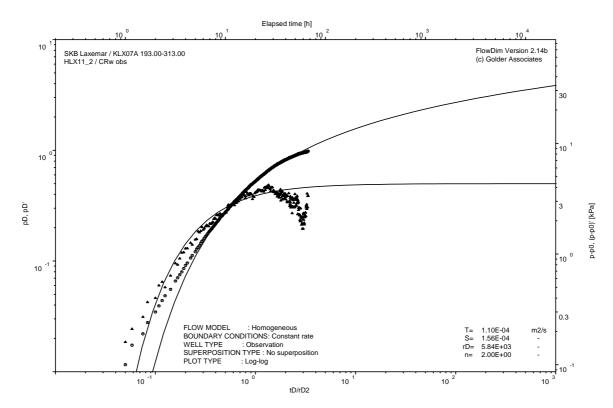
Pumped: KLX07A 193.00-313.00 m Page 7-2-3/2

Observed: HLX11_2 6.00-16.00 m

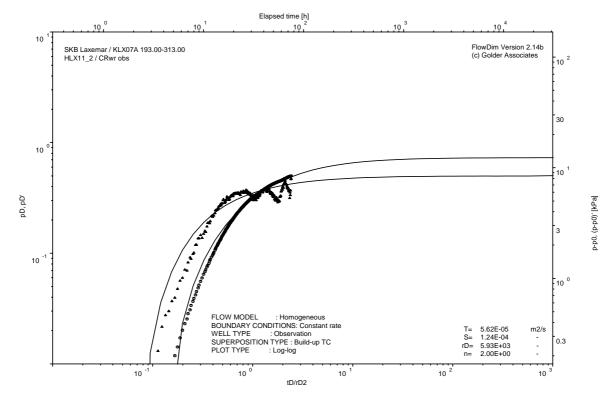


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX11_2 6.00-16.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX11_2 6.00-16.00 m

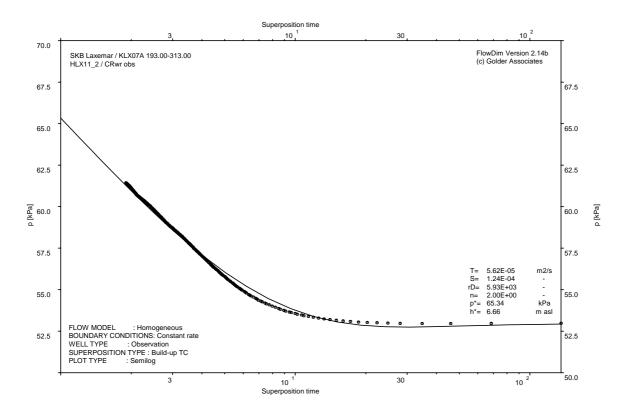


CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX11_2 6.00-16.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX11_2 6.00-16.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX11_2 6.00-16.00 m



CRwr phase; HORNER match; KLX07A 193.00-313.00 m pumped and HLX11_2 6.00-16.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-4/1

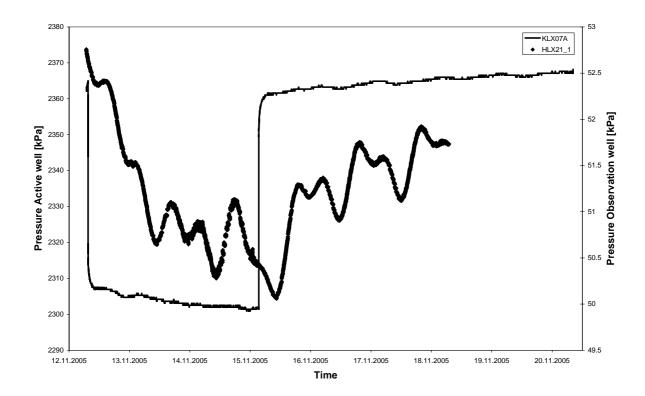
Observed: HLX21_1 81.00-150.00 m

APPENDIX 7-2-4

KLX07A Section 193.00-313.00 m pumped HLX21_1 81.00-150.00 m observed

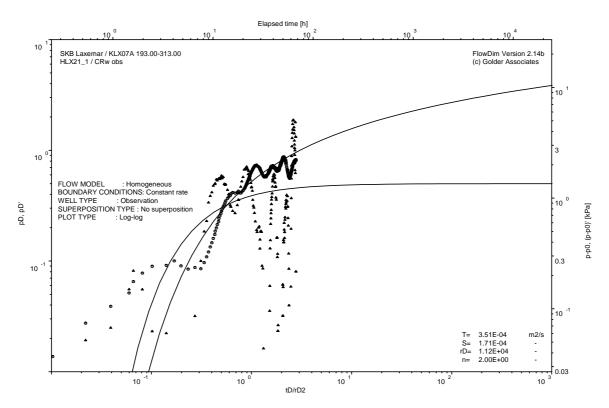
Pumped: KLX07A 193.00-313.00 m Page 7-2-4/2

Observed: HLX21_1 81.00-150.00 m

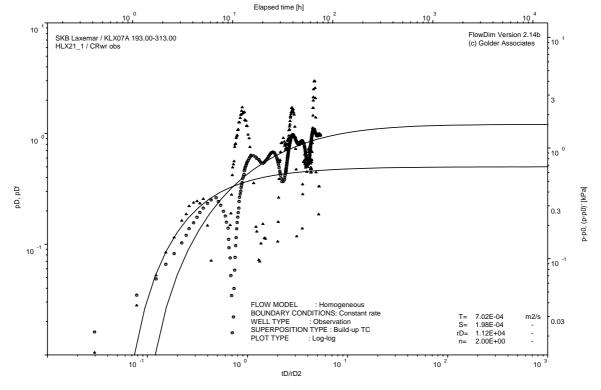


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX21_1 81.00-150.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX21_1 81.00-150.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX21_1 81.00-150.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX21_1 81.00-150.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-5/1

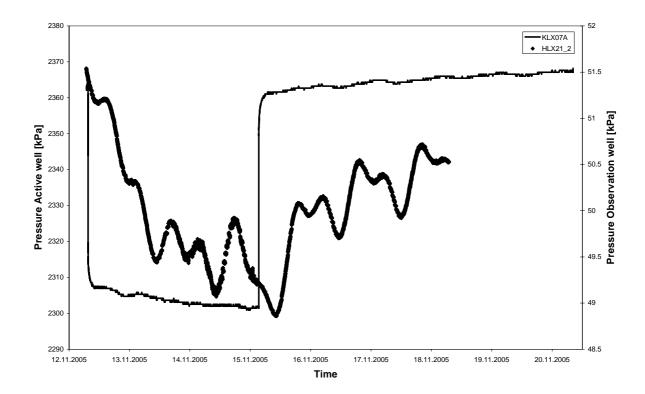
Observed: HLX21_2 9.10-80.00 m

APPENDIX 7-2-5

KLX07A Section 193.00-313.00 m pumped HLX21_2 9.10-80.00 m observed

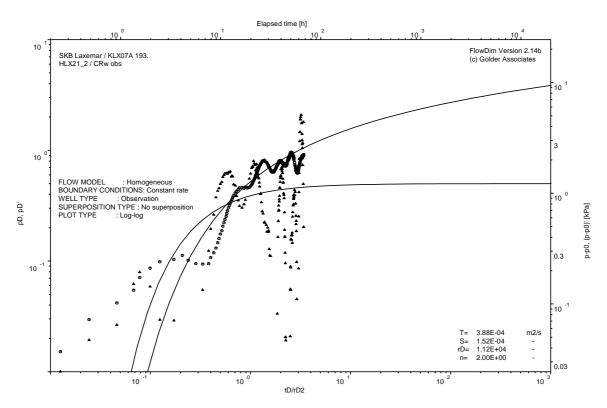
Pumped: KLX07A 193.00-313.00 m Page 7-2-5/2

Observed: HLX21_2 9.10-80.00 m

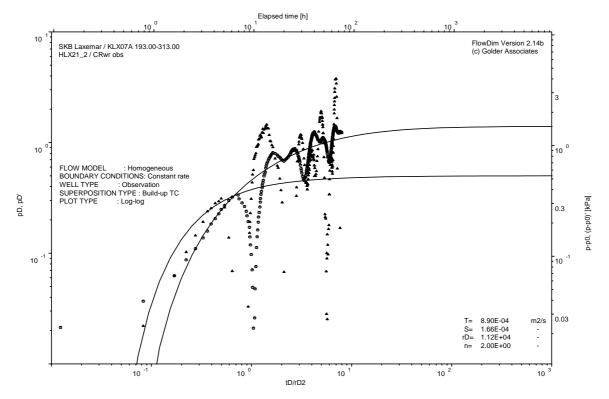


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX21_2 9.10-80.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX21_2 9.10-80.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX21_2 9.10-80.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX21_2 9.10-80.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-6/1

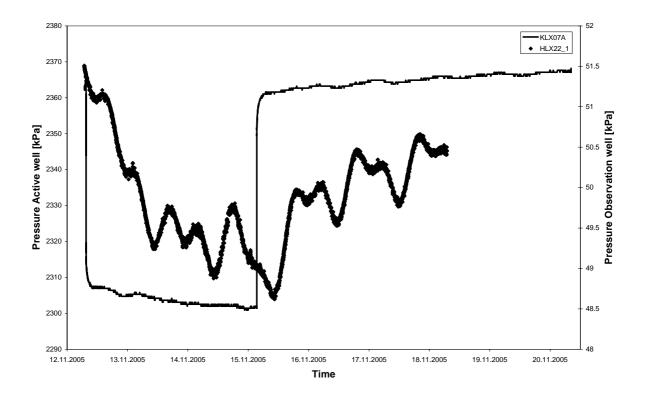
Observed: HLX22_1 86.00-163.20 m

APPENDIX 7-2-6

KLX07A Section 193.00-313.00 m pumped HLX22_1 86.00-163.20 m observed

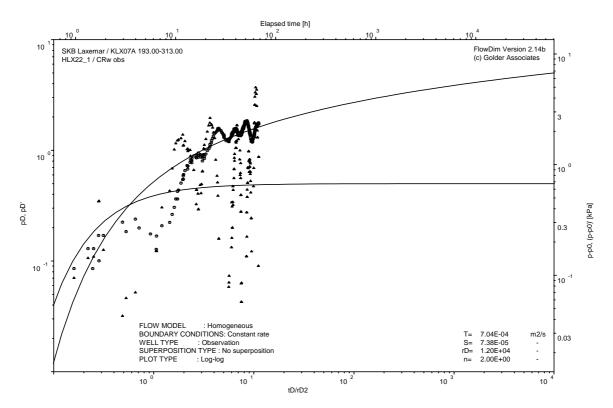
Pumped: KLX07A 193.00-313.00 m Page 7-2-6/2

Observed: HLX22_1 86.00-163.20 m

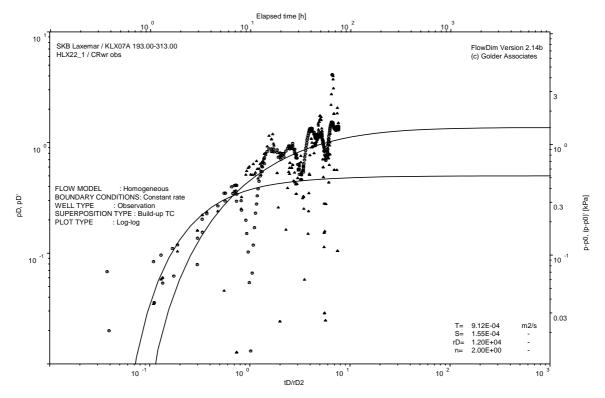


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX22_1 86.00-163.20 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX22_1 86.00-163.20 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX22_1 86.00-163.20 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX22_1 86.00-163.20 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-7/1

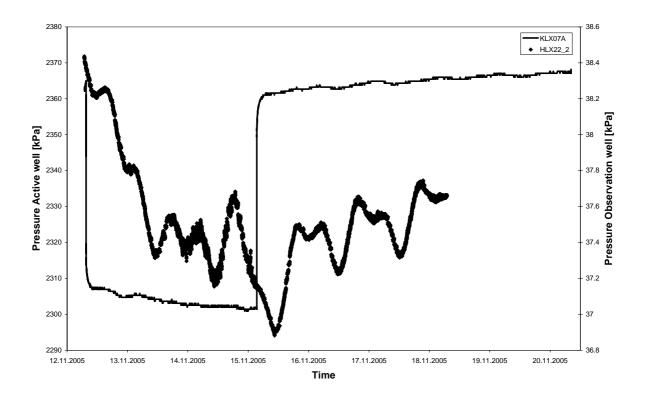
Observed: HLX22_2 9.19-85.00 m

APPENDIX 7-2-7

KLX07A Section 193.00-313.00 m pumped HLX22_2 9.19-85.00 m observed

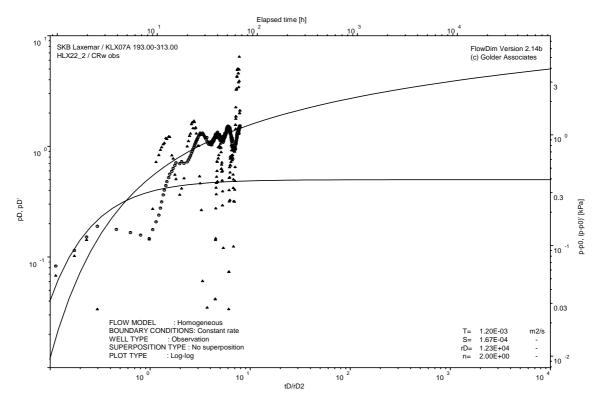
Pumped: KLX07A 193.00-313.00 m Page 7-2-7/2

Observed: HLX22_2 9.19-85.00 m

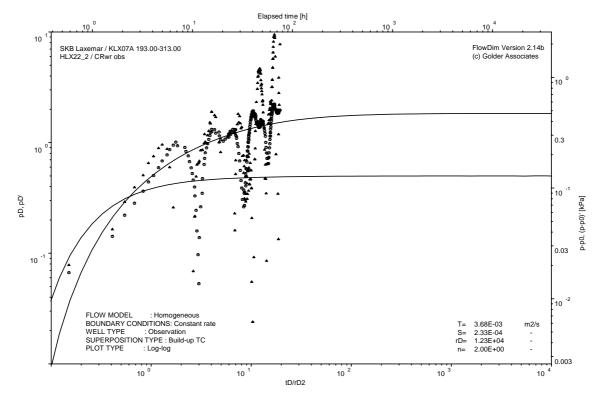


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX22_2 9.19-85.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX22_2 9.19-85.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX22_2 9.19-85.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX22_2 9.19-85.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-8/1

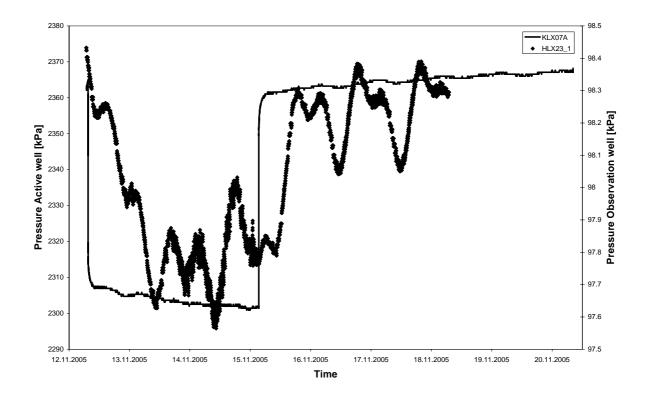
Observed: HLX23_1 61.00-160.20 m

APPENDIX 7-2-8

KLX07A Section 193.00-313.00 m pumped HLX23_1 61.00-160.20 m observed

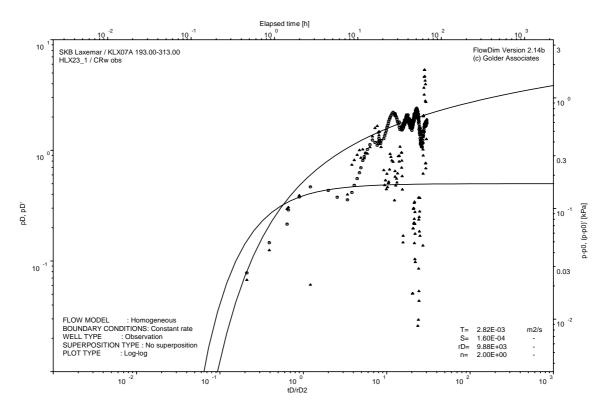
Pumped: KLX07A 193.00-313.00 m Page 7-2-8/2

Observed: HLX23_1 61.00-160.20 m

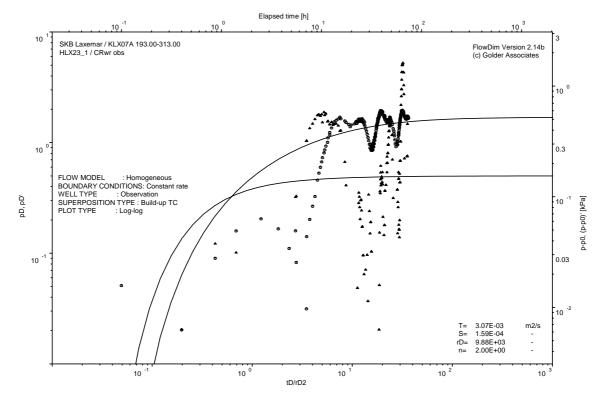


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX23_1 61.00-160.20 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX23_1 61.00-160.20 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX23_1 61.00-160.20 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX23_1 61.00-160.20 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-9/1

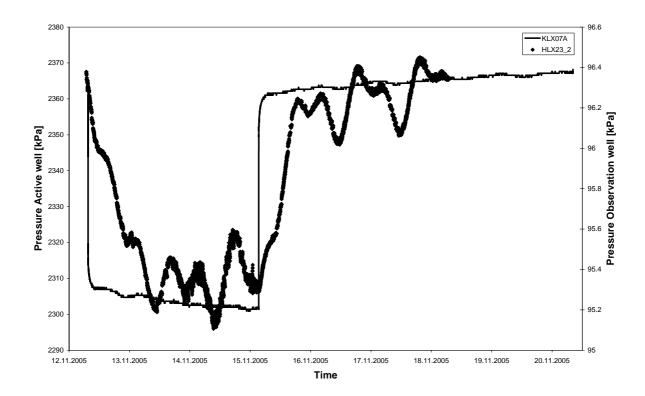
Observed: HLX23_2 6.10-60.00 m

APPENDIX 7-2-9

KLX07A Section 193.00-313.00 m pumped HLX23_2 6.10-60.00 m observed

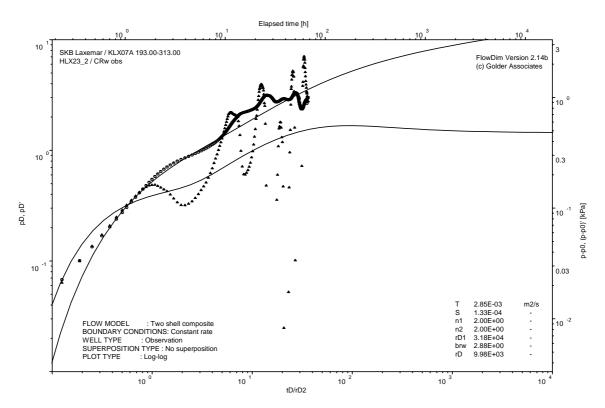
Pumped: KLX07A 193.00-313.00 m Page 7-2-9/2

Observed: HLX23_2 6.10-60.00 m

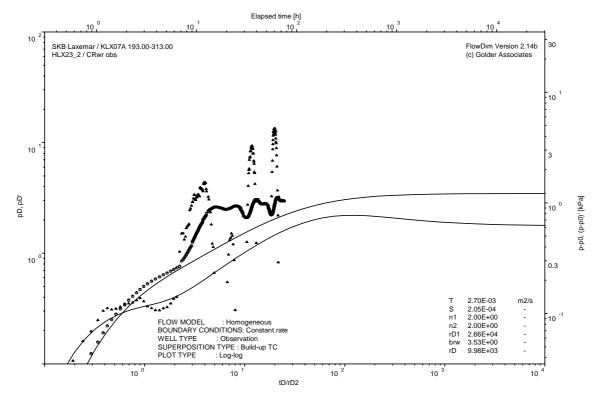


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX23_2 6.10-60.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX23_2 6.10-60.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX23_2 6.10-60.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX23_2 6.10-60.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-10/1

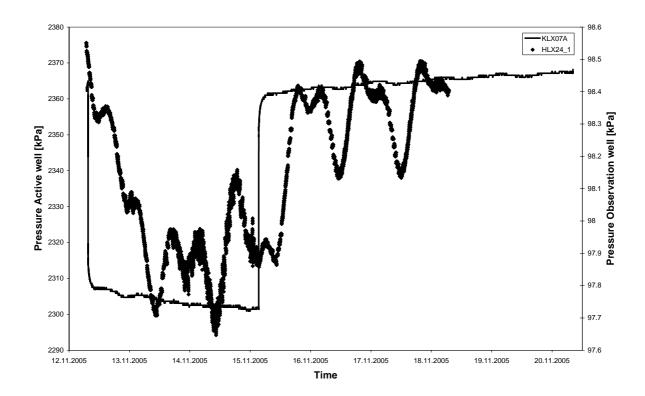
Observed: HLX24_1 41.00-175.20 m

APPENDIX 7-2-10

KLX07A Section 193.00-313.00 m pumped HLX24_1 41.00-175.20 m observed

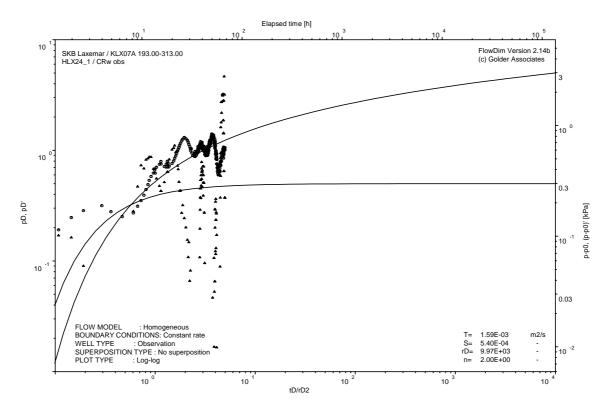
Page 7-2-10/2

Pumped: KLX07A 193.00-313.00 m Observed: HLX24_1 41.00-175.20 m

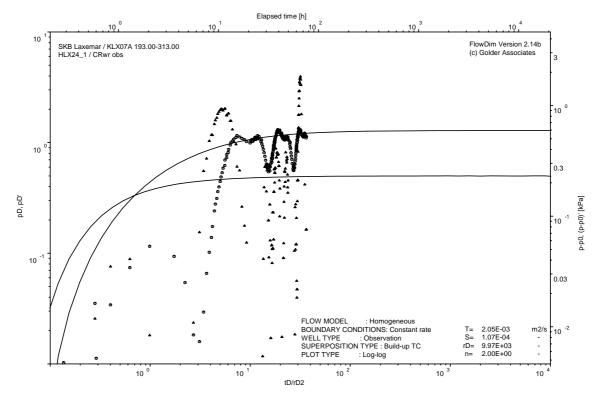


Pressure vs. time; KLX07A 193.00-313.00 m pumped and HLX24_1 41.00-175.20 m observed

Pumped: KLX07A 193.00-313.00 m Observed: HLX24_1 41.00-175.20 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX24_1 41.00-175.20 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and HLX24_1 41.00-175.20 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-11/1

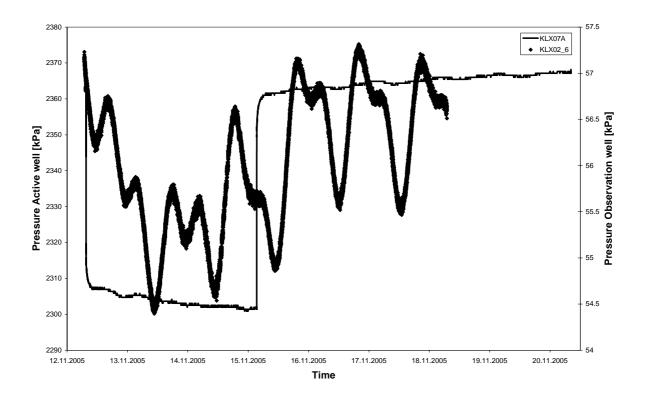
Observed: KLX02_6 348.00-451.00 m

APPENDIX 7-2-11

KLX07A Section 193.00-313.00 m pumped KLX02_6 348.00-451.00 m observed

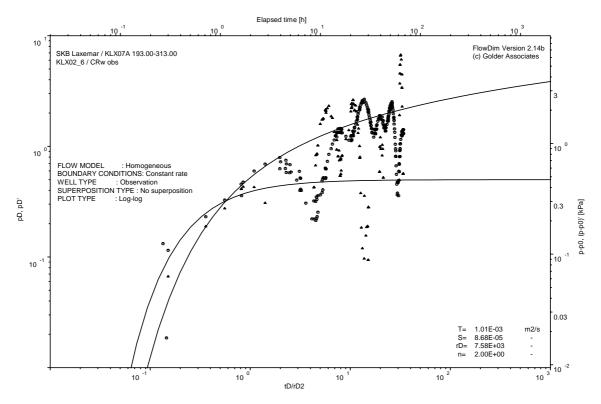
Page 7-2-11/2

Pumped: KLX07A 193.00-313.00 m Observed: KLX02_6 348.00-451.00 m

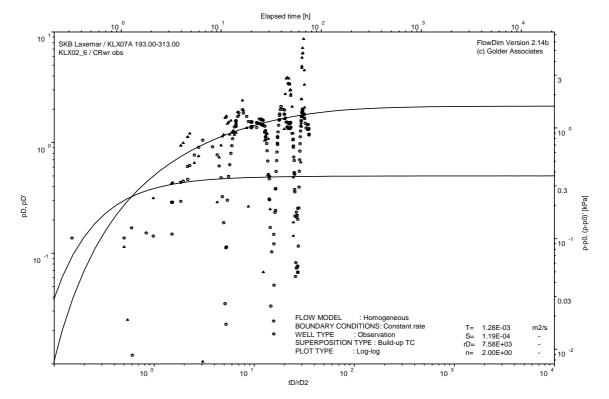


Pressure vs. time; KLX07A 193.00-313.00 m pumped and KLX02_6 348.00-451.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: KLX02_6 348.00-451.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX02_6 348.00-451.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX02_6 348.00-451.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-12/1

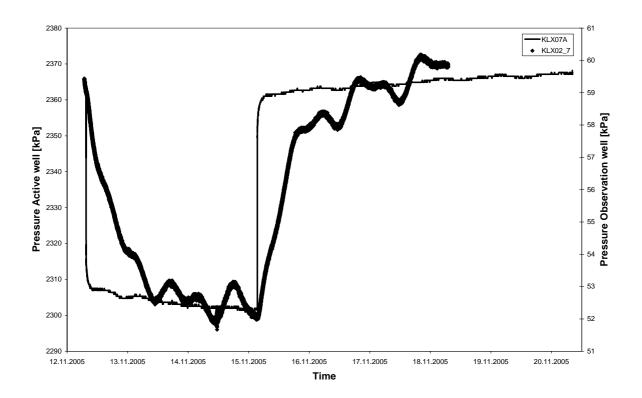
Observed: KLX02_7 209.00-347.00 m

APPENDIX 7-2-12

KLX07A Section 193.00-313.00 m pumped KLX02_7 209.00-347.00 m observed

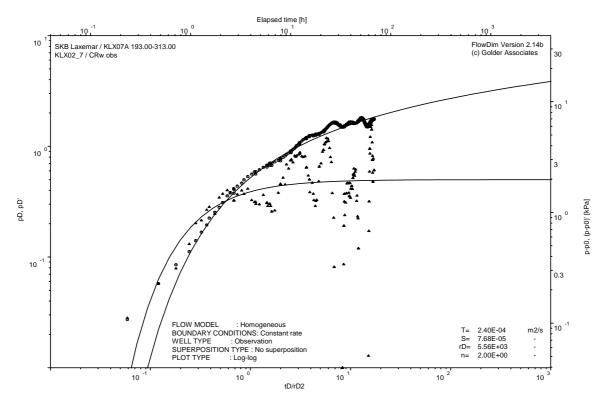
Page 7-2-12/2

Pumped: KLX07A 193.00-313.00 m Observed: KLX02_7 209.00-347.00 m

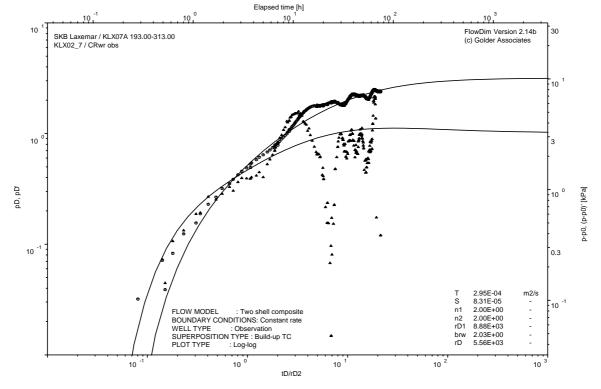


Pressure vs. time; KLX07A 193.00-313.00 m pumped and KLX02_7 209.00-347.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: KLX02_7 209.00-347.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX02_7 209.00-347.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX02_7 209.00-347.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-13/1

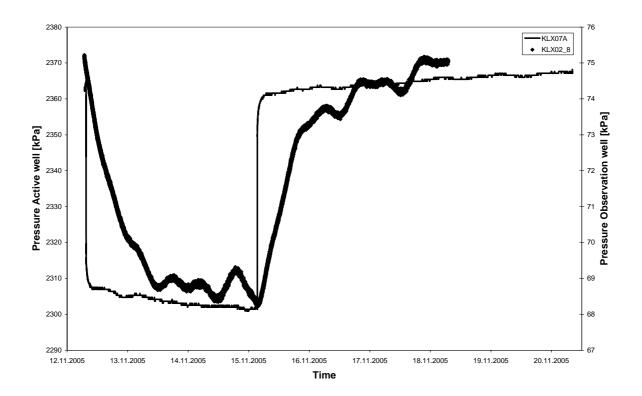
Observed: KLX02_8 202.95-208.00 m

APPENDIX 7-2-13

KLX07A Section 193.00-313.00 m pumped KLX02_8 202.95-208.00 m observed

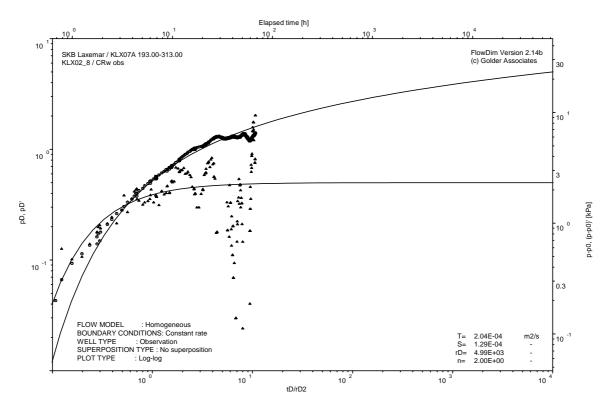
Page 7-2-13/2

Pumped: KLX07A 193.00-313.00 m Observed: KLX02_8 202.95-208.00 m

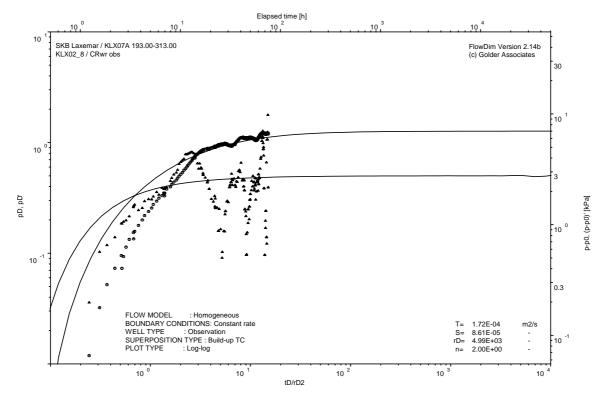


Pressure vs. time; KLX07A 193.00-313.00 m pumped and KLX02_8 202.95-208.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: KLX02_8 202.95-208.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX02_8 202.95-208.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX02_8 202.95-208.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-14/1

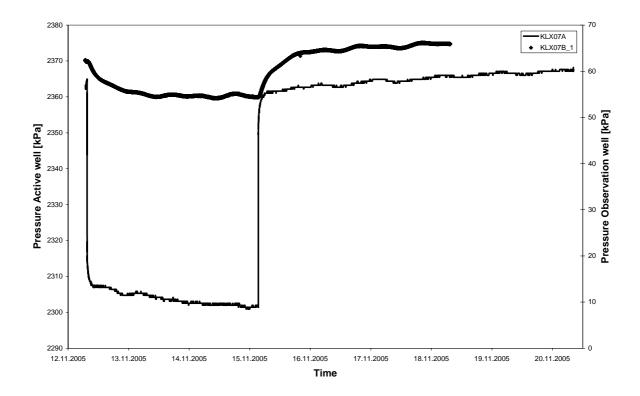
Observed: KLX07B_1 112.00-200.00 m

APPENDIX 7-2-14

KLX07A Section 193.00-313.00 m pumped KLX07B_1 112.00-200.00 m observed

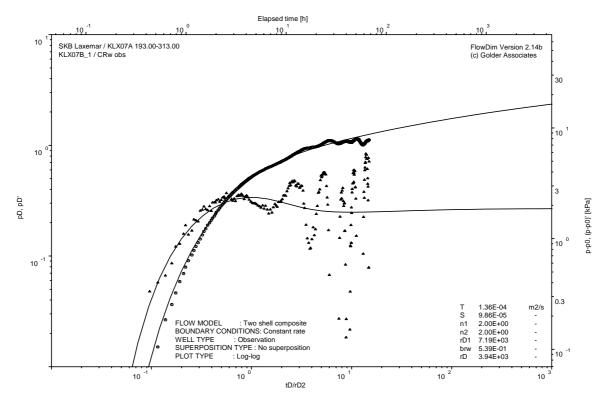
Page 7-2-14/2

Pumped: KLX07A 193.00-313.00 m Observed: KLX07B_1 112.00-200.00 m

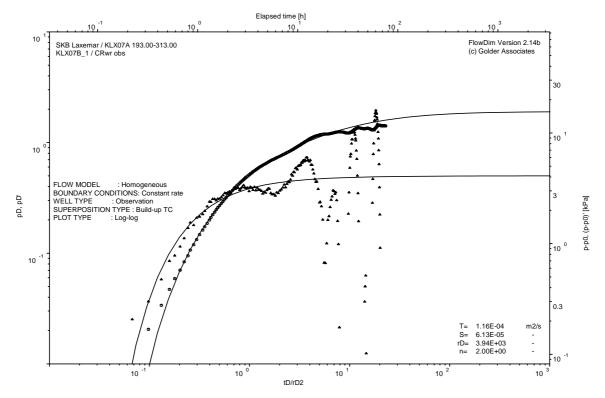


Pressure vs. time; KLX07A 193.00-313.00 m pumped and KLX07B_1 112.00-200.00 m observed

Pumped: KLX07A 193.00-313.00 m Observed: KLX07B_1 112.00-200.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX07B_1 112.00-200.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX07B_1 112.00-200.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-15/1

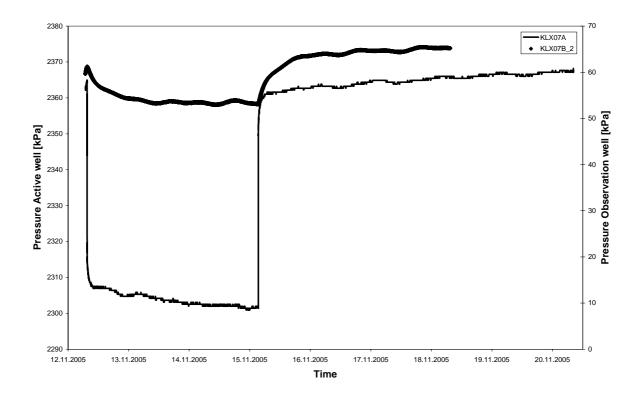
Observed: KLX07B_2 49.00-111.00 m

APPENDIX 7-2-15

KLX07A Section 193.00-313.00 m pumped KLX07B_2 49.00-111.00 m observed

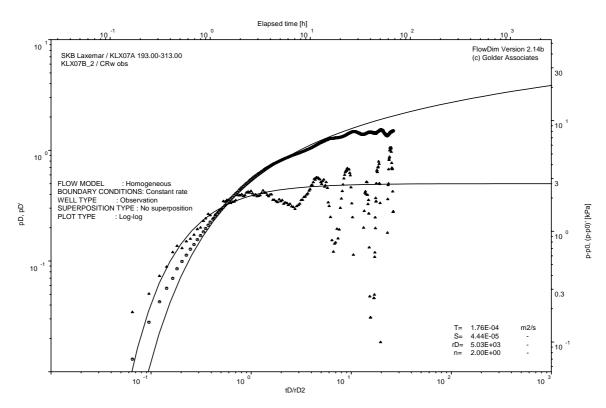
Page 7-2-15/2

Pumped: KLX07A 193.00-313.00 m Observed: KLX07B_2 49.00-111.00 m

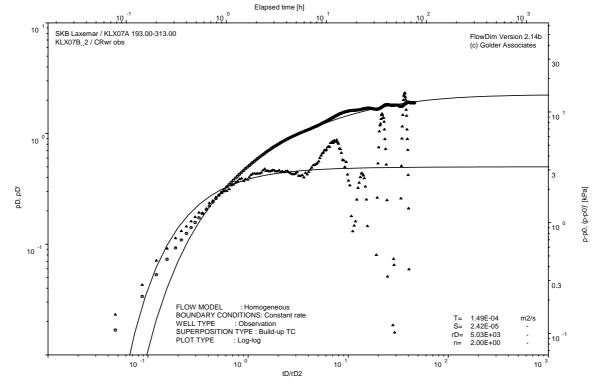


Pressure vs. time; KLX07A 193.00-313.00 m pumped and KLX07B_2 49.00-111.00~m observed

Pumped: KLX07A 193.00-313.00 m Observed: KLX07B_2 49.00-111.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX07B_2 49.00-111.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX07B_2 49.00-111.00 m observed

Pumped: KLX07A 193.00-313.00 m Page 7-2-16/1

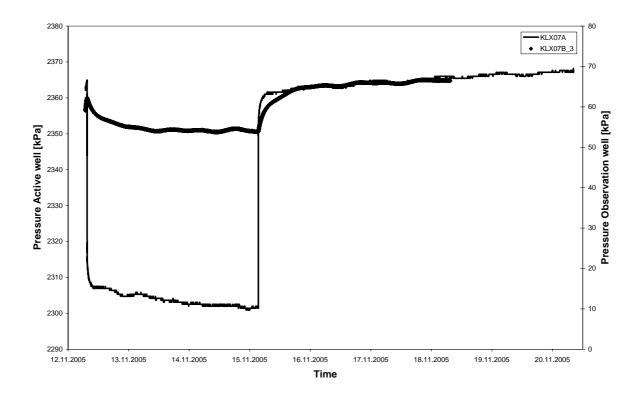
Observed: KLX07B_3 0.00-48.00 m

APPENDIX 7-2-16

KLX07A Section 193.00-313.00 m pumped KLX07B_3 0.00-48.00 m observed

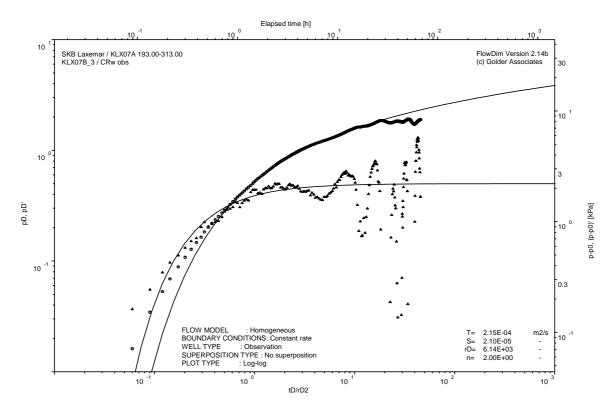
Page 7-2-16/2

Pumped: KLX07A 193.00-313.00 m Observed: KLX07B_3 0.00-48.00 m

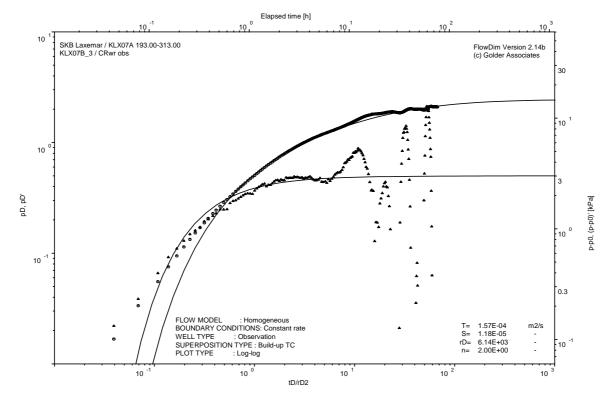


Pressure vs. time; KLX07A 193.00-313.00 m pumped and KLX07B_3 0.00-48.00~m observed

Pumped: KLX07A 193.00-313.00 m Observed: KLX07B_3 0.00-48.00 m



CRw phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX07B_3 0.00-48.00 m observed



CRwr phase; log-log match; KLX07A 193.00-313.00 m pumped and KLX07B_3 0.00-48.00 m observed

Borehole: KLX07A

APPENDIX 7-3

KLX07A Section 335.00-455.00 m pumped

Pumped: KLX07A 335.00-455.00 m Page 7-3-1/1

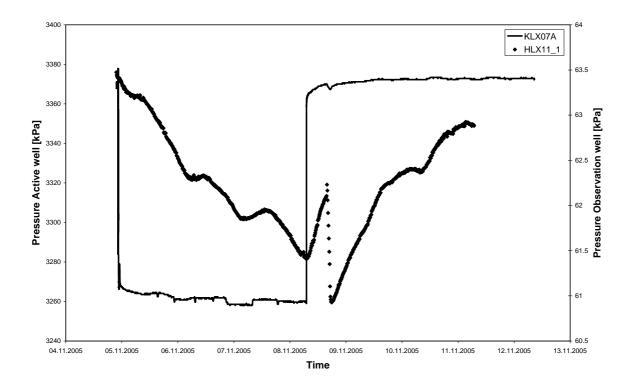
Observed: HLX11_1 17.00-70.00 m

APPENDIX 7-3-1

KLX07A Section 335.00-455.00 m pumped HLX11_1 17.00-70.00 m observed

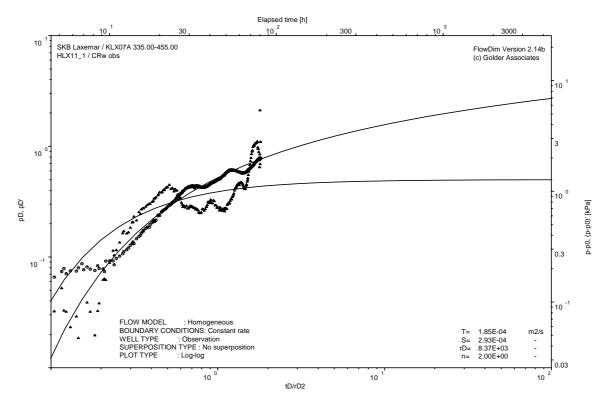
Pumped: KLX07A 335.00-455.00 m Page 7-3-1/2

Observed: HLX11_1 17.00-70.00 m

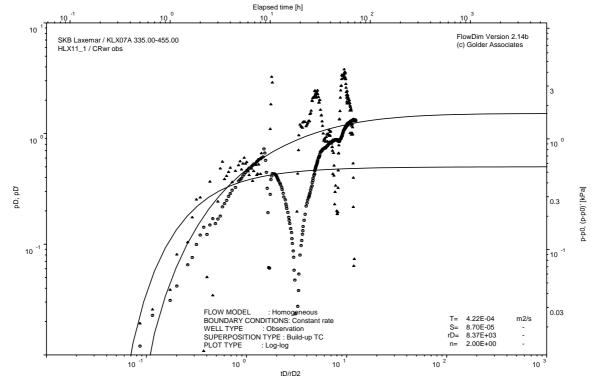


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX11_1 17.00-70.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX11_1 17.00-70.00 m observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX11_1 17.00-70.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-2/1

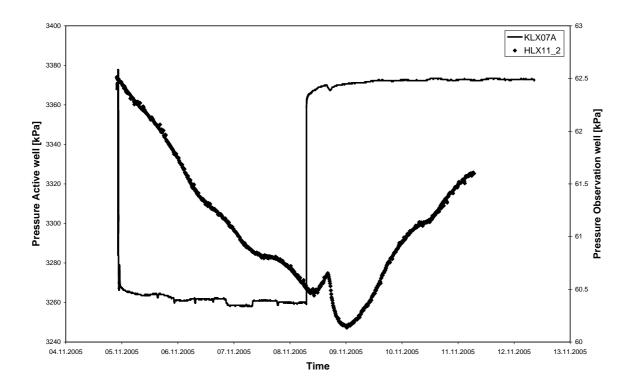
Observed: HLX11_2 6.00-16.00 m

APPENDIX 7-3-2

KLX07A Section 335.00-455.00 m pumped HLX11_2 6.00-16.00 m observed

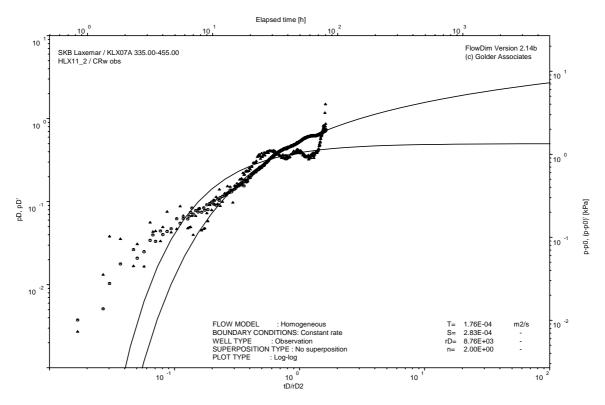
Pumped: KLX07A 335.00-455.00 m Page 7-3-2/2

Observed: HLX11_2 6.00-16.00 m



Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX11_2 6.00-16.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX11_2 6.00-16.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX11_2 6.00-16.00 m observed

Not analysable

Pumped: KLX07A 335.00-455.00 m Page 7-3-3/1

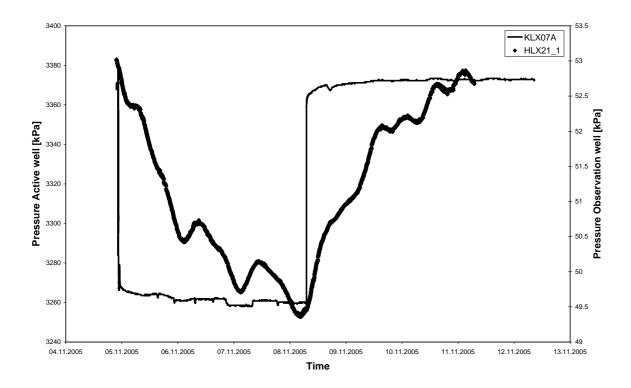
Observed: HLX21_1 81.00-150.00 m

APPENDIX 7-3-3

KLX07A Section 335.00-455.00 m pumped HLX21_1 81.00-150.00 m observed

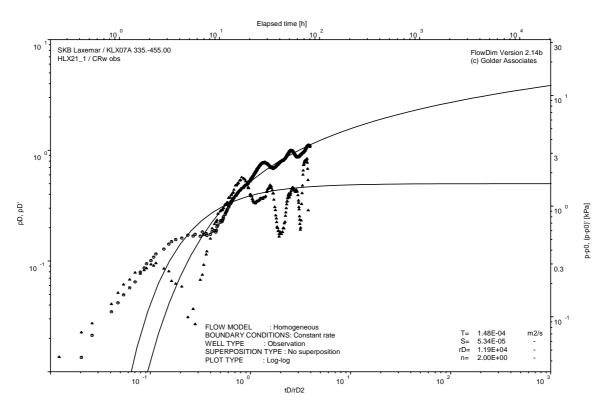
Pumped: KLX07A 335.00-455.00 m Page 7-3-3/2

Observed: HLX21_1 81.00-150.00 m

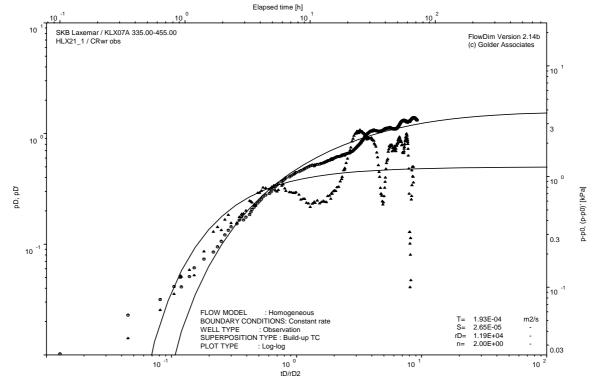


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX21_1 81.00-150.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX21_1 81.00-150.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX21_1 81.00-150.00 m observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX21_1 81.00-150.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-4/1

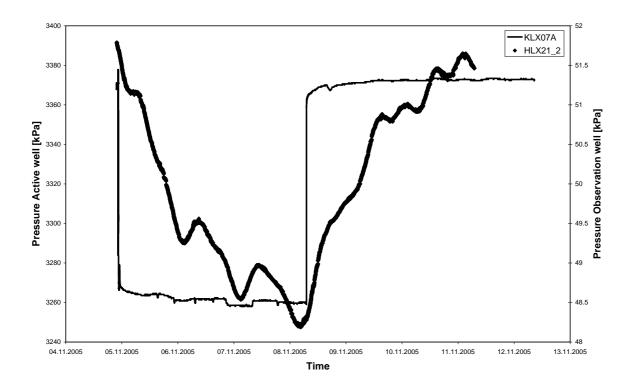
Observed: HLX21_2 9.10-80.00 m

APPENDIX 7-3-4

KLX07A Section 335.00-455.00 m pumped HLX21_2 9.10-80.00 m observed

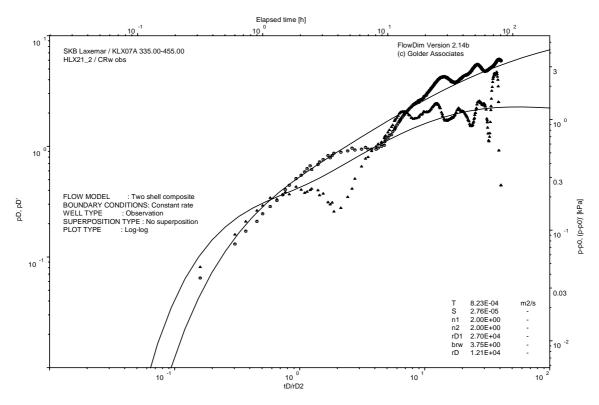
Pumped: KLX07A 335.00-455.00 m Page 7-3-4/2

Observed: HLX21_2 9.10-80.00 m

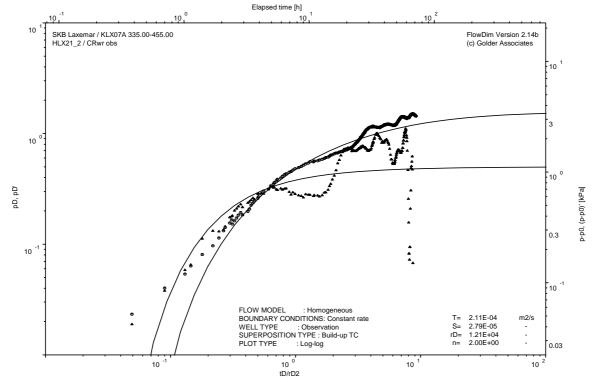


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX21_2 9.10-80.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX21_2 9.10-80.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX21_2 9.10-80.00 m observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX21_2 9.10-80.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-5/1

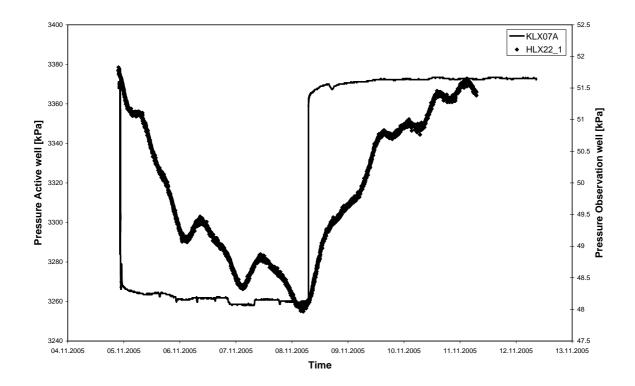
Observed: HLX22_1 86.00-163.20 m

APPENDIX 7-3-5

KLX07A Section 335.00-455.00 m pumped HLX22_1 86.00-163.20 m observed

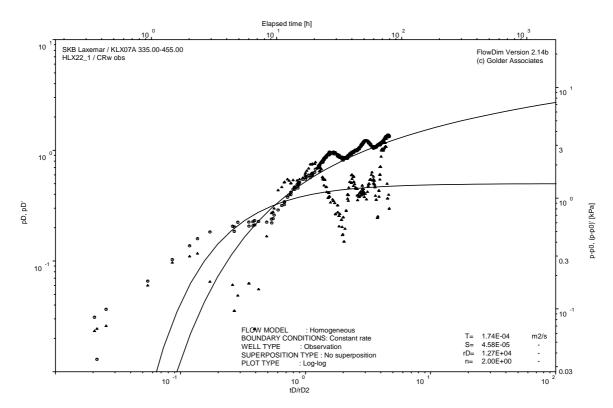
Pumped: KLX07A 335.00-455.00 m Page 7-3-5/2

Observed: HLX22_1 86.00-163.20 m

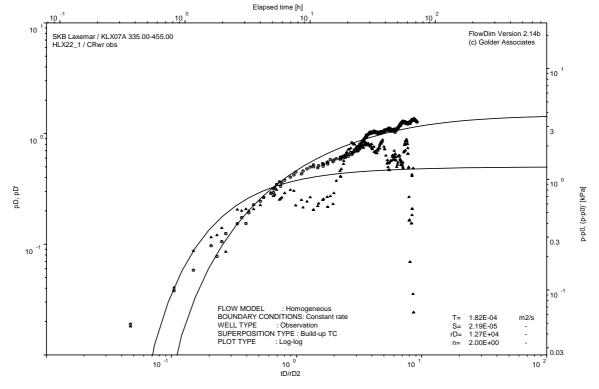


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX22_1 86.00-163.20 m observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX22_1 86.00-163.20 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX22_1 86.00-163.20 m observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX22_1 86.00-163.20 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-6/1

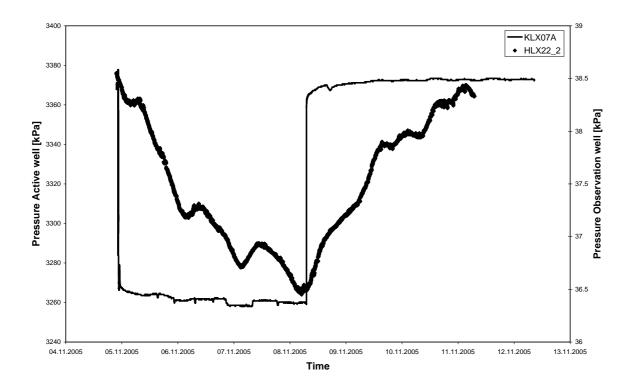
Observed: HLX22_2 9.19-85.00 m

APPENDIX 7-3-6

KLX07A Section 335.00-455.00 m pumped HLX22_2 9.19-85.00 m observed

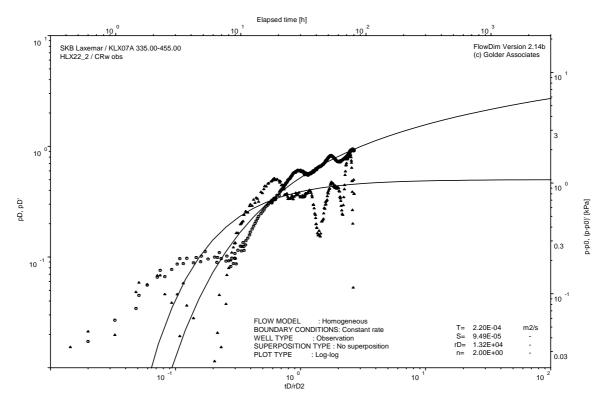
Pumped: KLX07A 335.00-455.00 m Page 7-3-6/2

Observed: HLX22_2 9.19-85.00 m

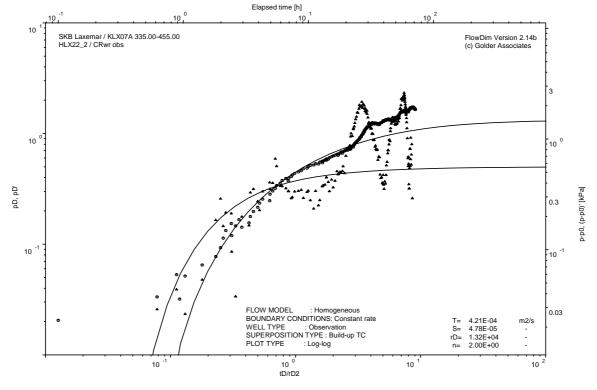


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX22_2 9.19-85.00 observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX22_2 9.19-85.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX22_2 9.19-85.00 observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX22_2 9.19-85.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-7/1

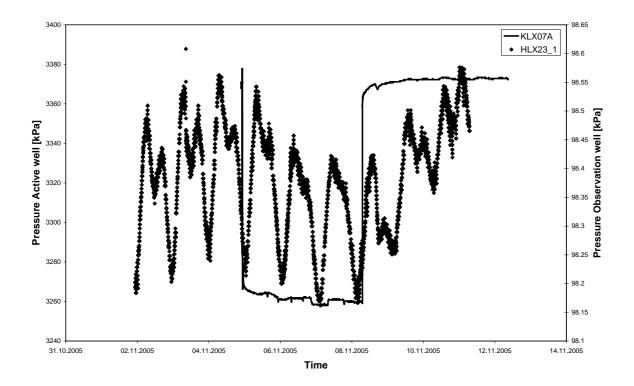
Observed: HLX23_1 61.00-160.20 m

APPENDIX 7-3-7

KLX07A Section 335.00-455.00 m pumped HLX23_1 61.00-160.20 m observed

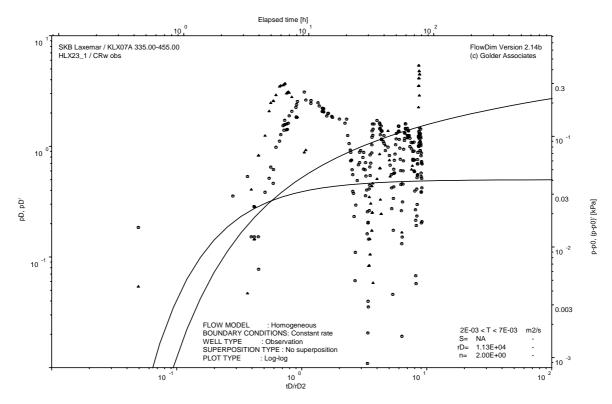
Pumped: KLX07A 335.00-455.00 m Page 7-3-7/2

Observed: HLX23_1 61.00-160.20 m

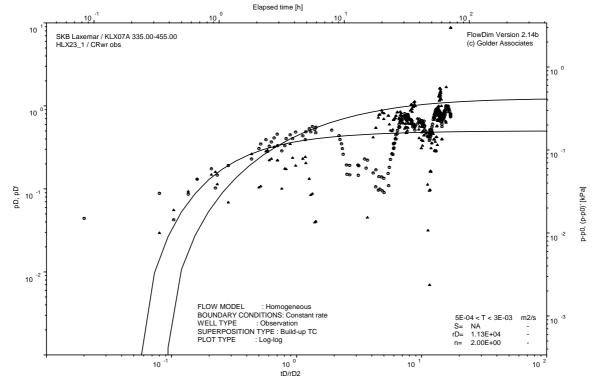


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX23_1 61.00-160.20 observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX23_1 61.00-160.20 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX23_1 61.00-160.20 observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX23_1 61.00-160.20 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-8/1

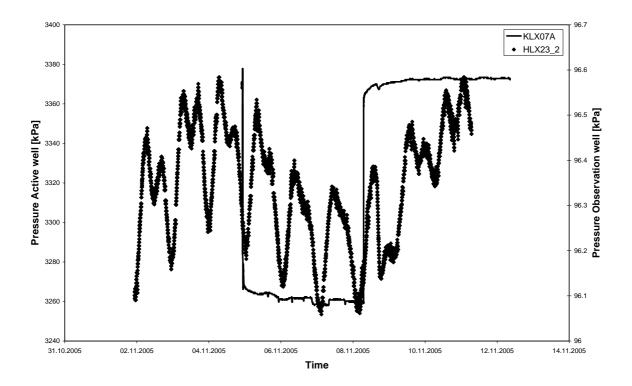
Observed: HLX23_2 6.10-60.00 m

APPENDIX 7-3-8

KLX07A Section 335.00-455.00 m pumped HLX23_2 6.10-60.00 m observed

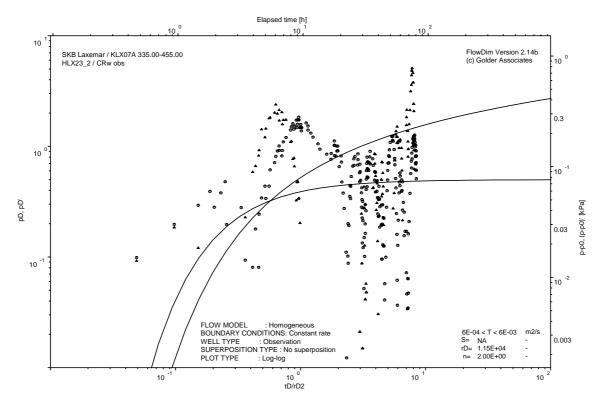
Pumped: KLX07A 335.00-455.00 m Page 7-3-8/2

Observed: HLX23_2 6.10-60.00 m

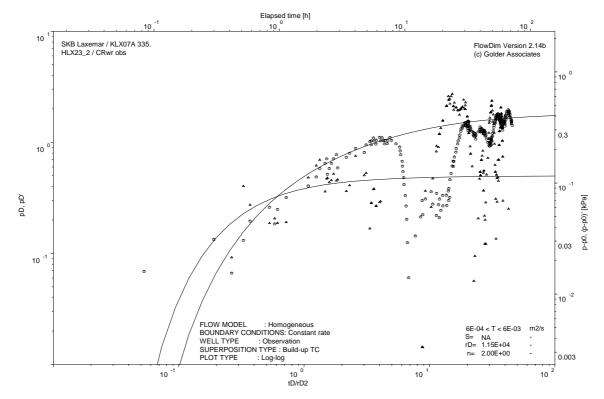


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX23_2 6.10-60.00 observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX23_2 6.10-60.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX23_2 6.10-60.00 observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX23_2 6.10-60.00 observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-9/1

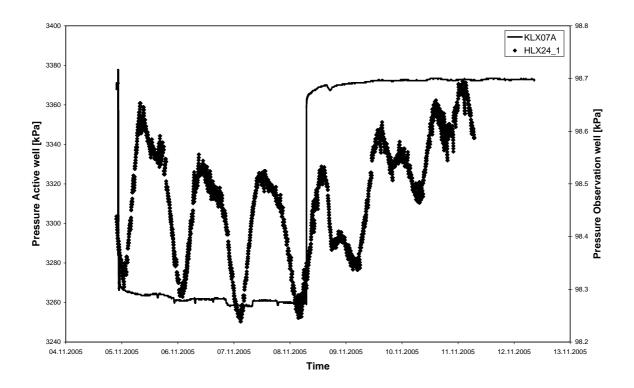
Observed: HLX24_1 41.00-175.20 m

APPENDIX 7-3-9

KLX07A Section 335.00-455.00 m pumped HLX24_1 41.00-175.20 m observed

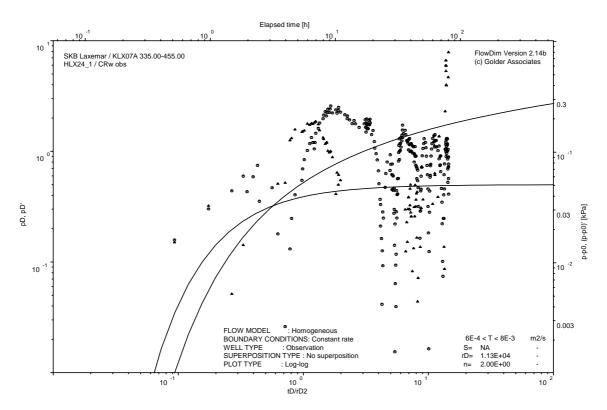
Pumped: KLX07A 335.00-455.00 m Page 7-3-9/2

Observed: HLX24_1 41.00-175.20 m

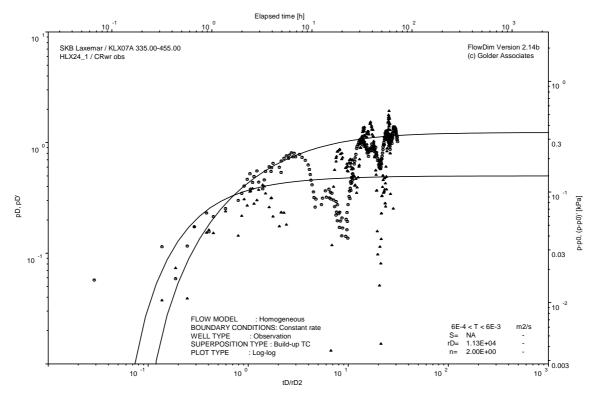


Pressure vs. time; KLX07A 335.00-455.00 m pumped and HLX24_1 41.00-175.20 observed

Pumped: KLX07A 335.00-455.00 m Observed: HLX24_1 41.00-175.20 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and HLX24_1 41.00-175.20 observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and HLX24_1 41.00-175.20 observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-10/1

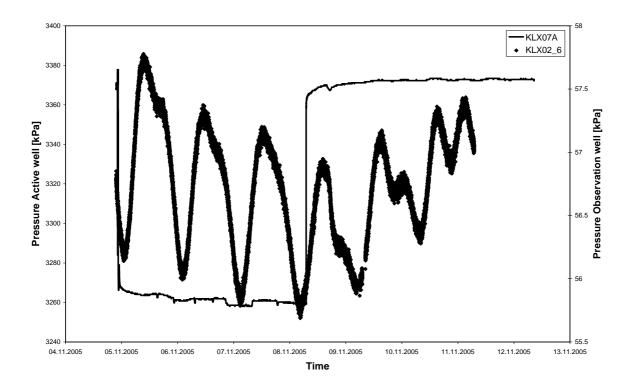
Observed: KLX02_6 348.00-451.00 m

APPENDIX 7-3-10

KLX07A Section 335.00-455.00 m pumped KLX02_6 348.00-451.00 m observed

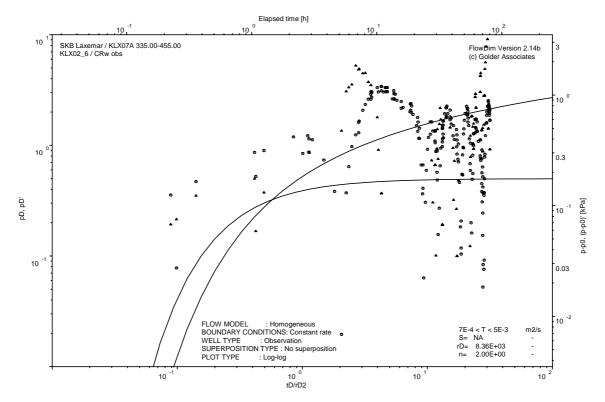
Page 7-3-10/2

Pumped: KLX07A 335.00-455.00 m Observed: KLX02_6 348.00-451.00 m

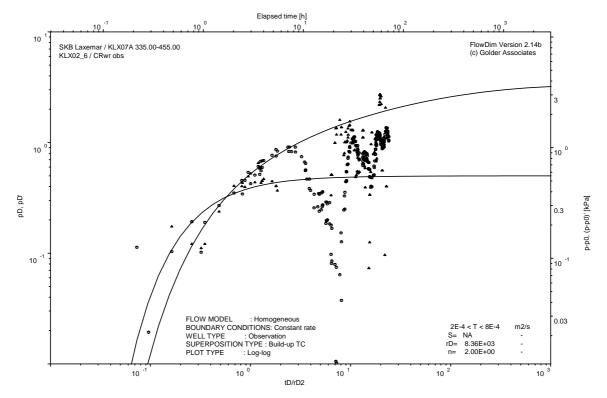


Pressure vs. time; KLX07A 335.00-455.00 m pumped and KLX02_6 348.00-451.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: KLX02_6 348.00-451.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX02_6 348.00-451.00 m observed



CRwr phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX02_6 348.00-451.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-11/1

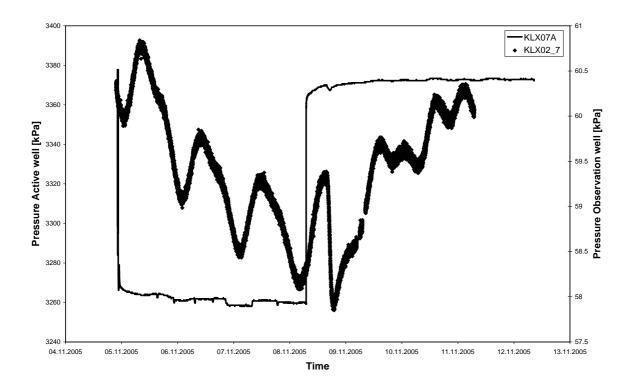
Observed: KLX02_7 209.00-347.00 m

APPENDIX 7-3-11

KLX07A Section 335.00-455.00 m pumped KLX02_7 209.00-347.00 m observed

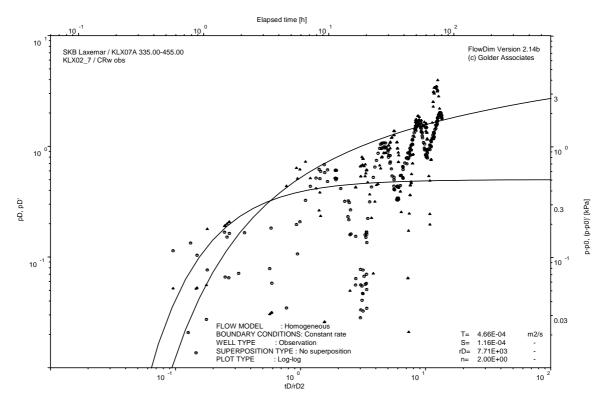
Page 7-3-11/2

Pumped: KLX07A 335.00-455.00 m Observed: KLX02_7 209.00-347.00 m

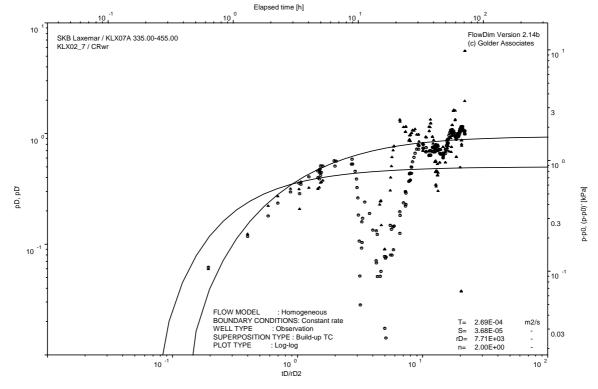


Pressure vs. time; KLX07A 335.00-455.00 m pumped and KLX02_7 209.00-347.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: KLX02_7 209.00-347.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX02_7 209.00-347.00 m observed



CRwr phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX02_7 209.00-347.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-12/1

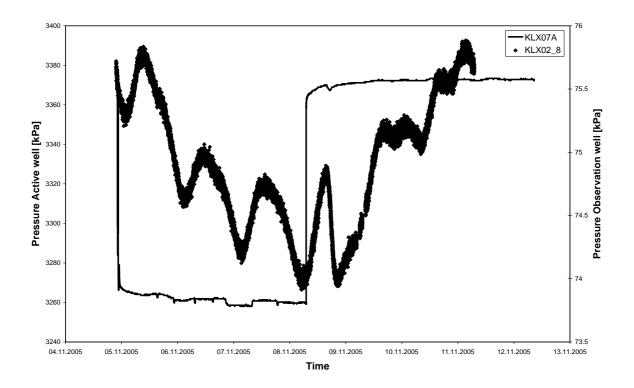
Observed: KLX02_8 202.95-208.00 m

APPENDIX 7-3-12

KLX07A Section 335.00-455.00 m pumped KLX02_8 202.95-208.00 m observed

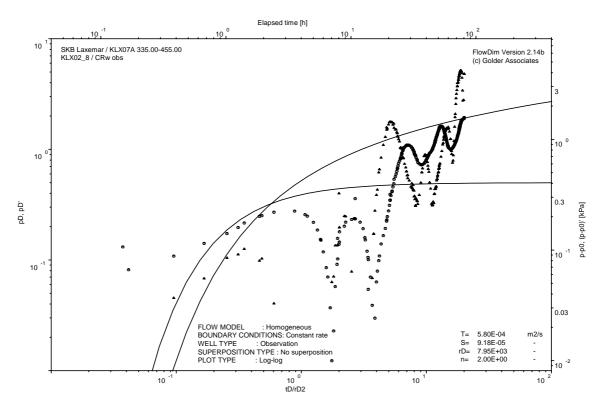
Page 7-3-12/2

Pumped: KLX07A 335.00-455.00 m Observed: KLX02_8 202.95-208.00 m

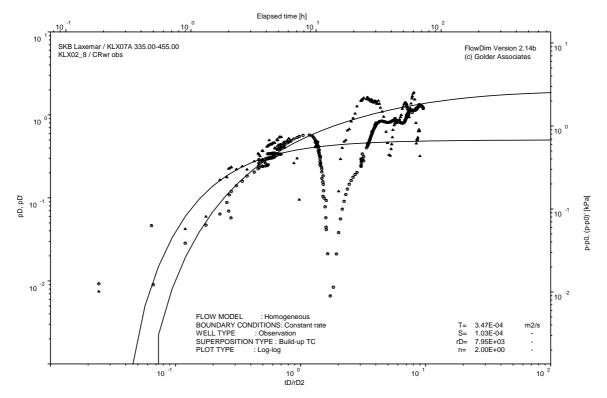


Pressure vs. time; KLX07A 335.00-455.00 m pumped and KLX02_8 202.95-208.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: KLX02_8 202.95-208.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX02_8 202.95-208.00 m observed



CRwr phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX02_8 202.95-208.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-13/1

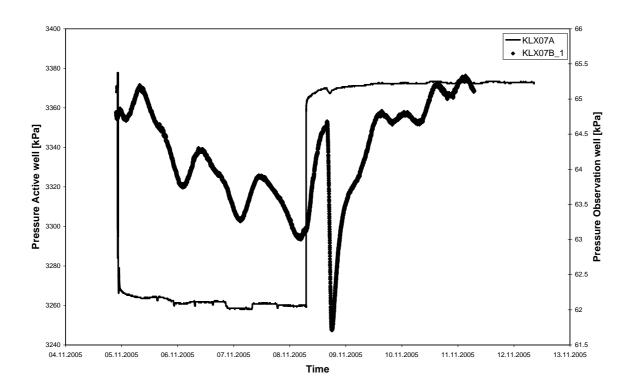
Observed: KLX07B_1 112.00-200.00 m

APPENDIX 7-3-13

KLX07A Section 335.00-455.00 m pumped KLX07B_1 112.00-200.00 m observed

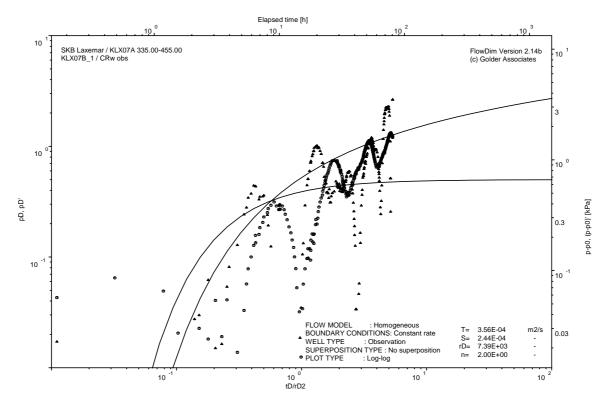
Page 7-3-13/2

Pumped: KLX07A 335.00-455.00 m Observed: KLX07B_1 112.00-200.00 m

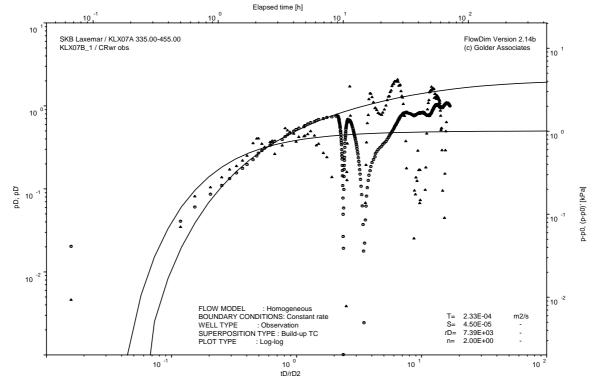


Pressure vs. time; KLX07A 335.00-455.00 m pumped and KLX07B_1 112.00-200.00 m observed

Pumped: KLX07A 335.00-455.00 m Observed: KLX07B_1 112.00-200.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX07B_1 112.00-200.00 m observed



CRwr phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX07B_1 112.00-200.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-14/1

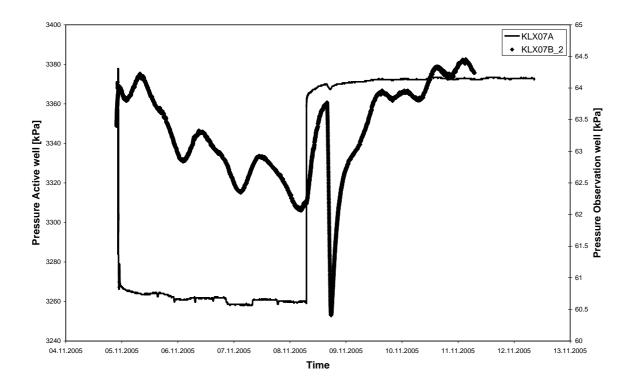
Observed: KLX07B_2 49.00-111.00 m

APPENDIX 7-3-14

KLX07A Section 335.00-455.00 m pumped KLX07B_2 49.00-111.00 m observed

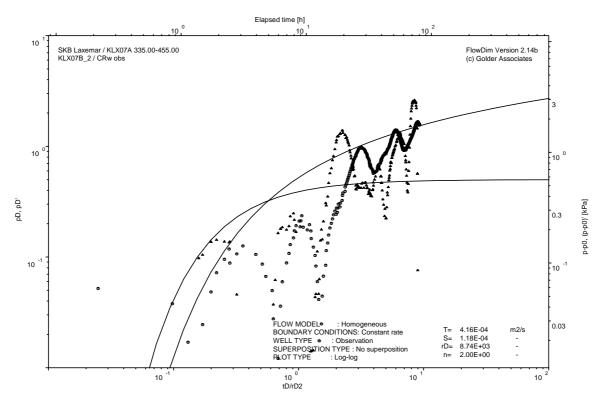
Page 7-3-14/2

Pumped: KLX07A 335.00-455.00 m Observed: KLX07B_2 49.00-111.00 m

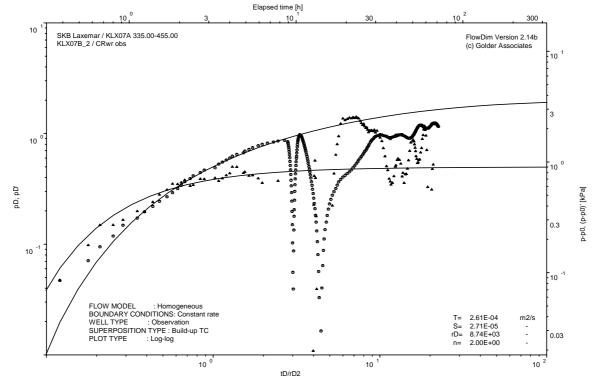


Pressure vs. time; KLX07A 335.00-455.00 m pumped and KLX07B_2 49.00-111.00~m observed

Pumped: KLX07A 335.00-455.00 m Observed: KLX07B_2 49.00-111.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX07B_2 49.00-111.00 m observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and KLX07B_2 49.00-111.00 m observed

Pumped: KLX07A 335.00-455.00 m Page 7-3-15/1

Observed: KLX07B_3 0.00-48.00 m

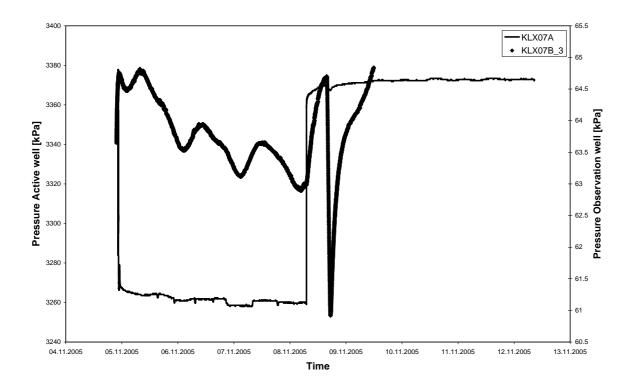
APPENDIX 7-3-15

KLX07A Section 335.00-455.00 m pumped KLX07B_3 0.00-48.00 m observed

Observation hole Test Analysis diagrams

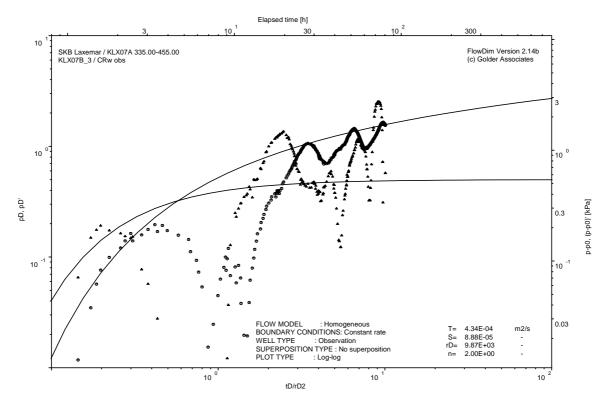
Page 7-3-15/2

Pumped: KLX07A 335.00-455.00 m Observed: KLX07B_3 0.00-48.00 m

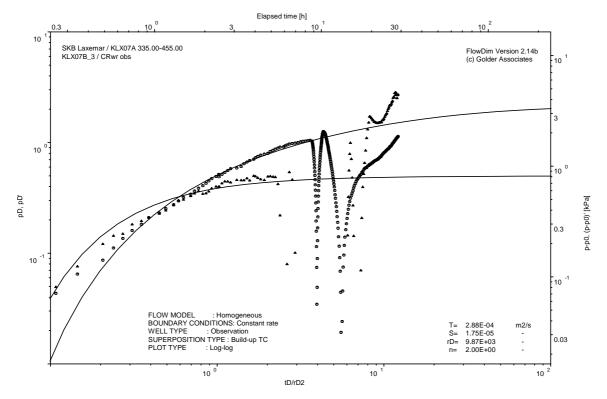


Pressure vs. time; KLX07A 335.00-455.00 m pumped and KLX07B_3 0.00-48.00~m observed

Pumped: KLX07A 335.00-455.00 m Observed: KLX07B_3 0.00-48.00 m



CRw phase; log-log match; KLX07A 335.00-455.00 m pumped and KLX07B_3 0.00-48.00 m observed



CRwr phase; log-log match; KLX07A 335.00-435.00 m pumped and KLX07B $_$ 3 0.00-48.00 m observed

Borehole: KLX07A

APPENDIX 8

Observation holes Test Summary Sheets Borehole: KLX07A

APPENDIX 8-1

KLX07A Section 103.20-193.20 m pumped

Observation hole Test Summary Sheets

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				CRwi
Area:	Laxemaı	Test no:		Ot	servation hole 1
Borehole ID:	LII V40. 4	Test start:			051020 00.51
borenole ib.	(KLX07A 103.20-193.20 pumped)				051028 09:51
Test section from - to (m):	3.00-85.00	Responsible for			Stephan Rohs
Section diameter 2 r (m):		test execution: Responsible for		Crioti	an Enachescu
Section diameter, 2-r _w (m):		test evaluation:		Cristi	an Enachescu
Linear plot Q and p		Flow period		Recovery period	
400	- 70	Indata		Indata	
1490		p_0 (kPa) =			
1480 -		p _i (kPa) =			
<u>• .• .</u>		$p_p(kPa) =$		p _F (kPa) =	
FP a 1470	Resure Observation well [KP a]	$Q_p (m^3/s) =$	6.59E-04		
1480 -	M uoi	tp (s) =	261960	t _F (s) =	333120
Active	Serval	S el S [*] (-)=		S el S [*] (-)=	
Pressure Active well [RPa]	†30 0	EC _w (mS/m)=			
1440	120 1	Temp _w (gr C)=			
Andrew Company of the		Derivative fact.=	0.02	Derivative fact.=	0.02
1430	KLX07A + HLX10_1				
1420					
28.10.2005 29.10.2006 30.10.2005 31.10.20	05 01.11.2005 02.11.2005 03.11.2005 04.11.2005 Time	Results		Results	
		$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates-	flow period	$T_{\rm M} (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
10 1 10 Elapsed tin	10 h) 1 10 1 10 3	$dt_1 (min) =$	NA	$dt_1 (min) =$	1074
	30	$dt_2 (min) =$	NA	$dt_2 (min) =$	4020
	110 1	$T (m^2/s) =$		$T (m^2/s) =$	1.4E-04
10 °		S (-) =	1.4E-04	. ,	9.3E-0
4	3	$K_s (m/s) =$		$K_s (m/s) =$	1.7E-06
	[Real Loss of your o	$S_s (1/m) =$	1.7E-06 NA	$S_s(1/m) =$	1.1E-06
10-4	1 3	$C/m^{\circ}/D_{\circ}$	INA	$C (m^3/Pa) =$	NA
// •		$C (m^3/Pa) =$			NΙΛ
// ·	· 0.3	C _D (-) =	NA	$C_D(-) =$	NA NA
//:	0.3				NA NA
,	0.3	$C_{D}(-) = $ $\xi(-) =$	NA	$C_D(-) = \xi(-) =$	
3 10 ¹¹ 10 ³ C	0.3	$C_D(-) = \xi(-) = T_{GRF}(m^2/s) = T_{GRF}(m^2/s) = T_{GRF}(m^2/s)$	NA	$C_{D}(-) = \xi(-) = T_{GRF}(m^{2}/s) =$	
3 10 ² 10 ²	0.3	$C_D(-) = \xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}(-)$	NA	$C_D(-) = \xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}(-)$	
c	0.3 10 10 10 10 10 10 10 10 10 10 10 10 10 1	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $	NA NA	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $	
c	0.3 10 10 10 10 10 10 10 10 10 10 10 10 10 1	$\begin{array}{ccc} C_D \left(\cdot \right) & = & \\ \xi \left(\cdot \right) & = & \\ & & \\ T_{GRF}(m^2/s) = & \\ S_{GRF}(\cdot) & = & \\ D_{GRF} \left(\cdot \right) & = & \\ Selected representation \\ \end{array}$	NA NA ntative param	$C_{D}(-) = $ $\xi(-) = $ $T_{GRF}(m^{2}/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $	NA .
c	0.3 10 10 10 10 10 10 10 10 10 10 10 10 10 1	$\begin{array}{ll} C_D\left({\text{-}} \right) &= \\ \xi\left({\text{-}} \right) &= \\ \\ T_{GRF}(m^2/s) &= \\ S_{GRF}({\text{-}}) &= \\ D_{GRF}\left({\text{-}} \right) &= \\ \\ \textbf{Selected represe} \\ dt_1\left({\text{min}} \right) &= \\ \end{array}$	NA NA ntative param	$C_{D}(-) = \frac{C_{D}(-)}{\xi(-)} = \frac{T_{GRF}(m^{2}/s) = S_{GRF}(-)}{D_{GRF}(-)} = \frac{D_{GRF}(-)}{C(m^{3}/Pa)} = \frac{C_{D}(-)}{(m^{3}/Pa)} = \frac{C_{D}(-)}{($	NA NA
c	0.3 10 10 10 10 10 10 10 10 10 10 10 10 10 1	$\begin{array}{ll} C_D\left({\text{-}} \right) &= \\ \xi\left({\text{-}} \right) &= \\ \\ T_{GRF}(m^2/s) &= \\ S_{GRF}\left({\text{-}} \right) &= \\ D_{GRF}\left({\text{-}} \right) &= \\ \\ \textbf{Selected represe} \\ dt_1\left({\text{min}} \right) &= \\ dt_2\left({\text{min}} \right) &= \\ \end{array}$	NA NA Intative param 1074 4020	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ $C(m^3/Pa) = $ $C_D(-) = $	NA NA NA
c	s- recovery period	$\begin{array}{ll} C_D\left({\text{-}} \right) &= \\ \xi\left({\text{-}} \right) &= \\ \\ T_{GRF}(m^2/s) &= \\ S_{GRF}\left({\text{-}} \right) &= \\ D_{GRF}\left({\text{-}} \right) &= \\ \\ \textbf{Selected represe} \\ \text{dt}_1\left({\text{min}} \right) &= \\ \text{dt}_2\left({\text{min}} \right) &= \\ \\ T_T\left({\text{m}}^2/s \right) &= \\ \end{array}$	ntative param 1074 4020 1.4E-04	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ $C(m^3/Pa) = $ $C_D(-) = $	NA NA
c	0.3 10 10 10 10 10 10 10 10 10 10 10 10 10 1	$C_D(-) = \frac{C_D(-)}{\xi(-)} = \frac{T_{GRF}(m^2/s)}{s_{GRF}(-)} = \frac{S_{GRF}(-)}{s_{GRF}(-)}	ntative param 1074 4020 1.4E-04 9.3E-05	$C_D(-) = \frac{C_D(-)}{\xi(-)} = \frac{T_{GRF}(m^2/s)}{s} = \frac{T_{GRF}(-)}{s} = \frac{D_{GRF}(-)}{s} = \frac{C_D(-)}{s} = \frac{\xi(-)}{s} = \frac{\xi(-)}{s} = \frac{\xi(-)}{s} = \frac{E_D(-)}{s}	NA NA NA
Log-Log plot incl. derivative	s- recovery period	$\begin{array}{ll} C_D (\text{-}) & = & \\ \xi (\text{-}) & = & \\ & \\ T_{GRF}(m^2/s) = & \\ S_{GRF}(\text{-}) & = & \\ D_{GRF} (\text{-}) & = & \\ \textbf{Selected represe} \\ dt_1 (\text{min}) & = & \\ dt_2 (\text{min}) & = & \\ T_T (m^2/s) & = & \\ S (\text{-}) & = & \\ K_s (\text{m/s}) & = & \\ \end{array}$	ntative param 1074 4020 1.4E-04 9.3E-05 1.7E-06	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ $C(m^3/Pa) = $ $C_D(-) = $ $E(-) = $	NA NA NA
Log-Log plot incl. derivative	S- recovery period	$\begin{array}{ll} C_D \left(\cdot \right) & = \\ \xi \left(\cdot \right) & = \\ \\ T_{GRF}(m^2/s) = \\ S_{GRF}(\cdot) & = \\ \\ D_{GRF} \left(\cdot \right) & = \\ \\ Selected represe \\ dt_1 \left(min \right) & = \\ dt_2 \left(min \right) & = \\ \\ T_T \left(m^2/s \right) & = \\ S \left(\cdot \right) & = \\ \\ K_s \left(m/s \right) & = \\ \end{array}$	ntative param 1074 4020 1.4E-04 9.3E-05	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ $C(m^3/Pa) = $ $C_D(-) = $ $E(-) = $	NA NA NA
Log-Log plot incl. derivative	SS- recovery period	$\begin{array}{ll} C_D \left(\cdot \right) & = \\ \\ \xi \left(\cdot \right) & = \\ \\ \\ T_{GRF}(m^2/s) = \\ \\ S_{GRF}(\cdot) & = \\ \\ D_{GRF} \left(\cdot \right) & = \\ \\ Selected represe \\ dt_1 \left(min \right) & = \\ dt_2 \left(min \right) & = \\ \\ T_T \left(m^2/s \right) & = \\ \\ S \left(\cdot \right) & = \\ \\ K_s \left(m/s \right) & = \\ \\ S_s \left(1/m \right) & = \\ \\ Comments: \end{array}$	ntative param 1074 4020 1.4E-04 9.3E-05 1.7E-06	$C_D(-) = \xi(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ $Exterms$ Ext	NA NA NA
Log-Log plot incl. derivative	S- recovery period	$\begin{array}{ll} C_D\left(\cdot \right) &= \\ \xi\left(\cdot \right) &= \\ \\ T_{GRF}(m^2/s) &= \\ S_{GRF}(\cdot) &= \\ \\ D_{GRF}\left(\cdot \right) &= \\ \\ Selected represe \\ dt_1\left(min \right) &= \\ dt_2\left(min \right) &= \\ \\ T_T\left(m^2/s \right) &= \\ S\left(\cdot \right) &= \\ K_s\left(m/s \right) &= \\ \\ S_s\left(1/m \right) &= \\ \\ Comments: \\ The recommended to the analysis of the Commended to th$	ntative param 1074 4020 1.4E-04 9.3E-05 1.7E-06 1.1E-06	$C_D(-) = \frac{1}{\xi(-)} = \frac{1}{\xi($	NA NA NA derived from ata and
Log-Log plot incl. derivative	SS- recovery period	$\begin{array}{ll} C_D\left(\cdot \right) &= \\ & \xi\left(\cdot \right) &= \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & $	ntative param 1074 4020 1.4E-04 9.3E-05 1.7E-06 transmissivity of CRwr phase, whi	$C_D(-)$ = $\xi(-)$ = $T_{GRF}(m^2/s)$ = $S_{GRF}(-)$	NA NA NA derived from ata and le transmissivity
Log-Log plot incl. derivative	S-recovery period	$\begin{array}{ll} C_D\left(\cdot \right) &=& \\ E_D\left(\cdot \right) &=& \\ C_D\left(\cdot \right) &=& $	ntative param 1074 4020 1.4E-04 9.3E-05 1.7E-06 1.1E-06 transmissivity of CRwr phase, which confidence in 0•10-5 m²/s to 5	$C_D(-) = \frac{1}{\xi(-)} = \frac{1}{\xi($	NA NA NA derived from ata and le transmissivity ow dimension
Log-Log plot incl. derivative	SS- recovery period	$\begin{array}{ll} C_D\left(\cdot \right) &= \\ & \xi\left(\cdot \right) &= \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & $	ntative param 1074 4020 1.4E-04 9.3E-05 1.7E-06 1.1E-06 transmissivity of CRwr phase, which confidence r 0•10-5 m²/s to 5 According to the	$C_D(-)$ = $\xi(-)$ = $T_{GRF}(m^2/s)$ = $S_{GRF}(-)$	NA NA NA NA derived from ata and le transmissivity ow dimension s no hydraulic

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxema	Test no:		Ot	oservation hole 1
Borehole ID:	HLX11_1 (KLX07A 103.20-193.20 pumped	Test start:			051028 09:51
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2-r _w (m):		Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
a. p.o. q.aa p		Indata		Indata	
1490	66	p ₀ (kPa) =	ſ		
1480	- 64	p _i (kPa) =			
		$p_p(kPa) =$		p _F (kPa) =	
	Ik Pa]	$Q_p (m^3/s) =$	6.59E-04		
\$\\ \	w e	$\frac{Q_p (\Pi / s) =}{tp (s)} =$	261960		333120
w w w	rvatio	S el S [*] (-)=	201700	S el S [*] (-)=	555120
O 1450-	- sq o	EC _w (mS/m)=		3 el 3 (-)=	
Pressure Active well IKP at	8 8 8 R	Temp _w (gr C)=			
1440-		Derivative fact.=	0.09	Derivative fact.=	0.08
1430		Derivative fact.=	0.07	Denvative fact.=	0.00
	— KLX07A ◆ HLX11_1				
1420	01.11.2005 02.11.2005 03.11.2005 04.11.2005	Results		Results	
1	Time	Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$	NA		
3 37 3	- P	Flow regime:	transient	Flow regime:	transient
		$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	2586
Elapsed time (h	10,	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	4290
	30	$T (m^2/s) =$		$T (m^2/s) =$	7.8E-05
		S (-) =	2.2E-04	. ,	6.4E-04
10 %		$K_s (m/s) =$		$K_s (m/s) =$	1.5E-06
	3	$S_s(1/m) =$		$S_s(1/m) =$	1.2E-05
a i		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
مر بنی نیم نیم نیم نیم نیم نیم نیم نیم نیم ن	10° (a)	$C_D(-) =$	NA	$C_D(-) =$	NA
/-,-,7	0.3	ξ(-) =	NA	ξ(-) =	NA
. /./		2()		~ () —	
	10 -1	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ° sD/rD2	10 ¹ 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran		
		dt_1 (min) =	858	•	NA
o Elapsed time ([h] ₁ 2	$dt_2 \text{ (min)} =$	2952	$C_D(-) =$	NA
10 1	10, 30, 10,	$T_T (m^2/s) =$	2.1E-04		NA
		S (-) =	2.2E-04	- \ /	
10 °		$K_s (m/s) =$	3.9E-06		
	10	$S_s(1/m) =$	4.2E-06		
المسكسين		Comments:			
² 10 ⁴ · · · · · · · · · · · · · · · · · · ·	Real (00-4) toda		transmissivity of	f 2.1•10-4 m2/s was	derived from
···/ ***	d podd	the analysis of the C	CRw phase, which	ch shows the best da	ta and
10 2	10 -1	derivative quality.	The confidence r	ange for the boreho	le transmissivity
/ /	110	is estimated to be 8			
				reshwater head was extrapolation in the	
10 -1 tD/rD	10 0 10 1	value of 6.91 m asl	₅ saaigiit iiiic (apoiation in tile	romer prot to a

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CRwr
Area:	Laxemar	Test no:		Ot	oservation hole 1
Borehole ID:	LI V11 2	Test start:			051028 09:51
Borenole ID.	(KLX07A 103.20-193.20 pumped)	rest start.			031026 09.31
Test section from - to (m):	6.00-16.00	Responsible for			Stephan Rohs
Castian diameter 2 r. (m):	+	test execution: Responsible for		Criet	ian Enachescu
Section diameter, 2-r _w (m):		test evaluation:		Crist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
1490	64	p_0 (kPa) =			
1480 -		p _i (kPa) =			
		$p_p(kPa) =$		p _F (kPa) =	
1470 -	F S Sure Observation well [KPa]	$Q_p (m^3/s) =$	6.59E-04		
₩ 1460 ·	tion we	tp (s) =	261960	t_F (s) =	333120
Pressure Active well [KPa]	Poser's	S el S [*] (-)=		S el S [*] (-)=	
1450		EC _w (mS/m)=			
1440-	Pres.	Temp _w (gr C)=			
1430		Derivative fact.=	0.02	Derivative fact.=	0.08
	- KLX07A • HLX11_2				
1420 28.10.2005 29.10.2005 30.10.2005 31.10.2006	01.112005 02.11.2006 03.11.2005 04.11.2005 Time				
	Time	Results	I	Results	1
		$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates-	flow period	$T_M (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
Elapso	d sime (h)	$dt_1 (min) =$		$dt_1 (min) =$	NA
10 1		$dt_2 (min) =$		$dt_2 (min) =$	NA
		$T (m^2/s) =$		$T (m^2/s) =$	5.8E-05
10 °	10 1	S (-) =	3.5E-04		2.5E-04
		$K_s (m/s) = S_s (1/m) =$		$K_s (m/s) = S_s (1/m) =$	5.8E-06 2.5E-05
B 10 ⁻¹	10 ° 8	, ,	3.5E-05 NA		2.5E-00
	(b)	$C (m^3/Pa) = C_D (-) =$	NA	$C (m^3/Pa) = C_D (-) =$	NA
//	- 10 ⁻¹	OD () =	14/3	O _D () =	1 1/1
¹° · / /		۶ (₋) –	NΑ		NΑ
		ξ (-) =	NA	ξ (-) =	NA
//.			NA	ξ (-) =	NA
10 4	10 ³ 10 ¹ 10 ²	$T_{GRF}(m^2/s) =$	NA	ξ (-) = $T_{GRF}(m^2/s) =$	NA
10-1	10 ⁹ 10 ⁹ 10 ⁹ 10 ⁹	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA	ξ (-) = $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	NA
Log-Log plot incl. derivatives	initiz	$T_{GRF}(m^2/s) = S_{GRF}(-) =$		$\xi (-) = T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF} (-) =$	NA
Log-Log plot incl. derivatives	initiz	$T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = $	entative paran	ξ (-) = $T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = meters.$	NA NA
10 1 15 Ellipsed fit	initiz	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe	entative param 1788	$\xi (-) = T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF} (-) =$	
Log-Log plot incl. derivatives	initiz	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$	entative param 1788	$\xi (-) = T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF} (-) = 0$ $C (m^3/Pa) = C_D (-) = 0$	NA
10, 12, Ellipsed to	initiz	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	entative paran 1788 2718	$\xi (-) = \frac{T_{GRF}(m^2/s) = S_{GRF}(-)}{S_{GRF}(-) = \frac{D_{GRF}(-)}{C_D(-)} = \frac{C_D(-)}{\xi(-)} = \frac{C_D(-)}{S_D(-)} = \frac{C_D(-)}{$	NA NA
10, 12, Ellipsed to	initiz	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$	ntative param 1788 2718 1.4E-04	$\xi (-) = \frac{T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = \frac{1}{2}$ eters. $C (m^3/Pa) = C_D (-) = \frac{1}{2}$	NA NA
10 Elepsed fr	initiz	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ $Selected represe$ $dt_1 (min) =$ $dt_2 (min) =$ $T_T (m^2/s) =$ $S (-) =$	2718 2718 1.4E-04 3.5E-04	$\xi (-) = \frac{T_{GRF}(m^2/s) =}{S_{GRF}(-) =} = \frac{D_{GRF}(-) =}{C_D(-) =} = \frac{\xi (-) =}{\xi (-) =}$	NA NA
10 Elepsed fr	S- recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S \text{ (-)} =$ $K_s \text{ (m/s)} =$	1788 2718 1.4E-04 3.5E-04 1.4E-05	$\xi (-) = \frac{T_{GRF}(m^2/s) =}{S_{GRF}(-) =} = \frac{D_{GRF}(-) =}{C_D(-) =} = \frac{\xi (-) =}{\xi (-) =}$	NA NA
10 19 " 19 " Elapsed to	initiz	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S \cdot (-) =$ $K_s \text{ (m/s)} =$ $S_s \cdot (1/m) =$ Comments: The recommended of	1788 2718 2718 1.4E-04 3.5E-04 1.4E-05 3.5E-05	$\xi (-) = \frac{T_{GRF}(m^2/s)}{S_{GRF}(-)} = \frac{S_{GRF}(-)}{S_{GRF}(-)} = \frac{C_{D}(-)}{S_{D}(-)} = \frac{\xi (-)}{S_{D}(-)} =$	NA NA NA
10 19 " 19 " Elapsed to	S- recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S (-) =$ $K_s \text{ (m/s)} =$ $S_s (1/m) =$ Comments: The recommended the analysis of the C	1788 2718 2718 1.4E-04 3.5E-04 1.4E-05 3.5E-05	$\xi (-) = \frac{T_{GRF}(m^2/s)}{S_{GRF}(-)} = \frac{S_{GRF}(-)}{S_{GRF}(-)} = \frac{C_{D}(-)}{S_{D}(-)} = \frac{\xi (-)}{S_{D}(-)} =$	NA NA NA derived from ta and
To T	S- recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S (-) =$ $K_s \text{ (m/s)} =$ $S_s (1/m) =$ Comments: The recommended the analysis of the Coderivative quality. The recommended of the commended of the analysis of the Coderivative quality.	1788 2718 1.4E-04 3.5E-04 1.4E-05 3.5E-05 transmissivity of CRw phase, which confidence is	ξ (-) = $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ leters. $C (m^3/Pa) =$ $C_D (-) =$ ξ (-) = ξ (-) =	NA NA NA derived from ta and le transmissivity
10 10 10 10 10 10 10 10 10 10 10 10 10 1	S- recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S (-) =$ $K_s \text{ (m/s)} =$ $S_s (1/m) =$ Comments: The recommended the analysis of the C	1788 2718 1.4E-04 3.5E-04 1.4E-05 3.5E-05 transmissivity of CRw phase, which confidence is 0.0-10-5 m ² /s to 3	ξ (-) = $T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = \frac{1}{2}$ Teters. C (m ³ /Pa) = C _D (-) = $\frac{1}{2}$ ξ (-) = $\frac{1}{2}$ T 1.4•10-4 m2/s was the shows the best data range for the borehood 3.0•10-4 m ² /s. The fl	NA NA NA derived from ta and le transmissivity ow dimension
10 10 10 10 10 10 10 10 10 10 10 10 10 1	S- recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S \text{ (-)} =$ $K_s \text{ (m/s)} =$ $S_s \text{ (1/m)} =$ Comments: The recommended the analysis of the Coderivative quality. The sestimated to be 8. during the test is 2.	1788 2718 1.4E-04 3.5E-04 1.4E-05 3.5E-05 transmissivity of CRw phase, which confidence in 0•10-5 m²/s to 3.5The measured fing straight line of the confidence of the measured fing straight line of the confidence of the measured fing straight line of the confidence of the measured fing straight line of the confidence of the measured fing straight line of the confidence o	ξ (-) = $T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = \frac{1}{2}$ Teters. C (m ³ /Pa) = C _D (-) = $\frac{1}{2}$ ξ (-) = $\frac{1}{2}$ T 1.4•10-4 m2/s was the shows the best data range for the borehood 3.0•10-4 m ² /s. The fl	NA NA NA derived from ta and le transmissivity ow dimension derived from

	Test S	Sumn	nary Sheet			
Project:	Oskarshamn site investi					CRw
Area:	Lax	xemar	Test no:		Or	servation hole
Borehole ID:	HLX (KLX07A 103.20-193.20 p		Test start:			051028 09:51
Test section from - to (m):			Responsible for			Stephan Rohs
. ,			test execution:			
Section diameter, 2-r _w (m):			Responsible for test evaluation:		Cristi	ian Enachescu
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
			p ₀ (kPa) =			
1400	KLX07A	54	p _i (kPa) =			
1480	• HLX21_1	53.5	$p_p(kPa) =$		p _F (kPa) =	
1470	~	53 e	$Q_p (m^3/s) =$	6.59E-04	, , ,	
	N/ -	Observation well [kPa]	tp (s) =	261960	t _F (s) =	33312
9 1460 ·	_/	rvation 52	S el S [*] (-)=		S el S [*] (-)=	
Pressure Active well (4%)	"	51.5 e.	EC _w (mS/m)=		()	
1440	/	Pressu	Temp _w (gr C)=			
1430	J .,	50.5	Derivative fact.=	0.08	Derivative fact.=	0.0
1420	,	50.5				
28.10.2005 29.10.2006 30.10.2006 31.10.2005 Tir	01.11.2005 02.11.2005 03.11.2005 04.11.2 me	2006				
			Results		Results	
			Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- f	low period		$T_M (m^2/s) =$	NA		
			Flow regime:	transient	Flow regime:	transient
Elapsed time [h	N		dt_1 (min) =		dt_1 (min) =	NA
10 1]	dt_2 (min) =	3984	dt_2 (min) =	NA
		10 1	$T (m^2/s) =$	4.0E-04	$T (m^2/s) =$	3.6E-0
			S (-) =	1.3E-04		1.2E-0
10 0	بمبهر	3	$K_s (m/s) =$		$K_s (m/s) =$	5.2E-0
		100 =	$S_s (1/m) =$		$S_s(1/m) =$	1.7E-0
						NIA
		(P-F0) [kP	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	NA
10-1	者 (1) (2) (2) (2) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	p-pd.(p-pd) [kPa]	C _D (-) =	NA	$C_D(-) =$	NA
10 4	* 12 min 1 m					
10 4	Francisco (Control of Control of	33 (03-d) 70-l-d	C _D (-) = ξ (-) =	NA	$C_D(-) = \xi(-) =$	NA
	6		$C_D(-) = \xi(-) = T_{GRF}(m^2/s) =$	NA	$C_{D}(-) = \xi(-) = T_{GRF}(m^{2}/s) =$	NA
10 d	* *** * : :	10 -1	$C_D(-) = \xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}(-)$	NA	$C_D(-) = \xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}(-)$	NA
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10 -1	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $	NA NA	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $	NA
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10 -1	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ Selected represe	NA NA ntative param	$C_{D}(-) = $ $\xi(-) = $ $T_{GRF}(m^{2}/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $	NA NA
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10 -1	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ Selected represe $dt_1(min) = $	NA NA ntative param 2238	$C_D(-) = \frac{C_D(-)}{\xi(-)} = \frac{T_{GRF}(m^2/s)}{S_{GRF}(-)} = \frac{D_{GRF}(-)}{S_{GRF}(-)} = \frac{S_{GRF}(-)}{S_{GRF}(-)}	NA NA
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10 -1	$\begin{array}{ll} C_D\left(\cdot \right) &=& \\ \xi\left(\cdot \right) &=& \\ & \\ T_{GRF}(m^2/s) =& \\ S_{GRF}(\cdot) &=& \\ D_{GRF}\left(\cdot \right) &=& \\ Selected\ represe\\ dt_1\left(min \right) &=& \\ dt_2\left(min \right) &=& \\ \end{array}$	NA NA ntative param 2238 3984	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ letters. $C(m^3/Pa) = $ $C_D(-) = $	NA NA NA NA
0 0 1 10° 10′102		10 -1	$C_D(-) = \xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = S_{GRF}(-) = dt_1(min) = dt_2(min) = T_T(m^2/s) =$	NA NA ntative param 2238 3984 4.0E-04	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ letters. $C(m^3/Pa) = $ $C_D(-) = $	NA NA
0 0 1 10° 10′102		10 -1	$C_D(-) = \frac{1}{\xi(-)} = \frac{1}{\xi($	ntative paran 2238 3984 4.0E-04 1.3E-04	$C_D(-) = \frac{C_D(-)}{\xi(-)} = \frac{T_{GRF}(m^2/s)}{s_{GRF}(-)} = \frac{D_{GRF}(-)}{s_{GRF}(-)} = \frac{c_D(m^3/Pa)}{s_{GRF}(-)} = \frac{c_D(-)}{s_{GRF}(-)} = c_D(-)$	NA NA NA NA
10 10 10 10 10 10 10 10 10 10 10 10 10 1		10 -1	$C_D(-) = \frac{1}{\xi(-)} = \frac{1}{\xi($	ntative param 2238 3984 4.0E-04 1.3E-04 5.7E-06	$C_D(-) = \frac{C_D(-)}{\xi(-)} = \frac{T_{GRF}(m^2/s)}{s_{GRF}(-)} = \frac{D_{GRF}(-)}{s_{GRF}(-)} = \frac{c_D(m^3/Pa)}{s_{GRF}(-)} = \frac{c_D(-)}{s_{GRF}(-)} = c_D(-)$	NA NA NA NA
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10 -1	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ $Selected represe $ $dt_1(min) = $ $dt_2(min) = $ $T_T(m^2/s) = $ $S(-) = $ $K_s(m/s) = $ $S_s(1/m) = $	ntative paran 2238 3984 4.0E-04 1.3E-04	$C_D(-) = \frac{C_D(-)}{\xi(-)} = \frac{T_{GRF}(m^2/s)}{s_{GRF}(-)} = \frac{D_{GRF}(-)}{s_{GRF}(-)} = \frac{c_D(m^3/Pa)}{s_{GRF}(-)} = \frac{c_D(-)}{s_{GRF}(-)} = c_D(-)$	NA NA NA NA
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10°	$\begin{array}{lll} C_D \left(\cdot \right) & = & \\ \xi \left(\cdot \right) & = & \\ & \\ T_{GRF}(m^2/s) = & \\ S_{GRF}(\cdot) & = & \\ D_{GRF} \left(\cdot \right) & = & \\ \textbf{Selected represe} \\ dt_1 \left(\text{min} \right) & = & \\ dt_2 \left(\text{min} \right) & = & \\ T_T \left(m^2/s \right) & = & \\ S \left(\cdot \right) & = & \\ K_s \left(m/s \right) & = & \\ S_s \left(1/m \right) & = & \\ \textbf{Comments:} \end{array}$	ntative paran 2238 3984 4.0E-04 1.3E-04 5.7E-06	$C_D(-) = \xi(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ $Exterms$ Ext	NA NA NA NA NA
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10 -1	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $D_{GRF}(-) = $ Selected represe $dt_1 \text{ (min)} = $ $dt_2 \text{ (min)} = $ $T_T (m^2/s) = $ $S (-) = $ $K_s \text{ (m/s)} = $ $S_s (1/m) = $ Comments: The recommended the analysis of the C	ntative param 2238 3984 4.0E-04 1.3E-04 5.7E-06 1.8E-06 cransmissivity of	$C_D(-) = \xi(-) = \frac{\xi(-)}{\xi(-)} = \frac{\xi(-)}{\xi(-)$	NA NA NA NA Oderived from ta and
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10°	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $S_$	ntative param 2238 3984 4.0E-04 1.3E-06 1.8E-06 rransmissivity of CRw phase, which confidence in the c	$C_D(-)$ = $\xi(-)$ = $T_{GRF}(m^2/s)$ = $S_{GRF}(-)$	NA NA NA NA NA derived from ta and le transmissivit
10 d 10 10 10 10 10 10 10 10 10 10 10 10 10		10°	$C_D(-) = \frac{1}{\xi(-)} = \frac{1}{\xi($	ntative param 2238 3984 4.0E-04 1.3E-06 1.8E-06 rransmissivity of CRw phase, which confidence r 0•10-4 m²/s to 8	$C_D(-) = \frac{1}{\xi(-)} = \frac{1}{\xi($	NA NA NA NA NA derived from ta and le transmissivit ow dimension
		10 0 10 0 10 0 10 0 10 0 10 0 10 0 10	$C_D(-) = $ $\xi(-) = $ $T_{GRF}(m^2/s) = $ $S_{GRF}(-) = $ $S_$	ntative paran 2238 3984 4.0E-04 1.3E-06 1.8E-06 cransmissivity of CRw phase, which confidence r 0•10-4 m²/s to 8 According to the	$C_D(-)$ = $\xi(-)$ = $T_{GRF}(m^2/s)$ = $S_{GRF}(-)$	NA NA NA NA NA derived from ta and le transmissivity ow dimension s no hydraulic

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigatio				CRwr
Area:	Laxema	ar Test no:		Ot	oservation hole 1
7.11001	Zanome				•
Borehole ID:	HLX21_ (KLX07A 103.20-193.20 pumpe	2 Test start:			051028 09:51
Test section from - to (m):		0 Responsible for			Stephan Rohs
rest section from to (m).	0.10 00.0	test execution:			Otophan Rono
Section diameter, 2-r _w (m):		Responsible for		Crist	ian Enachescu
Lincar plat O and p		test evaluation:		Recovery period	
Linear plot Q and p		Flow period Indata		Indata	
		$p_0 (kPa) =$	Γ	iliuata	
1490	KLX07A 52.5	$p_0(kPa) =$			
1480 -	• HLX21_2	$p_p(kPa) =$		p _F (kPa) =	
]	51.5 =	$\frac{\rho_p(K \cap G)}{Q_p(m^3/s)} =$	6.59E-04		
1470 - 중 요보	Ka	$\frac{Q_p (m/s)=}{tp (s)} =$	261960		333120
1460 -	ation w	S el S [*] (-)=	201700	S el S [*] (-)=	333120
es sur Activo well IAP al	50.5 August 100 Page 1	EC _w (mS/m)=		3 61 3 (-)=	
ā a	55 So.5 So.5 So.5 So.5 So.5 So.5 So.5 So	Temp _w (gr C)=	 		
140	49.5	Derivative fact.=	0.07	Derivative fact.=	0.11
1430	49				
1420 28.10.2005 29.10.2005 30.10.2005 31.10.2005	01.11.2005 02.11.2005 03.11.2005 04.11.2005				
	0.11.2005 03.11.2005 04.11.2005	Results	<u> </u>	Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
Elapsed time [h	10,2	$dt_1 (min) =$	1548	dt_1 (min) =	1680
10		$dt_2 (min) =$	4122	dt_2 (min) =	3426
	10 1	$T (m^2/s) =$	3.9E-04	$T (m^2/s) =$	3.7E-04
10 °	- Ann	S (-) =	1.3E-04	S (-) =	1.2E-04
	10°	$K_s (m/s) =$		K_s (m/s) =	5.2E-06
	\$ \$44 154	$S_s(1/m) =$	1.9E-06	$S_s (1/m) =$	1.6E-06
10-1	**	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
:/. /	• 10 -1	$C_D(-) =$	NA	$C_D(-) =$	NA
10 -2]		ξ (-) =	NA	ξ (-) =	NA
[]./	10 -2				
. //		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 °1 10 °1 tD/rD2	10 1 10 2	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
lantanulatinal 1 1 1		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	na tanàna tanàna na tanàna br>I		INIA
0.3 10 0 Slapsed time	[h]	$dt_1 (min) =$	1548	0 (III /I u) =	NA
· ·		$dt_2 (min) =$		$C_D(-) =$	NA NA
	10	$T_{T} (m^2/s) = S (-) =$	3.9E-04 1.3E-04	ξ (-) =	INA
10 °	A ACM	14 ()	5.5E-06		
	10°	$K_s (m/s) = S_s (1/m) =$	1.9E-06		
a		© Comments:	1.3L-00		
ad 10-1	• = 0,00	1.00	transmissivity of	f 3.9•10-4 m2/s was	derived from
	10 -1			ch shows the best da	
10 -2	•	derivative quality.	The confidence r	ange for the boreho	le transmissivity
	10 -2			3.0•10-4 m ² /s. The fl	
				e background effect orm straight line inte	
10 ⁻¹	10 0 10 1	Horner plot.	oo dorrod it	straight inic file	-Polition in the
		•			

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxema	r Test no:		Ot	oservation hole 1
5 1 1 15	LII. V(0.0				251222 22 51
Borehole ID:	HLX22_1 (KLX07A 103.20-193.20 pumped	Test start:			051028 09:51
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2·r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
		p ₀ (kPa) =			
1490	- KLX07A • HLX22_1	p _i (kPa) =			
1490		$p_p(kPa) =$		p _F (kPa) =	
1470	525	$Q_p (m^3/s) =$	6.59E-04		
[kP a]		tp (s) =	261960	t _F (s) =	333120
9 1460 -	ation a stion	S el S [*] (-)=		S el S [*] (-)=	
6 1450 -	- No less de la company de la	$EC_w (mS/m) =$		(/	
Pressure Active well [kPa]	50 All liew, copra-design and so	Temp _w (gr C)=			
1440	<i> </i>	Derivative fact.=	0.06	Derivative fact.=	0.1
1430	49.5				
1420 28.10.2005 29.10.2005 30.10.2005 31.10.2005	01.11.2005 02.11.2006 03.11.2005 04.11.2005	- I		D 1	
Т	ime	Results	INIA	Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	NA · ·	- ·	
		Flow regime:	transient	Flow regime:	transient
Elapsed time [h	10,10,10,2	$dt_1 (min) =$		dt ₁ (min) =	2634
10 1		dt ₂ (min) =		$dt_2 (min) =$	4128
	10 '	$T (m^2/s) =$		$T (m^2/s) =$	3.3E-04
10 °	المبيمي	S (-) =	1.2E-04		1.1E-04 4.3E-06
	10 °	$K_s (m/s) = S_s (1/m) =$		$K_s (m/s) = S_s (1/m) =$	1.4E-06
B 10 1			NA		NA
	10 -1 78	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
. //:	1	$C_D(-) =$	NA NA	$C_D(-) =$	NA
10 2 .		ξ (-) =	INA	ξ (-) =	INA
	10 -2	T (m ² /s)	<u> </u>	T (m ² /a)	1
10 -1 ID/dD2	10 0 10 1	$T_{GRF}(m^2/s) = S_{GRF}(-) =$		$T_{GRF}(m^2/s) = S_{GRF}(-) =$	
		$D_{GRF}(-) =$		$D_{GRF}(-) =$ $D_{GRF}(-) =$	-
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative param		
33 P.or mon delivatives-		$dt_1 \text{ (min)} =$	1536	_	NA
o Elapsed time (h	1 ,	$dt_2 \text{ (min)} =$		$C (m /Pa) =$ $C_D (-) =$	NA
0.3 , , , 10 , 3,	10,	2	3.8E-04		NA
	8.	$T_T (m^2/s) = S (-) =$	1.2E-04	- () =	
10 °	م مل	$K_s (m/s) =$	4.9E-06		1
		$S_s (1/m) =$	1.5E-06		
		Comments:	7.02 00		1
B 10 1		L	transmissivity of	3.8•10-4 m2/s was	derived from
	10 -1 8			ch shows the best da	
10 2		derivative quality.	The confidence r	ange for the boreho	le transmissivity
	10 -2	is estimated to be 1			
		during the test is 2.		e background effect orm straight line inte	
10 ⁻¹ tb/rb2	10 0 10	Horner plot.	na oe aenvea 10	am snaight iille iille	rporadon in the
		. r			

	Test Su	ımn	nary Sheet			
Project:	Oskarshamn site investiga					CRwr
Area:	Laxe	emar	Test no:		Ok	servation hole
71100.	Laxe	Jillai				
Borehole ID:			Test start:			051028 09:51
Test section from - to (m):	(KLX07A 103.20-193.20 pun 9 19-8		Responsible for			Stephan Rohs
Tool occion nome to (m).	0.10 0		test execution:			otophan rtono
Section diameter, 2·r _w (m):			Responsible for		Cristi	an Enachescu
Linear plot Q and p			test evaluation: Flow period		Recovery period	
Emodi piot & dila p			Indata		Indata	
			$p_0 (kPa) =$			
1490	— KLX07A 39		p _i (kPa) =			
1480	+ HLX22_2		$p_p(kPa) =$		p _F (kPa) =	
	3	8.6	$Q_p (m^3/s) =$	6.59E-04	, ,	
E 4470	38	87 8 78 Lessure Observation well [kPa]	tp (s) =	261960	t _F (s) =	333120
Pressure Active well (AP)	/ •∕√/ ®	82 Moite	S el S [*] (-)=		S el S [*] (-)=	
9 1450 -	_ /	Spservi	EC _w (mS/m)=		()	
Pa s s s s		7.8 assare (Temp _w (gr C)=			
1440	<i>!</i>	7.8	Derivative fact.=	0.07	Derivative fact.=	0.06
1430	1.1	7.2				
1420 28.10.2005 29.10.2005 30.10.2005 31.10.2006	01.11.2005 02.11.2005 03.11.2005 04.11.200	7				
28.10.2009 29.10.2009 30.10.2009 31.10.2009 Tir		05	Results		Results	
			Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- fl	ow period		$T_M (m^2/s) =$	NA		
			Flow regime:	transient	Flow regime:	transient
Elapsed time (h]		$dt_1 (min) =$		$dt_1 (min) =$	2664
10 1	191 301 1 1 1 1 1 1	10	$dt_2 (min) =$		$dt_2 (min) =$	4254
			$T (m^2/s) =$		$T (m^2/s) =$	5.3E-04
10 °	a second	10.0	S (-) =	2.7E-04		2.4E-04
	V		$K_s (m/s) = S_s (1/m) =$		$K_s (m/s) = S_s (1/m) =$	7.0E-06 3.1E-06
10-4		[APa]		3.3L-00		NA
/. / .		10 (bdd),0d	$C (m^3/Pa) = C_D (-) =$	NA	$C (m^3/Pa) = C_D (-) =$	NA
			ξ(-) =	NA	ξ(-) =	NA
10 2		10 -2	5() -		5() -	
			$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ tDirtoz	10 0 10		$S_{GRF}(-) =$		$S_{GRF}(-) =$	
			D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	eters.	
			$dt_1 (min) =$	2352.00	$C (m^3/Pa) =$	NA
0.3 Elapsed time (N	30, , , , , 10,2		dt_2 (min) =	3996.00		NA
	10	1	$T_T (m^2/s) =$	6.8E-04	ξ(-) =	NA
10 °			S (-) =	2.7E-04		
	10	°	$K_s (m/s) =$	9.0E-06		
10 4		1	$S_s (1/m) =$	3.5E-06		
ga da		[6 ₈] (bdd)	Comments:		260.10.4.51	1 . 10
10 0	10	ğ	The recommended the analysis of the C			
			derivative quality.			
10 4	10		is estimated to be 4	.0•10-4 m ² /s to 9	0.0•10-4 m ² /s. The fl	ow dimension
10-4	10 0 10 1		during the test is 2.			
tD/fD2	. 10		freshwater head cou Horner plot.	na oe aenvea 10	ım suaigin iine inte	rporation in the
			r			

	Test S	Sumr	nary Sheet			
Project:	Oskarshamn site investi					CRwi
Area:	Lax	xemar	Test no:		Or	oservation hole 1
Borehole ID:	HL	X23 1	Test start:			051028 09:51
	(KLX07A 103.20-193.20 p	umped)				
Test section from - to (m):	61.00-1	60.20	Responsible for			Stephan Rohs
Section diameter, 2·r _w (m):			test execution: Responsible for		Criet	ian Enachescu
Section diameter, 24 _W (m).			test evaluation:		Crist	ian Enachesco
Linear plot Q and p			Flow period		Recovery period	
			Indata		Indata	
1490	KLX07A	3 101	p_0 (kPa) =			
1480	• HLX23_		p _i (kPa) =			
1400		100.5	$p_p(kPa) =$		p _F (kPa) =	
<u>v</u> 1470.		100 E	$Q_p (m^3/s) =$	6.59E-04		
Pressure Active well [KP3]	•	- 99.5 W	tp (s) =	261960	t _F (s) =	333120
Active .		servati	S el S [*] (-)=		S el S [*] (-)=	
9 1450 -	•	ie Obs	EC _w (mS/m)=		, ,	
2 2 1440	A. A.	100 ee e	Temp _w (gr C)=			
			Derivative fact.=	0.08	Derivative fact.=	0.0
1430-	<i>y</i> ~	+ 98				
1420 - 28.10.2005 29.10.2006 30.10.2006 31.10.2006	01.11.2005 02.11.2005 03.11.2005 04 Fime	97.5 1.11.2005	Results		Results	
			$Q/s (m^2/s)=$	NA	resuits	
Log-Log plot incl. derivates- f	low period		` '	NA		
Log-Log plot filet. derivates- i	low period		T _M (m ² /s)= Flow regime:	transient	Flow regime:	transiant
						transient 1788
Elapsed time (nj 3 10 ,	-	$dt_1 (min) = $ $dt_2 (min) = $		$dt_1 (min) = $ $dt_2 (min) = $	3702
10		-			$T (m^2/s) =$	2.2E-03
	200	10°	$T (m^2/s) =$	6.4E-04	/	3.6E-0
10 °			$S (-) = K_s (m/s) =$		$S(-) = K_s(m/s) =$	2.2E-0
غير ا		10 1	$K_s (m/s) = S_s (1/m) =$		$S_s (1/m) =$	3.6E-0
10 d		[e/a]		NA		NA
. /. /		po to bo	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
//		10 2	$C_D(-) =$	NA NA	$C_D(-) =$	NA
10 2	•	-	ξ (-) =	INA	ξ(-) =	INA
		10 -3	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ IDVD	10 0 10	7	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
			D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period		Selected represe	ntative paran	1.1	
Elapsed time [h			dt_1 (min) =	141414141414141414141414141414174141414141414141	C (m ³ /Pa) =	NA
10 1 10,1	10,1	1	$dt_2 \text{ (min)} =$		$C_D(-) =$	NA
	4	}	$T_T (m^2/s) =$	2.6E-03		NA
	A ank	10 0	S (-) =	6.4E-04		
10 °	P		$K_s (m/s) =$	2.7E-05		
			$S_s(1/m) =$	6.5E-06		
	* * * * * * * * * * * * * * * * * * * *	10 -1	Comments:	1 3.32 30		1
101	• •	7-00) [KPa		transmissivity of	f 2.6•10-3 m2/s was	derived from
. //	•	d) 00dd			ch shows the best da	
• //		10	derivative quality.	The confidence r	ange for the boreho	le transmissivity
/ /	•		is estimated to be 1	.0•10-3 m ² /s to 5	5.0•10-3 m ² /s. The fl	ow dimension
1 1 1		during the test is 2. According to the background effects no hydrogeneous				
] /		10 -3	functions to 1	14 be 4 1 C		macletics 1
10 ⁻¹ 10 ⁰ 10 100		10 -3	freshwater head cou Horner plot.	ıld be derived fo	orm straight line inte	rpolation in the

	Test Su	umma	ary Sheet			
Project:	Oskarshamn site investiga					CRwr
Area:	Laxe	emar T	est no:		Ok	servation hole
7 (100)	Laxe	oma				•
Borehole ID:			est start:			051028 09:51
Test section from - to (m):	(KLX07A 103.20-193.20 pun 6.10-6		Responsible for			Stephan Rohs
rost scotlon from to (m).	0.10 0		est execution:			Otophan Rono
Section diameter, 2-r _w (m):			Responsible for		Cristi	an Enachescu
Linear plot Q and p			est evaluation: low period		Recovery period	
Linear plot & and p		li i	ndata		Indata	
1490	1.30		o ₀ (kPa) =		IIIuata	l
	— KLX07A ◆ HLX23_2		o _i (kPa) =			
1480			$\rho_p(kPa) =$		p _F (kPa) =	
1470	96.		$Q_p (m^3/s) =$	6.59E-04	ρ _Γ (κι α) –	
H R P P P P P P P P P P P P P P P P P P	96.3	62 ≚ C	$p(s) = \frac{p(s)}{p(s)}$	261960	t _F (s) =	333120
M M 1460	96	vation	S el S [*] (-)=	201700	S el S [*] (-)=	333120
9.1 Y 0.1450	95.4	obser E	C _w (mS/m)=		3 61 3 (-)=	
Pressure Active well [kPa]	95.4		emp _w (gr C)=			
1440	- 95.4		Derivative fact.=	0.07	Derivative fact.=	0.07
1430	95:	-				
40	105	.				
28.10.2005 29.10.2005 30.10.2005 31.10.2005	01.11.2005 02.11.2005 03.11.2005 04.11.2005	R	Results		Results	<u>I</u>
		C	$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- f	low period	_	$_{\rm M} ({\rm m}^2/{\rm s}) =$	NA		
Elapsed time [h	10,10,10,10,2		low regime:	transient	Flow regime:	transient
10		d	$It_1 (min) =$	894	dt_1 (min) =	954
	E 10	o¹ d	$It_2 (min) =$	3708	dt_2 (min) =	3594
10 1		Т	$(m^2/s) =$	1.6E-03	$T (m^2/s) =$	1.3E-03
	~~~·	S	6 (-) =	2.0E-04	S (-) =	1.5E-04
10 °		[°] K	(s (m/s) =		$K_s (m/s) =$	2.4E-05
Q As a desired		© C	$S_s(1/m) =$	3.6E-06	$S_s(1/m) =$	2.9E-06
10.2 10.2 10.2 10.2 10.2 10.2 10.2 10.2	10	8	$C(m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
/1 /1		C	$C_D(-) =$	NA	$C_D$ (-) =	NA
10 2	10	ο² ξ	, (-) =	NA	ξ (-) =	NA
					2	
/_/			$_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ⁰ IDHD2	10 1 10 2	_	S _{GRF} (-) =		$S_{GRF}(-) =$	
log log plet incl. demissetters -	rocovery period		O _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	1111	selected represe lt ₁ (min) =			NA
Elapsed time (h	1*	_	$ \frac{\text{lt}_1 \text{ (min)}}{\text{lt}_2 \text{ (min)}} =  $	894 3708	$\frac{C (m^3/Pa) =}{C_D (-)} =$	NA NA
10 1		_	2	1.6E-03		NA NA
	<u>.</u>		$\frac{1}{T} (m^2/s) =$ $\frac{1}{S} (-) =$	2.0E-04	<i>¬</i> (⁻) =	14/1
10 °	J-10*		$G_{s}(m/s) =$	3.0E-05		
		_	$G_s(11/3) = G_s(1/m) = G_s(1/m)$	3.6E-06		
, , , , , , , , , , , , , , , , , , ,	10.		Comments:	3.32 30		]
g 10-1	- '	8		transmissivity of	1.6•10-3 m2/s was	derived from
·/·/		u	he analysis of the C	CRw phase, which	h shows the best da	ta and
10 -2	10 '				ange for the borehol	
	ļ				.0•10-3 m ² /s. The fl e background effects	
					rm straight line inte	
10 ⁻¹ 10 ⁰ sb/rb2	10 ¹ 10 ²		Horner plot.		<i>3</i>	

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CRwr
				Ol	servation hole
Area:	Laxema	r Test no:			1
Borehole ID:	HLX24	1 Test start:	<del> </del>		051028 09:51
	(KLX07A 103.20-193.20 pumped	i)			
Test section from - to (m):	41.00-175.2	0 Responsible for			Stephan Rohs
Section diameter, 2-r _w (m):		test execution: Responsible for	<del> </del>	Criet	ian Enachescu
Section diameter, 2-1 _w (iii).		test evaluation:		Clist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
		$p_0$ (kPa) =			
1490	— KLX07A ◆ HLX24_1	p _i (kPa ) =			
1480	28.6	$p_p(kPa) =$		p _F (kPa ) =	
1470	/ . M / =	$Q_p (m^3/s) =$	6.59E-04		
Pressure Active well (F.P.)	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tp (s) =	261960	t _F (s) =	333120
A Active v	opte X-os	S el S [*] (-)=		S el S [*] (-)=	
9 1450 -	sine Ob	EC _w (mS/m)=			
E 140	S 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Temp _w (gr C)=			
1430	97.8	Derivative fact.=	0.08	Derivative fact.=	0.07
1420	97.6		1		
28 10.2005 29.10.2005 30.10.2005 31.10.2005 <b>Tir</b>	01.11.2005 02.11.2005 03.11.2005 04.11.2005 <b>ne</b>		1		
		Results	•	Results	•
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
		$dt_1 (min) =$	1872	$dt_1$ (min) =	1470
10.0 E impsed time 10.0 10.1	10,2	$dt_2 (min) =$	3912	$dt_2$ (min) =	4164
		$T (m^2/s) =$	2.2E-03	$T (m^2/s) =$	2.1E-03
	10 °	S (-) =	6.3E-04	/	2.7E-04
10	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	$K_s$ (m/s) =	1.6E-05	$K_s (m/s) =$	1.6E-05
· ·	10 -1	$S_s (1/m) =$	4.7E-06	$S_s (1/m) =$	2.0E-06
bd 10 1	• • • •	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
· //		C _D (-) =	NA	C _D (-) =	NA
10 2	10	ξ (-) =	NA	ξ (-) =	NA
. //				- , ,	
//	10 -3	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 10/11	0 10 1 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran		
		$dt_1 (min) =$	1872	C (m ³ /Pa) =	NA
Elapsed time	[h] 10 1 10 2	$dt_2 (min) =$	3912	$C_D(-) =$	NA
10 1	<u>.</u>	$T_T (m^2/s) =$	2.2E-03		NA
	Ā.	S (-) =	6.3E-04	` ,	
	100	$K_s$ (m/s) =	1.6E-05		
10 °		$S_s (1/m) =$	4.7E-06		
9 ********************************	03	Comments:	<u> </u>		<u> </u>
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	10 -1		transmissivity of	2.2•10-3 m2/s was	derived from
10-4		the analysis of the 0	CRw phase, which	ch shows the best da	ta and
. :/:/ . :	0.03			ange for the boreho	
.//	10 -2			5.0•10-3 m ² /s. The fl	
40.4				e background effect orm straight line inte	
10 ⁻¹ 10 tDM	טר 10 [°] D2	Horner plot.	ara oc ucriveu it	an straight file life	Polation in tile
		•			

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigatio				CRwr
Area:	Laxema	ar Test no:		<u>Or</u>	oservation hole 1
Darahala ID:	KI VOO	C Took otout			054000 00.54
Borehole ID:	(KLX07A 103.20-193.20 pumped	6 Test start:			051028 09:51
Test section from - to (m):	348.00-451.0	0 Responsible for			Stephan Rohs
Coation diameter 2 r (m)		test execution:		Crint	ian Enachescu
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
1490		$p_0$ (kPa) =			
	• KLX02 6	p _i (kPa ) =			
1480	57	$p_p(kPa) =$		p _F (kPa ) =	
1470 - G	56.5 a.	$Q_p (m^3/s) =$	6.59E-04		
¥ 1460-	55 U	tp (s) =	261960	$t_F$ (s) =	333120
Press ure Active well [RPa]	555 25 25 25 25 25 25 25 25 25 25 25 25	S el S [*] (-)=		S el S [*] (-)=	
9 1450 88	55 E 8	EC _w (mS/m)=			
1440	54.5 <b>&amp;</b>	Temp _w (gr C)=			
1430	54	Derivative fact.=	0.09	Derivative fact.=	0.1
•	53.5				
1420 28.10.2005 29.10.2005 30.10.2005 31.10.2005	01.11.2005 02.11.2005 03.11.2006 04.11.2005	Results		Results	
		-	NA	Results	1
_og-Log plot incl. derivates-	flow period	Q/s $(m^2/s)=$ T _M $(m^2/s)=$	NA		
Log-Log plot men denvates-	now period	Flow regime:	transient	Flow regime:	transient
		$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	2220
Elapsed tin	.a[p] .1p1	$dt_2 (min) =$		$dt_2 \text{ (min)} =$	271:
	10 1	$T (m^2/s) =$		$T (m^2/s) =$	6.3E-0
	3	S (-) =	2.3E-04	\ /	1.2E-0
10 °	ANN .	$K_s (m/s) =$		$K_s (m/s) =$	6.1E-0
	10 °	$S_s(1/m) =$		$S_s(1/m) =$	1.2E-0
g q	0.3	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10-1		$C_D(-) =$	NA	$C_D(-) =$	NA
	10 -1	ξ (-) =	NA	ξ(-) =	NA
/:/	0.03				
10 -1 11	0 0 10 1 10 2 NHD2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
ıu	YLLZ	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives	- recovery period	Selected represe			T
		$dt_1 (min) =$		$C (m^3/Pa) =$	NA
10 ² Elapsed tim	ne [h]	$dt_2 (min) =$		$C_D(-) =$	NA
	10 ²	$T_T (m^2/s) =$	6.9E-04		NA
	9	S (-) =	2.3E-04		
10 1	10 1	$K_s (m/s) =$	6.7E-06		<u> </u>
	1 4 AL	$S_s (1/m) =$ Comments:	2.2E-06		
10°		<u>§</u>	tranemiceivity of	f 6.9•10-4 m2/s was	derived from
:	~\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			ch shows the best da	
10-1	ļ	derivative quality.	The confidence r	ange for the boreho	le transmissivit
	10 -1	is estimated to be 2			
	·			e background effects	
10 -1 11 1D	0 0 10 1 10 2 Wrtt2	Horner plot.	ara oc ucriveu it	an saagn inc me	Polation in tile
104	7 10 10 10 10 10 10 10 10 10 10 10 10 10		ald be derived fo	orm straight line inte	rpolation in t

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Lovomo	ar Test no:		Ot	oservation hole
Alea.	Laxenia	arrestrio.			ı
Borehole ID:		7 Test start:			051028 09:51
Test easting from to (m):	(KLX07A 103.20-193.20 pumpe				Ctamban Daha
Test section from - to (m):	209.00-347.0	0 Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		Responsible for		Crist	ian Enachescu
		test evaluation:		P*************************************	****
Linear plot Q and p		Flow period		Recovery period	
		Indata	1	Indata	Ī
1490	62	$p_0 (kPa) =$			
1480		$p_i (kPa) =$		n (kDa) –	
		$p_p(kPa) =$	6.59E-04	p _F (kPa ) =	
च च 4	- KLX07A • KLX02_7	$Q_p (m^3/s) =$			222120
9 1460 -	ltion %	tp(s) =	261960		333120
AC #450	sta sta	$S \text{ el } S^{\star} (-)=$ $EC_w (mS/m)=$		S el S [*] (-)=	
Fedillow outsty variety	TAL MOTA    • KLX02.7    5.5   Il M. Mol purpose of the control of	Temp _w (gr C)=			<del>                                     </del>
1440-	Press	Derivative fact.=	0.03	Derivative fact.=	0.07
1430	52	Derivative fact.=	0.03	Denvative fact.=	0.07
1420	50				
28.10.2005 29.10.2005 30.10.2005 31.10.2005	01.11.2005 02.11.2005 03.11.2005 04.11.2005 Time	Results		Results	L
		$Q/s (m^2/s) =$	NA		
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$	NA		
<u> </u>	•	Flow regime:	transient	Flow regime:	transient
		$dt_1 (min) =$	1242	$dt_1 (min) =$	1422
Elapsed time	n) 1p 1 1p 2	$dt_2$ (min) =	4038	$dt_2$ (min) =	4344
	30	$T (m^2/s) =$	2.3E-04	$T (m^2/s) =$	1.8E-04
	10 1	S (-) =	7.3E-05	S (-) =	8.0E-05
10 °	• • • • • • • • • • • • • • • • • • • •	$K_s$ (m/s) =	1.7E-06	$K_s (m/s) =$	1.3E-06
		$S_s (1/m) =$	5.3E-07	$S_s (1/m) =$	5.8E-07
od o	10°	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1		$C_D(-) =$	NA	$C_D(-) =$	NA
/./	0.3	ξ (-) =	NA	ξ (-) =	NA
. / /	• • • • • • • • • • • • • • • • • • •				
	10 1 10 2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 sD/rt	02	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives	recovery period	Selected represe	na tanàna tanàna na tanàna br>I		1
		$dt_1 (min) =$	1242.00	0 (III /I u) =	NA
10 1 10 1 Elapsed time	[h] 10, 10, 1	$dt_2 (min) =$	4038.00		NA
	30	$T_T (m^2/s) =$	2.3E-04	ξ (-) =	NA
		S (-) =	7.3E-05		
40.0	10	$K_s (m/s) =$	1.7E-06		<u> </u>
10 "		S _s (1/m) =  Comments:	5.3E-07		
a .		<u> </u>	tranomicoivity of	f 2.3•10-4 m2/s was	derived from
	10 °			ch shows the best da	
10-1	0.3	derivative quality.	The confidence r	ange for the boreho	le transmissivity
. / /	•			5.0•10-4 m ² /s. The fl	
	10 1			e background effect orm straight line inte	
10 ⁻¹ 10 10 iDirt	10 1 10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Horner plot.	oo derived it	saugni inic inic	-Polation in the
		-			

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxemar	Test no:		Ot	servation hole 1
Borehole ID:	KLX02_8 (KLX07A 103.20-193.20 pumped)	Test start:			051028 09:51
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2-r _w (m):		Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Emcar plot & and p		Indata		Indata	
1490	79	$p_0$ (kPa) =			
	78	p _i (kPa ) =			
1480		$p_p(kPa) =$		p _F (kPa ) =	
1470	KLX07A	$Q_p (m^3/s) =$	6.59E-04		
I KP a	• KLX02_8   76 \( \frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fir}}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fir}}}}}}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\	tp(s) =	261960	t _F (s) =	333120
4ive we vit	vation v.	S el S [*] (-)=		S el S [*] (-)=	
Pressure Active well [kPa]	74 <b>QO</b>	EC _w (mS/m)=		( )-	
P. P	- KLX07A NLX02.8 N N N N N N N N N N N N N N N N N N N	Temp _w (gr C)=			
1440	72	Derivative fact.=	0.09	Derivative fact.=	0.10
1430 -	<b>d</b>				
1420	70				
28.10.2005 29.10.2005 30.10.2005 31.10.2005 <b>T</b>	01.11.2005 02.11.2005 03.11.2005 04.11.2005	Results	<u> </u>	Results	
		Q/s $(m^2/s)=$	NA		
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
Elapsed time [h]	1 40 ² 200 40 ³	$dt_1$ (min) =	1008	$dt_1$ (min) =	1716
10 1	300 10	$dt_2$ (min) =	2340	$dt_2$ (min) =	3366
		$T (m^2/s) =$	2.4E-04	$T (m^2/s) =$	2.0E-04
	10 1	S (-) =	6.7E-04	S (-) =	3.5E-04
10 °	3	$K_s$ (m/s) =		$K_s (m/s) =$	4.0E-05
8	<u> </u>	$S_s (1/m) =$		$S_s(1/m) =$	6.9E-0
	9) (D4d) 1046	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	NA
10-1	0.3	$C_D(-) =$	NA	$C_D$ (-) =	NA
		ξ (-) =	NA	ξ (-) =	NA
\ ··	10 -1				
10 ° tD/rD2	10 1 10 2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
		$S_{GRF}(-) =$		$S_{GRF}(-) =$	
log log platingle desired	receivery period	D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe			INIA
		$dt_1 (min) =$	1008.00	0 (III /I a) =	NA
10 1 10 1 10 1 10 1 10 1 10 1 10 1 10	n)	$dt_2 (min) =$	2340.00		NA
	30	$T_T (m^2/s) =$	2.4E-04	ξ(-) =	NA
	ga Fro 1	$S (-) = K_s (m/s) =$	6.7E-04 4.8E-05		
10 °.	The second secon	$K_s (m/s) = S_s (1/m) =$	4.8E-05 1.3E-04		
فر	· · · · · · · · · · · · · · · · · · ·	Comments:	1.3E-04		
od o	ි. 0 ම ශ්ලාවය 10		transmissivity of	£ 2.4•10-4 m2/s was	derived from
10 ⁴	9004			ch shows the best da	
	0.3	derivative quality.	The confidence r	ange for the boreho	le transmissivity
/ -/	10 -1			1.0•10-4 m ² /s. The fl	
• • • •		during the test is 2. head could be derived		e background effects line interpolation ir	
10 -1 10 ⁹ 1D/ID:	10 10 2	plot.	es roim saaigill	c interpolation ii	HOHICI
		_			

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]		Ok	CRw servation hole
Area:	Laxema	Test no:		<u>Oi</u>	servation note
Borehole ID:	KLX07B_1	Test start:			051028 09:51
	(KLX07A 103.20-193.20 pumped)				0: 1 5 1
Test section from - to (m):	112.00-200.00	Responsible for test execution:			Stephan Rohs
Section diameter, 2-r _w (m):		Responsible for		Crist	ian Enachesc
		test evaluation:			***************************************
Linear plot Q and p		Flow period		Recovery period	
		Indata	•	Indata	1
1490	80	p ₀ (kPa) =			
1480	70	p _i (kPa ) =			
1400		$p_p(kPa) =$		p _F (kPa ) =	
1470 ·	──KLX07A ◆ KLX07B_1	$Q_p (m^3/s) =$	6.59E-04		
Prossure Active well [RPa].		tp (s) =	261960	$t_F$ (s) =	33312
Active	Servati	S el S [*] (-)=		S el S [*] (-)=	
2 1450 - 1 150 -	<b>0</b> 1 ∞ 9	EC _w (mS/m)=			
1440	Press	Temp _w (gr C)=			
1430	10	Derivative fact.=	0.02	Derivative fact.=	0.0
1420					
28.10.2006 28.10.2006 30.10.2006 31.10.2005 01.11.2006 02.11.2006 03.11.2005 04.11.27 Time		Results		Results	<u> </u>
		$Q/s (m^2/s) =$	NA		
og-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$	NA		
		Flow regime:	transient	Flow regime:	transient
Elapsed time (h)	19,19,	$dt_1 (min) =$	144	$dt_1$ (min) =	17
, 1		$dt_2 (min) =$	366	$dt_2$ (min) =	34
	30	$T (m^2/s) =$	1.4E-04	$T (m^2/s) =$	1.3E-0
		S (-) =	2.4E-04	. ,	2.0E-0
	110	$K_s (m/s) =$	1.6E-06	$K_s (m/s) =$	1.5E-0
	A A A A A A A A A A A A A A A A A A A	$S_s (1/m) =$	2.7E-06	$S_s (1/m) =$	2.3E-0
$\mathcal{A}$	Pt01 [66	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
	10° gd	$C_D(-) =$	NA	$C_D(-) =$	NA
//		ξ (-) =	NA	ξ (-) =	NA
	0.3				
	10 -1	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 -2 10 -1 10 ° tDrD2	10 ¹ 10 ² 10 ³	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
og-Log plot incl. derivatives-	recovery period	Selected represe		neters.	
Elapsed time [h	3	$dt_1$ (min) =		$C (m^3/Pa) =$	NA
10 1		$dt_2$ (min) =	366.00		NA
	30	$T_T (m^2/s) =$	1.4E-04	ξ (-) =	NA
	<u>.</u>	S (-) =	2.4E-04		
1		$K_s (m/s) =$	1.6E-06		
10 °	10 '				
10°		$S_s (1/m) =$	2.7E-06		
" The state of the	A		2.7E-06		<u> </u>
···	[Vest Lines or ]	Comments: The recommended	transmissivity of	f 1.4•10-4 m2/s was	
10 4		Comments: The recommended the analysis of the Comments	transmissivity of CRw phase (inne	f 1.4•10-4 m2/s was er zone), which show	s the best data
Jan	[Vest Lines or ]	Comments: The recommended the analysis of the Canalysis o	transmissivity of CRw phase (inne ity. The confider	f 1.4•10-4 m2/s was er zone), which show the range for the both	s the best data rehole
Jan	n (legil) (logil) (log	Comments: The recommended the analysis of the C and derivative qual- transmissivity is est	transmissivity of CRw phase (inne ity. The confider imated to be 9.0	f 1.4•10-4 m2/s was r zone), which show nce range for the bou •10-5 m²/s to 4.0•10	vs the best data rehole 0-4 m ² /s. The
Jan	n (legil) (logil) (log	Comments: The recommended the analysis of the Cand derivative qualitransmissivity is est flow dimension dur	transmissivity of CRw phase (inne- ity. The confider imated to be 9.0 ing the test is 2.	f 1.4•10-4 m2/s was er zone), which show the range for the both	vs the best data rehole 0-4 m ² /s. The ckground

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxemar	Test no:		Ot	oservation hole
Alca.	Laxemai	1 031 110.			'
Borehole ID:	KLX07B_2				051028 09:51
Test section from - to (m):	(KLX07A 103.20-193.20 pumped)	Responsible for			Stephan Rohs
rest section from to (m).	43.00 111.00	test execution:			Otophan Rone
Section diameter, 2·r _w (m):		Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation:			***************************************
Linear plot Q and p		Flow period Indata		Recovery period Indata	
		p ₀ (kPa) =	1	inuata	1
1490	80	$p_0 (KPa) =$ $p_i (kPa) =$			
1480	70	$p_i(kPa) = p_p(kPa)$		p _F (kPa ) =	
1470	60 50		6.59E-04		
[KPa]	- KLX07A • KLX07B_2	$Q_{p} (m^{3}/s) = $ $tp (s) =$	261960		333120
M 1460 -	s ation v	S el S [*] (-)=	201700	S el S [*] (-)=	333120
Pressure Active well [KPa]	Tops qo	EC _w (mS/m)=		S el S (-)=	
Tes 31440		Temp _w (gr C)=			
	200	Derivative fact.=	0.09	Derivative fact.=	0.0
1430	<b></b> 10	20	****	20	
1420 28.10.2005 29.10.2005 30.10.2005 31.10.2005	0.1.11.2005 02.11.2005 03.11.2005 04.11.2005				
	Time	Results		Results	
		$Q/s (m^2/s)=$	NA		
Log-Log plot incl. derivates-	flow period	$T_M (m^2/s) =$	NA		
Elapsed tin	ne [h]	Flow regime:	transient	Flow regime:	transient
10 1		$dt_1$ (min) =	NA	$dt_1$ (min) =	558
	30	$dt_2$ (min) =	NA	$dt_2$ (min) =	4116
		$T (m^2/s) =$	1.7E-04	$T (m^2/s) =$	1.5E-04
10 %	10 1	S (-) =	2.2E-04	,	1.8E-04
	;	$K_s (m/s) =$	2.7E-06	$K_s (m/s) =$	2.4E-06
00, 100		$S_s (1/m) =$	3.6E-06	$S_s (1/m) =$	2.9E-06
- I kitikitik	10° 00'00'	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1	· · · · · · · · · · · · · · · · · · ·	$C_D(-) =$	NA	$C_D(-) =$	NA
/ '/.	0.3	ξ (-) =	NA	ξ (-) =	NA
/ /					
10-1	10 -1	•		2	
_	10 10 10 2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10	0 10 1 10 2 10 2	$T_{GRF}(m^2/s) = S_{GRF}(-) =$		$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$	
		$S_{GRF}(-) = D_{GRF}(-) =$		$S_{GRF}(-) = D_{GRF}(-) =$	
Log-Log plot incl. derivatives		S _{GRF} (-) = D _{GRF} (-) = Selected represe		S _{GRF} (-) = D _{GRF} (-) = neters,	
		$S_{GRF}(-) = D_{GRF}(-) = $ Selected represent $dt_1 \text{ (min)} = $	NA	$S_{GRF}(-) = D_{GRF}(-) = 0$ Heters. $C(m^3/Pa) = 0$	NA
		$S_{GRF}(-) = D_{GRF}(-) = Selected represent to the depth of the dep$	NA NA	$S_{GRF}(-) = D_{GRF}(-) = 0$ neters. $C (m^3/Pa) = C_D(-) = 0$	NA
Log-Log plot incl. derivatives		$S_{GRF}(-) = D_{GRF}(-) = Selected representations of the selected representation of the se$	NA NA 1.7E-04	$S_{GRF}(-) = D_{GRF}(-) = 0$ neters. $C (m^3/Pa) = C_D(-) = 0$	
Log-Log plot incl. derivatives		$S_{GRF}(-) = D_{GRF}(-) = Selected representations of the selected representation of the se$	NA NA 1.7E-04 2.2E-04	$S_{GRF}(-) = D_{GRF}(-) = 0$ leters. $C (m^3/Pa) = 0$ $C_D (-) = 0$	NA
Log-Log plot incl. derivatives		$S_{GRF}(-) = D_{GRF}(-) = Selected represent to the selected represe$	NA NA 1.7E-04 2.2E-04 2.7E-06	$S_{GRF}(-) = D_{GRF}(-) = D_{$	NA
Log-Log plot incl. derivatives	- recovery period	$S_{GRF}(-) = D_{GRF}(-) = Selected representations of the selected representation of the se$	NA NA 1.7E-04 2.2E-04	$S_{GRF}(-) = D_{GRF}(-) = D_{$	NA
Log-Log plot incl. derivatives	- recovery period	$S_{GRF}(-) = D_{GRF}(-) = Selected representation of the sel$	NA 1.7E-04 2.2E-04 2.7E-06 3.6E-06	$S_{GRF}(-) = D_{GRF}(-) = 0$ <b>leters.</b> $C (m^3/Pa) = 0$ $C_D (-) = 0$	NA NA
Log-Log plot incl. derivatives	- recovery period	$S_{GRF}(-) = D_{GRF}(-) = Selected representations of the selected representation of the se$	NA 1.7E-04 2.2E-04 2.7E-06 3.6E-06	$S_{GRF}(-) = D_{GRF}(-) = 0$ <b>leters.</b> $C (m^3/Pa) = 0$ $C_D(-) = 0$ $E_D(-) = 0$	NA NA derived from
Log-Log plot incl. derivatives	- recovery period	$S_{GRF}(-) = D_{GRF}(-) = Selected representations of the following content of the selection of the select$	NA 1.7E-04 2.2E-04 2.7E-06 3.6E-06 transmissivity of CRw phase (inne	$S_{GRF}(-) = D_{GRF}(-) = 0$ <b>leters.</b> $C (m^3/Pa) = 0$ $C_D(-) = 0$ $E_D(-) = 0$	NA NA derived from the best data
Log-Log plot incl. derivatives	- recovery period	$S_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = Selected representation of the properties of the selection of the s$	NA 1.7E-04 2.2E-04 2.7E-06 3.6E-06 transmissivity of CRw phase (inneity. The confider	$S_{GRF}(-) = D_{GRF}(-) = 0$ <b>leters.</b> $C (m^3/Pa) = 0$ $C_D(-) = 0$ $E_D(-) = 0$	NA NA derived from sthe best data rehole
Log-Log plot incl. derivatives	- recovery period	$S_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = Selected representation of the properties of the selection of the s$	NA 1.7E-04 2.2E-04 2.7E-06 3.6E-06 transmissivity of CRw phase (innetty. The confiderimated to be 9.0 ing the test is 2.	$S_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = D_{GR}(-) =$	derived from a sthe best data rehole 1-4 m²/s. The ckground
Log-Log plot incl. derivatives	- recovery period	$S_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = Selected representation of the properties of the selection of the s$	NA  1.7E-04  2.2E-04  2.7E-06  3.6E-06  transmissivity of CRw phase (inneity. The confider imated to be 9.0 ing the test is 2. er head could be	$S_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = D_{GRF}(-) = D_{GR}(-) =$	derived from a sthe best data rehole 10-4 m²/s. The ckground

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CRwr
Area:	Laxemar	Test no:		<u>Or</u>	servation hole 1
Borehole ID:	KLX07B_3	Toot otort			051028 09:51
borenoie ib.	(KLX07A 103.20-193.20 pumped)				031026 09.31
Test section from - to (m):	0.00-48.00	Responsible for			Stephan Rohs
Section diameter, 2-r _w (m):		test execution: Responsible for		Criet	an Enachescu
Section diameter, 2-1 _w (m).		test evaluation:		Clist	an Enachesco
Linear plot Q and p		Flow period	•	Recovery period	
		Indata		Indata	
1490	74	$p_0$ (kPa) =			
1480 -	72	p _i (kPa ) =			
<b>1</b>		$p_p(kPa) =$		p _F (kPa ) =	
1470 - ©	—KLX07A • KLX07B_3 70	$Q_p (m^3/s) =$	6.59E-04		
X 1460 ·	w wel	tp (s) =	261960	$t_F$ (s) =	333120
Pressure Active well [RPa]	-KLX07A  • KLX07B_3   □ Male A set of the s	S el S [*] (-)=		S el S [*] (-)=	
9 1450 - 10 18 90	. † 60 op a d	EC _w (mS/m)=			
1440	e e e	Temp _w (gr C)=			
1430	62	Derivative fact.=	0.06	Derivative fact.=	0.0
	~				
1420 28.10.2005 29.10.2005 30.10.2005 31.10.200	60 01.11.2005 02.11.2005 03.11.2005 04.11.2005 <b>Time</b>	D 1/ -		D!/-	
		Results	IN I A	Results	1
log log platinal derivates	flour poriod	Q/s $(m^2/s)=$	NA NA		
Log-Log plot incl. derivates-	- flow period	T _M (m ² /s)= Flow regime:	transient	Flow regime:	transiant
10 1 10 1 Elapsed tim	ne [h]	dt ₁ (min) =		dt ₁ (min) =	transient 1038
	30	$dt_1 (min) =$ $dt_2 (min) =$		$dt_1 (min) = $ $dt_2 (min) = $	3810
		2		$T (m^2/s) =$	1.4E-04
		$T (m^2/s) = $ $S (-) = $	1.9E-04	/	1.3E-04
10 °	3	$K_s (m/s) =$		$K_s (m/s) =$	2.9E-06
A. A.		$S_s (1/m) =$		$S_s(1/m) =$	2.6E-06
, ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	10 ° 0.00-d)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
0,24004.4	*** g	$C_D(-) =$	NA	$C_D(-) =$	NA
. • / /	0.3	ξ(-) =	NA	ξ(-) =	NA
: '//	10 -1				
	•	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10	0 10 ¹ 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivative	s- recovery period	Selected represe	ntative paran	neters.	
Elapsed ti	ime (h) 10. ¹ 10. ²	$dt_1$ (min) =		$C (m^3/Pa) =$	NA
10 1		$dt_2$ (min) =	3810.00		NA
	30	$T_T (m^2/s) =$	1.4E-04		NA
1	i i	S (-) =	1.3E-04		
10 5	10 '	K _s (m/s) =	2.9E-06		
10 2		$K_s (m/s) = S_s (1/m) =$	2.9E-06 2.6E-06		
10.5		$K_s (m/s) = S_s (1/m) = $ Comments:	2.6E-06		
10 4	10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 °	$K_s (m/s) = S_s (1/m) = Comments:$	2.6E-06	f 1.4•10-4 m2/s was	
10 ²		$K_s (m/s) = S_s (1/m) = $ Comments: The recommended the analysis of the C	2.6E-06 transmissivity of CRwr phase, whi	f 1.4•10-4 m2/s was	ata and
10 4		K _s (m/s) = S _s (1/m) = Comments: The recommended the analysis of the Coderivative quality. The sestimated to be 1.	2.6E-06 transmissivity of CRwr phase, whi The confidence r .0•10-4 m ² /s to 4	f 1.4•10-4 m2/s was ich shows the best dange for the boreho 1.0•10-4 m²/s. The fl	ata and le transmissivity ow dimension
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	To o o o o o o o o o o o o o o o o o o	K _s (m/s) = S _s (1/m) = Comments: The recommended the analysis of the Coderivative quality. To is estimated to be 1 during the test is 2.	2.6E-06 transmissivity of CRwr phase, whi The confidence r .0•10-4 m²/s to 4 According to the	f 1.4•10-4 m2/s was ich shows the best datange for the boreho 4.0•10-4 m²/s. The fle background effects	nta and le transmissivity ow dimension s no fresh water
10 ⁴	To o o o o o o o o o o o o o o o o o o	K _s (m/s) = S _s (1/m) = Comments: The recommended the analysis of the Coderivative quality. To is estimated to be 1 during the test is 2.	2.6E-06 transmissivity of CRwr phase, whi The confidence r .0•10-4 m²/s to 4 According to the	f 1.4•10-4 m2/s was ich shows the best dange for the boreho 1.0•10-4 m²/s. The fl	nta and le transmissivity ow dimension s no fresh water

Borehole: KLX07A

## **APPENDIX 8-2**

KLX07A Section 193.00-313.00 m pumped

Observation hole Test Summary Sheets

	Test Sur	mm	ary Sheet			
Project:	Oskarshamn site investigat				01	CRw
Area:	Laxer	mar 7	Test no:		Or	oservation hole
Borehole ID:	HLX10	0 17	Test start:			051112 18:54
borenole ID.	(KLX07A 193.00-313.00 pum)		rest start.			031112 10.34
Test section from - to (m):	3.00-85		Responsible for est execution:			Stephan Rohs
Section diameter, 2-r _w (m):	_	F	Responsible for		Crist	ian Enachescı
Linear plot Q and p			est evaluation: Flow period		Recovery period	
Linear plot Q and p		181	ndata		Indata	J.
		L	o ₀ (kPa) =		muutu	
2390	KLX07A • HLX10_1	70	o _i (kPa ) =			
2370	- 60	_	$O_p(kPa) =$		p _F (kPa ) =	
2360			<u> </u>	6.07E-04	p _F (Ki u ) =	
<u>g</u> 2350	50	KP	$Q_p (m^3/s) = $ $P(s) = $	244343	t _E (s) =	44930
EI   10   2340		ion we		244343		44930
200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 -			S el S* (-)=		S el S [*] (-)=	
anssene .	†30	e in E	EC _w (mS/m)=	<u> </u>		
E 2320	20	Press □	Temp _w (gr C)=	0.00	5	0.0
2310	10	F	Derivative fact.=	0.02	Derivative fact.=	0.0
2300		ŀ				
2230 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005 17.11.2005 18.11.2005 19.11.2005 20.11.2005 Time		F	Results	<u> </u>	Results	
			$Q/s (m^2/s) =$			
Log-Log plot incl. derivates- flo	ow period		$\Gamma_{\rm M}$ (m ² /s)=			
Elapsed time [h]			Flow regime:	transient	Flow regime:	transient
10 10 10 10 10	10,3	c	$dt_1 (min) =$	171	$dt_1 (min) =$	16
	30	-	$dt_2 \text{ (min)} =$		$dt_2 \text{ (min)} =$	338
	10 1		$\Gamma (m^2/s) =$		$T (m^2/s) =$	1.8E-0
Mark the state of			S (-) =	1.0E-05		1.3E-0
10 0	A .	-	$K_s (m/s) =$		$K_s (m/s) =$	2.2E-0
		-	$S_s(1/m) =$		$S_s(1/m) =$	1.5E-0
g	10 °	. =	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	NA
,	· ·		$C_D(-) =$	NA	$C_{D}(-) =$	NA
"  //	0.3			NA		NA
	·	-	<del>(</del> ; (-) =	INA	ξ (-) =	INA
<b>/</b>			$\Gamma_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ° 10 1 tDxD2	10 ² 10 ³ 10 ⁴		$S_{GRF}(III / S) =$		$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	
			D _{GRF} (-) =		$D_{GRF}(-) =$	
Log-Log plot incl. derivatives-	recovery period		Selected repres	L entative paran		
Elapsed time (h)		181	$dt_1 \text{ (min)} =$	162		NA
10 1 10 1 10 1		-	$dt_2 \text{ (min)} =$		$C_D(-) =$	NA
	• 30	_		1.8E-04		NA
	<b></b>		$\frac{\Gamma_{T} (m^{2}/s) = }{S (-)}$	1.3E-04		14/7
	10			2.2E-06		
10 %			$K_s (m/s) =$			
9	3	_	S _s (1/m) =	1.5E-07		
a d	10 '	· 8	Comments:		210101	1 . 10
10 -1	•				f 1.8•10-4 m2/s was ich shows the best d	
//	0.3				ange for the boreho	
√°	-				5.0•10-4 m ² /s. The fl	
\ \\ \'\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\		1	s estimated to be 6	3.0°10-3 m²/s to .	7.0 10 TIII / 5. 1 IIC 1	
\ \frac{1}{\sqrt{1}}					e background effect	
10 ° 10 10 10 10 10 10 10 10 10 10 10 10 10	10 ² 10 ³ 10 ⁴	d h	during the test is 2	. According to th		s no freshwater

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]		Ok	CRWI
Area:	Laxemar	Test no:		Ot.	servation hole 1
Borehole ID:	HI Y11 1	Test start:			051112 18:54
borenole ib.	(KLX07A 193.00-313.00 pumped)	rest start.			031112 10.54
Test section from - to (m):	17.00-70.00	Responsible for			Stephan Rohs
Section diameter, 2·r _w (m):		test execution: Responsible for		Crieti	an Enachescu
Section diameter, 2.1 _W (III).		test evaluation:		Olisti	an Lhachesco
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
2380	KLX07A 64	$p_0$ (kPa) =			
2370	• HLX11_1	p _i (kPa ) =			
2360	62	$p_p(kPa) =$		p _F (kPa ) =	
₩ 2350 -	I (kPa)	$Q_p (m^3/s) =$	6.07E-04		
7340 - K 2340 - K 234	ion we	tp (s) =	244343	t _F (s) =	44930
9 2330 H	58 8.5 E	S el S [*] (-)=		S el S [*] (-)=	
8 8 7 320 -	[Gal] liew up to Associate the second of the	EC _w (mS/m)=			
2310	Peg	Temp _w (gr C)=			
2300	-54	Derivative fact.=	0.02	Derivative fact.=	0.0
2290 12.11.2006 13.11.2006 14.11.2005 15.11.2006 16.11.21 T	52 005 17.11.2006 18.11.2005 19.11.2006 20.11.2006				
		Results		Results	
		$Q/s (m^2/s) =$			
og-Log plot incl. derivates- f	low period	$T_{\rm M} ({\rm m}^2/{\rm s}) =$			
Etapsed time [h]	10.2	Flow regime:	transient	Flow regime:	transient
10 1		$dt_1 (min) =$		$dt_1 (min) =$	343
	30	$dt_2 (min) =$		$dt_2 (min) =$	4512
		$T (m^2/s) =$		$T (m^2/s) =$	7.9E-0
10 0	10'	S (-) =	1.1E-04		1.3E-0
	<i>i</i>	$K_s (m/s) =$		$K_s (m/s) =$	4.2E-0
A State of S		$S_s(1/m) =$		$S_s(1/m) =$	6.6E-0
	(kga), (,0,4-d) tro	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	NA
0-1	*	$C_D(-) =$	NA	$C_D(-) =$	
1 / ./					NA
/:/	0.3	ξ (-) =	NA	ξ (-) =	NA
./;/	0.3			ξ (-) =	
·/.		$T_{GRF}(m^2/s) =$		$\xi$ (-) = $T_{GRF}(m^2/s) =$	
10 10 10 10 10 10 10 10 10 10 10 10 10 1	• •	$T_{GRF}(m^2/s) =$		$\xi$ (-) = $T_{GRF}(m^2/s) =$	
tD/rD2	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$T_{GRF}(m^2/s) = S_{GRF}(-) =$	NA	$\xi (-) = T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF} (-) =$	
Log-Log plot incl. derivatives-	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = $	NA	$\xi$ (-) = $T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-) = S_$	
tD/rD2	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ Selected represe	ntative param	$\xi$ (-) = $T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-) = S_$	NA
Log-Log plot incl. derivatives	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ <b>Selected represe</b> $dt_1 \text{ (min)} =$	ntative param	$\xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-) = S_{GR$	NA NA
Log-Log plot incl. derivatives	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ $Selected represe$ $dt_1 (min) =$ $dt_2 (min) =$	ntative param 1212 4022	$\xi(-) = T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = S_{GRF}(-) = S_{GR$	NA NA NA
Log-Log plot incl. derivatives-	- recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ <b>Selected represe</b> $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$	ntative param 1212 4022 1.6E-04	$\xi (-) = \frac{T_{GRF}(m^2/s) =}{S_{GRF}(-) =} = \frac{D_{GRF}(-) =}{eters}$ $C (m^3/Pa) = C_D (-) =$ $\xi (-) =$	NA NA NA
Log-Log plot incl. derivatives-	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ $Selected represe$ $dt_1 (min) =$ $dt_2 (min) =$ $T_T (m^2/s) =$ $S (-) =$	ntative param 1212 4022 1.6E-04 1.1E-04	$\xi (-) = \frac{T_{GRF}(m^2/s) =}{S_{GRF}(-) =} = \frac{D_{GRF}(-) =}{eters}$ $C (m^3/Pa) = C_D (-) =$ $\xi (-) =$	NA NA NA
Log-Log plot incl. derivatives  Euppard tree	recovery period	$T_{GRF}(m^2/s) = S_{GRF}(-) = S_{GRF}(-) = Selected represe dt_1 (min) = dt_2 (min) = T_T (m^2/s) = S (-) = K_s (m/s) =$	ntative param 1212 4022 1.6E-04 1.1E-04 3.0E-06	$\xi (-) = \frac{T_{GRF}(m^2/s) =}{S_{GRF}(-) =} = \frac{D_{GRF}(-) =}{eters}$ $C (m^3/Pa) = C_D (-) =$ $\xi (-) =$	NA NA NA
Log-Log plot incl. derivatives-	recovery period	$T_{GRF}(m^2/s) = S_{GRF}(-) = D_{GRF}(-) = Selected represent to the following state of t$	ntative param 1212 4022 1.6E-04 1.1E-04 3.0E-06 2.0E-06	$\xi (-) = \frac{T_{GRF}(m^2/s) =}{S_{GRF}(-) =} = \frac{D_{GRF}(-) =}{eters}$ $C (m^3/Pa) = C_D (-) =$ $\xi (-) =$	NA NA NA
Log-Log plot incl. derivatives  Euppard tree	recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ <b>Selected represe</b> $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S \cdot (-) =$ $K_s \text{ (m/s)} =$ $S_s \cdot (1/m) =$ <b>Comments:</b> The recommended the analysis of the $C$	ntative param 1212 4022 1.6E-04 1.1E-04 3.0E-06 2.0E-06	$\xi (-) = \frac{T_{GRF}(m^2/s)}{S_{GRF}(-)} = \frac{S_{GRF}(-)}{S_{GRF}(-)} = \frac{S_{GRF}(-)}{S_$	NA NA NA derived from ta and
Log-Log plot incl. derivatives-	recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ <b>Selected represe</b> $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$ <b>Comments:</b> The recommended the analysis of the Coderivative quality. The recommended of the content	ntative param 1212 4022 1.6E-04 1.1E-04 3.0E-06 2.0E-06 cransmissivity of CRw phase, which confidence is	$\xi$ (-) = $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ <b>leters.</b> $C (m^3/Pa) =$ $C_D (-) =$ $\xi$ (-) = $\xi$ (-) =	NA NA NA derived from ta and le transmissivity
Log-Log plot incl. derivatives-	recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ <b>Selected represe</b> $dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$ $T_T \text{ (m}^2/s) =$ $S (-) =$ $K_s \text{ (m/s)} =$ $S_s (1/m) =$ <b>Comments:</b> The recommended the analysis of the Coderivative quality. This estimated to be 9.	ntative param 1212 4022 1.6E-04 1.1E-04 3.0E-06 2.0E-06  cransmissivity of CRw phase, which confidence ro 0•10-5 m²/s to 4	$\xi (-) = \frac{T_{GRF}(m^2/s)}{S_{GRF}(-)} = \frac{S_{GRF}(-)}{S_{GRF}(-)} = \frac{S_{GRF}(-)}{S_$	NA NA NA derived from ta and le transmissivit; ow dimension
Log-Log plot incl. derivatives-	recovery period	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ $S_{elected represe}$ $dt_1 (min) =$ $dt_2 (min) =$ $T_T (m^2/s) =$ $S (-) =$ $K_s (m/s) =$ $S_s (1/m) =$	ntative param 1212 4022 1.6E-04 1.1E-04 3.0E-06 2.0E-06 ransmissivity of CRw phase, which confidence r 0•10-5 m²/s to 4 The measured fi	$\xi$ (-) = $T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$ $D_{GRF}(-) =$ <b>leters.</b> $C (m^3/Pa) =$ $C_D (-) =$ $\xi$ (-) = $\xi$ (-) =	NA NA NA NA derived from ta and le transmissivity ow dimension derived from

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]		Ol	CRW
Area:	Laxemar	Test no:		<u> </u>	servation hole
Borehole ID:	⊔I V11 2	Test start:			051112 18:54
borenole ID.	(KLX07A 193.00-313.00 pumped)	rest start.			031112 16.34
Test section from - to (m):		Responsible for			Stephan Rohs
0 " " ( )		test execution:		0:1	
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Cristi	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
2380	— KLX07A	p ₀ (kPa) =			
2370 -	• HLX11.2	p _i (kPa ) =			
2300 .	- 61	$p_p(kPa) =$		p _F (kPa ) =	
च ₂₂₀₀ .	KP al	$Q_p (m^3/s) =$	6.07E-04		
A I I I	99 8 8	tp (s) =	244343	t _F (s) =	44930′
8 220 - 1 220 - 1 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 220 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1 2 200 - 1	S S S T S S S S S S S S S S S S S S S S	S el S [*] (-)=		S el S [*] (-)=	
e in section (1)	57 S S O O O	EC _w (mS/m)=			
£ 2320 -	28 28 1	Temp _w (gr C)=			
2310	- 54	Derivative fact.=	0.02	Derivative fact.=	
2300	53				
2290 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.201	52 5 17.11.2005 18.11.2005 19.11.2005 20.11.2005				
ті	me	Results	I	Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} ({\rm m}^2/{\rm s}) =$			
Elapsed time (	1	Flow regime:	transient	Flow regime:	transient
10 1	.10,2	$dt_1 (min) =$		dt ₁ (min) =	1842
		$dt_2 (min) =$		$dt_2 (min) =$	442
	30	$T (m^2/s) =$		$T (m^2/s) =$	5.6E-0
10 %	10 1	S (-) =	1.6E-04		1.2E-0
Long.		$K_s (m/s) =$		$K_s (m/s) = S_s (1/m) =$	5.6E-0
		$S_s(1/m) =$	1.6E-03		NA
	0 - 00 - 00 - 00 - 00 - 00 - 00 - 00 -	$C (m^3/Pa) = C_{-}(-1) = 0$	NA	$C (m^3/Pa) = C_D (-) =$	NA
10 1	110 -	$C_D(-) =$	NA		NA
	0.3	ξ(-) =	INA	ξ (-) =	INA
• • • / /	į	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 · 10 · 10 · 10 · 10 · 10 · 10 · 10 ·	10 1 10 2 10 10 10 10 10 10 10 10 10 10 10 10 10	$S_{GRF}(m/s) =$ $S_{GRF}(-) =$		$S_{GRF}(m/s) =$ $S_{GRF}(-) =$	
UND.		$D_{GRF}(\cdot) =$		$D_{GRF}(\cdot) =$	<del> </del>
Log-Log plot incl. derivatives-	recovery period	Selected represe	I Intative paran		
5 01		$dt_1$ (min) =	1184		NA
Elapsed time	[h] 2	$dt_2 \text{ (min)} =$		$C_D(-) =$	NA
10 `.	10 ²	$T_T (m^2/s) =$	1.1E-04		NA
		S (-) =	1.6E-04	. ,	
	30	$K_s$ (m/s) =	1.1E-05		
10 0		$S_s (1/m) =$	1.6E-05		
	10	Comments:	1		1
5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3350	The recommended :	transmissivity of	f 1.1•10-4 m2/s was	derived from
adad	[3 4]	The recommended			
Bed of the state o	3 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	the analysis of the C			
	a 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	the analysis of the Oderivative quality.	The confidence r	ange for the borehol	le transmissivit
		the analysis of the Oderivative quality. This estimated to be 9.	The confidence r .0•10-5 m ² /s to 3	range for the borehold 3.0•10-4 m ² /s. The fl	le transmissivity ow dimension
	10° 10° 10° 10°	the analysis of the Oderivative quality. This estimated to be 9 during the test is 2.	The confidence r .0•10-5 m²/s to 3 The measured fi	ange for the borehol	le transmissivity ow dimension derived from

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxema	r Test no:		Ol	oservation hole 1
Borehole ID:	HLX21_ (KLX07A 193.00-313.00 pumped	1 Test start:			051112 18:54
Test section from - to (m):	81.00-150.0	Responsible for			Stephan Rohs
Section diameter, 2-r _w (m):		test execution: Responsible for		Crist	ian Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
2390		Indata		Indata	
	KLX07A • HLX21_1	$p_0$ (kPa) =			
2370	- 52.5	p _i (kPa ) =			
2360	- 52 <b>6</b>	$p_p(kPa) =$		p _F (kPa ) =	
- 2980		$Q_p (m^3/s) =$	6.07E-04		
F 2200 - C 2	si.5 ugi	tp (s) =	244343	$t_F$ (s) =	449307
₽ 2300. \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	51.5 In an Illustration well [Fe all	S el S [*] (-)=		S el S [*] (-)=	
2330 ·	- SSS UF 0	$EC_w (mS/m)=$			
2310	50.5	Temp _w (gr C)=			
2300	- 50	Derivative fact.=	0.09	Derivative fact.=	0.09
2290 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005	17.11.2005 18.11.2005 19.11.2005 20.11.2005				
Tin	ne	Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$			
	·	Flow regime:	transient	Flow regime:	transient
Elapsed time [h]	234	$dt_1 (min) =$	NA	$dt_1 \text{ (min)} =$	NA
10 1		$dt_2 \text{ (min)} =$	NA	$dt_2 \text{ (min)} =$	NA
1	10 1	$T (m^2/s) =$	3.5E-04	$T (m^2/s) =$	7.0E-04
		S (-) =	1.7E-04		2.0E-04
10 0	3	$K_s (m/s) =$		$K_s$ (m/s) =	1.0E-05
A JAN		$S_s(1/m) =$		S _s (1/m) =	2.9E-06
a a	° (491).0043)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
	dd) 70dd	$C_D(-) =$	NA	$C_D(-) =$	NA
10-1	0.3	ξ (-) =	NA	ξ(-) =	NA
.: //.	10 -1	5 ( )		5 ( )	
///		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 -1 10 ° IDHD2	10 ¹ 10 ² 10 ³	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran	neters.	
		$dt_1$ (min) =	NA	$C (m^3/Pa) =$	NA
Elapsed time (h	J	$dt_2$ (min) =	NA	$C_D(-) =$	NA
10 1	10 1	$T_T (m^2/s) =$	3.5E-04		NA
	;	S (-) =	1.7E-04		
A A	3	$K_s$ (m/s) =	5.1E-06		
	10 °	$S_s (1/m) =$	2.5E-06		
a a	- The	Comments:	=		
	623 (0041) 004		transmissivity of	f 3.5•10-4 m2/s was	derived from
10 -1	10 ·1	the analysis of the O	CRw phase, which	ch shows the best da	ta and
.// :				range for the boreho	
• / / •	0.03			3.0•10-4 m ² /s (this raved form the CRwr	
10 -1 10 0	10 ¹ 10 ² 10 ³	flow dimension dur			
EJ/ND2		effects no freshwate	er head could be		
		interpolation in the	Horner plot.		

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]		Ok	CRw oservation hole
Area:	Laxemar	Test no:		<u>Oi</u>	oservation noi
Borehole ID:	HLX21 2	Test start:			051112 18:54
201011010121	(KLX07A 193.00-313.00 pumped)				
Test section from - to (m):	9.10-80.00	Responsible for			Stephan Roh
Section diameter, 2·r _w (m):		test execution: Responsible for		Crist	ian Enachesc
• •		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
2380	KLX07A 52	p ₀ (kPa) =			
2370	• HLX21_2	p _i (kPa ) =			
2360		$p_p(kPa) =$		p _F (kPa ) =	
<u>₹</u> 220	KP aj 15	$Q_p (m^3/s) =$	6.07E-04		
<u>x.</u> = 2240 .	50.5 6	tp (s) =	244343		44930
168 2200 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 1	50.5 to 50.5 t	S el S* (-)=		S el S [*] (-)=	
	o o an	EC _w (mS/m)=			
ž 2220	**************************************	Temp _w (gr C)=	0.00	5	0.1
2310	<del>1</del> 49	Derivative fact.=	0.09	Derivative fact.=	0.1
2300					
12:11.2005 13:11:2005 14:11:2005 15:11:2005 16:11:2005  Time	17.11.2005 18.11.2005 19.11.2006 20.11.2006	Results		Results	
Time		Q/s $(m^2/s)=$		Nesuits	1
.og-Log plot incl. derivates- flo	w period	$T_{M} (m^{2}/s) =$			
tog-Log plot mei. denvates- no	w period	Flow regime:	transient	Flow regime:	transient
Elapsed time [h]	10,2	$dt_1 (min) =$	NA	$dt_1 \text{ (min)} =$	NA
		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	NA
	10 '	$T (m^2/s) =$		$T (m^2/s) =$	8.9E-0
		S (-) =	1.5E-04		1.7E-0
10°	[3	$K_s (m/s) =$		$K_s (m/s) =$	1.3E-0
	10 0	$S_s (1/m) =$		$S_s(1/m) =$	2.3E-0
	por RPal	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
	9 9 03	$C_D(-) =$	NA	$C_D(-) =$	NA
10-1		ξ(-) =	NA	ξ(-) =	NA
/./.	10 -1			3 ( )	
//		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 -1 10 0	10 ¹ 10 ² 10 ³	$S_{GRF}(\cdot) =$		$S_{GRF}(-) =$	
tD/D2		D _{GRF} (-) =		D _{GRF} (-) =	
og-Log plot incl. derivatives- r	ecovery period	Selected represe	ntative paran	neters.	
Elapsed time (h)		dt ₁ (min) =	NA	C (m ³ /Pa) =	NA
10 ¹ 10 10 10 10 10 10 10 10 10 10 10 10 10	10,2	$dt_2$ (min) =	NA	C _D (-) =	NA
	•	$T_T (m^2/s) =$	3.9E-04	ξ (-) =	NA
	3	S (-) =	1.5E-04		
A		$K_s$ (m/s) =	5.5E-06		
	10 °	$S_s (1/m) =$	2.1E-06		
	0.3	Comments:			
/.	po. (p-p0)			f 3.9•10-4 m2/s was	
10-1	10 1			ch shows the best da	
•//				range for the boreho 3.0•10-4 m ² /s (this ra	
· // :	0.03			ved form the CRwr	
10 4	2	flow dimension dur	ing the test is 2.	According to the ba	ckground
10 ⁻¹ 10 ⁰ tD/rD2	10 ¹ 10 ² 10 ³			derived from straig	ht line
		interpolation in the	Horner plot.		

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CRwr
Area:	Laxemar	Test no:		Ot	servation hole 1
Borehole ID:	HLX22_1 (KLX07A 193.00-313.00 pumped)	Test start:			051112 18:54
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2·r _w (m):	diameter, 2·r _w (m): Responsible for test evaluation:			Crist	an Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
2380	KLX07A 52	p ₀ (kPa) =			
2370	► HLX22_1	p _i (kPa ) =			
2360		$p_p(kPa) =$		p _F (kPa ) =	
ू ₂₃₅₀ -	" [KPa]	$Q_p (m^3/s) =$	6.07E-04		
======================================	50.5 🗟	tp (s) =	244343		449307
F 2000 100	50.5 erv atton well [FP3]	S el S* (-)=		S el S [*] (-)=	<u> </u>
\$ 2320 VW \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	- 49.5 -	EC _w (mS/m)=			
2310	149 <b>P.e.</b>	Temp _w (gr C)= Derivative fact.=	0.07	Derivative fact.=	0.2
2300	48.5	Derivative fact.=	0.07	Derivative fact.=	0.2
2290 12:11:2005 13:11:2005 14:11:2005 15:11:2006 16:11:20	05 17.11.2005 18.11.2005 19.11.2005 20.11.2005				
	ime	Results		Results	<u> </u>
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s) =$			
		Flow regime:	transient	Flow regime:	transient
Elapsed time 10 10 10 10 10 10 10 10 10 10 10 10 10 1	h] 10, 3 10, 4 FlowDim Version 2.14b	$dt_1$ (min) =	NA	$dt_1$ (min) =	NA
10 SKB Laxemar / KLX07A 193.00-313.00 HLX22_1 / CRw cbs	(c) Golder Associates 10 1	$dt_2$ (min) =	NA	$dt_2$ (min) =	NA
		$T (m^2/s) =$	7.0E-04	$T (m^2/s) =$	9.1E-04
M		S (-) =	7.4E-05	, ,	1.6E-04
10 °	10 °	$K_s (m/s) =$		$K_s (m/s) =$	1.2E-0
		$S_s (1/m) =$		$S_s(1/m) =$	2.0E-06
	0.3	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1	10 -1	$C_D(-) =$	NA	$C_D(-) =$	NA
//		ξ (-) =	NA	ξ (-) =	NA
FLOW MODEL : Homogeneous BOUNDARY CONDITIONS: Constant rate WELL TYPE : Observation SUPERPOSITION TYPE: No superposition	T= 7.04E-04 m2/s S= 7.38E-05 . 0.03	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
PLOT TYPE : Log-log	n= 2.00E+00 ·	$S_{GRF}(m/s) =$ $S_{GRF}(-) =$		$S_{GRF}(m/s) =$ $S_{GRF}(-) =$	
1DWE	2	$D_{GRF}(\cdot) =$		$D_{GRF}(\cdot) =$	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran		
<del></del>		$dt_1$ (min) =	NA	C (m ³ /Pa) =	NA
Elapsed time (	1) 10, 10, 2	dt ₂ (min) =	NA	$C_D(-) =$	NA
10 1 SKB Laxemar / KLX07A 193.00-313.00 HLX22_1 / CRwr obs	Flow Dim Version 2.14b (c) Golder Associates	$T_T (m^2/s) =$	9.1E-04		NA
	3	S (-) =	1.6E-04		
•	ALÉ .	$K_s$ (m/s) =	1.2E-05		
10	10 °	$S_s(1/m) =$	2.0E-06		
FLOW MODEL : Homogeneous BOUNDARY CONDITIONS: Constant rate WELL TYPE : Observation SUPERPOSITION TYPE: Build-up TC	0.3 (84)	Comments:			
SUPERPOSITION TYPE: Build-up TC PLOTTYPE : Log-log				9.1•10-4 m2/s was	
10 -1	10 -1	the analysis of the C derivative quality. T		ange for the boreho	
/-/	0.03	is estimated to be 3	.0•10-4 m ² /s to 2	2.0•10-3 m ² /s. The fl	ow dimension
	T= 9.12E-04 m2/s S= 1.55E-04 m2/s D= 1.20E+04 - 1.20E+00 - 1.20E	during the test is 2.			
10 °1 10 °0	10 ¹ 10 ² 10 ³	head could be deriv plot.	ed from straight	ine interpolation ir	the Horner
		F.50.			

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				CRwi
Area:	Laxemar	Test no:		Ot	servation hole 1
D 1 1 1D					051110 10 51
Borehole ID:	HLX22_2 (KLX07A 193.00-313.00 pumped)	Test start:			051112 18:54
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
2380	38.6	p ₀ (kPa) =			
2370 -	<u>◆ HLX22_2</u> 38.4	p _i (kPa ) =			
2360.	+38.2	$p_p(kPa) =$		p _F (kPa ) =	
E 2350	**************************************	$Q_p (m^3/s) =$	6.07E-04		
=	n well	tp (s) =	244343	$t_F$ (s) =	449307
2000 - Control of Cont	23.7.4 Source Observation well (PP = 23.7.4 Source Observation well (PP = 23.7.4 Source Observation ob	S el S [*] (-)=		S el S [*] (-)=	
2330	37.6 800	EC _w (mS/m)=		` '	
ğ 2320 V M	37.4	Temp _w (gr C)=			
2310	37.2	Derivative fact.=	0.07	Derivative fact.=	0.13
2300	- 37				
2290	38.8				
12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.200 <b>Ti</b>	05 17.11.2005 18.11.2005 19.11.2005 20.11.2005 ime	Results	•	Results	•
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- flo	ow period	$T_M (m^2/s) =$			
		Flow regime:	transient	Flow regime:	transient
Elapsed time (h)	10,3	$dt_1$ (min) =	NA	$dt_1$ (min) =	NA
10		$dt_2$ (min) =	NA	$dt_2$ (min) =	NA
<b>,</b>	3	$T (m^2/s) =$	1.2E-03	$T (m^2/s) =$	3.7E-03
المه مث		S (-) =	1.7E-04	S (-) =	2.3E-04
10°	10 °	$K_s$ (m/s) =		$K_s$ (m/s) =	4.9E-0
	0.3	$S_s (1/m) =$	2.2E-06	$S_s (1/m) =$	3.1E-06
	• • • • • • • • • • • • • • • • • • •	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1	10 -1 0 d	$C_D(-) =$	NA	$C_D(-) =$	NA
		ξ (-) =	NA	ξ (-) =	NA
(/	0.03				
	10 -2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 0 10 1 1D/D2	10 ² 10 ³ 10 ⁴	S _{GRF} (-) =		S _{GRF} (-) =	
		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe			I
Elapsed time (h)		$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA
10 10 10 10 10 10 10 10 10 10 10 10 10 1		$dt_2 (min) =$	NA	C _D (-) =	NA
	°	$T_T (m^2/s) =$	1.2E-03		NA
		S (-) =	1.7E-04		
10.3	0.3	$K_s (m/s) =$	1.6E-05		
		$S_s(1/m) =$	2.2E-06		
	10 -1	Comments:		S 1 2 10 2 2 2 1	1 1 10
	Repl 104-47 rot 4			f 1.2•10-3 m2/s was ch shows the best da	
10 1	0.03 &			range for the boreho	
//	10 -2	is estimated to be 7	.0•10-4 m ² /s to 4	$4.0 \cdot 10 - 3 \text{ m}^2/\text{s}$ . The fl	ow dimension
•		during the test is 2.			
1/	†	head could be deriv	ed from straight	Ine interpolation in	the Horner
10 0 10 1	10 2 10 3 10 4 0.003	plot.	cu mom straight	inc incipolation ii	i die Homei

	Test Sumi	nary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxema	Test no:		Ot	oservation hole 1
Borehole ID:	HLX23_1 (KLX07A 193.00-313.00 pumped)	Test start:			051112 18:54
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2·r _w (m):		Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
zmodi piot q dila p		Indata		Indata	
		p ₀ (kPa) =			
2380	KLX07A	p _i (kPa ) =			
2370 -	98.4	$p_p(kPa) =$		p _F (kPa ) =	
2300	98.3	0 (3/-)	6.07E-04		
[e] 2350	98.2	tp(s) =	244343	t _F (s) =	449307
■ 9 x 2340 ·	98.1 9	S el S [*] (-)=		S el S [*] (-)=	
292 2250 - 4 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 2250 - 225		$EC_w (mS/m) =$	1	( /	
es sur	1 97.9 Page 1	Temp _w (gr C)=			
£ 22.0	+ 97.8 <b>2.</b>	Derivative fact.=	0.19	Derivative fact.=	0.21
2310	97.7				
2300 -	97.6				
2290 12.11.2005 13.11.2005 14.11.2005 15.11.2006 18.11.21	97.5	Results	<u> </u>	Results	
1	ime	Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$			
Elapsed time	[h]	Flow regime:	transient	Flow regime:	transient
10 1	3	$dt_1$ (min) =	NA	$dt_1$ (min) =	NA
		$dt_2$ (min) =	NA	$dt_2$ (min) =	NA
	. AM	$T (m^2/s) =$	2.8E-03	$T (m^2/s) =$	3.1E-03
10 %		S (-) =	1.6E-04	S (-) =	1.6E-04
	0.3	$K_s (m/s) =$		$K_s$ (m/s) =	3.1E-05
logd'gd	10 - 0	$S_s (1/m) =$		$S_s(1/m) =$	1.6E-06
	), (C (+ 4) ()	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1	0.03	$C_D(-) =$	NA	$C_D(-) =$	NA
	•:	ξ (-) =	NA	ξ (-) =	NA
//	10 -2	_			
		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻² 10 ⁻¹ 10 tD/rE	10 ¹ 10 ² 10 ³	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
Law Law wlatiwal dawinatina		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	100000000000000000000000000000000000000		INIA
		$dt_1 (min) =$	NA NA	$C (m^3/Pa) =$	NA NA
10 1 10 1 10 0 Elapsed time	(b) 10 1 10 3 3	$dt_2 (min) =$	2.8E-03	$C_D(-) =$	NA NA
	<u>:</u>	$T_{T} (m^{2}/s) = S (-) =$	2.6E-03 1.6E-04	ξ(-) =	INC
	10°	$K_s (m/s) =$	2.8E-05		
10 01	0.3	$\frac{R_s (11/s)}{S_s (1/m)} =$	1.6E-06		
	u3	Comments:	1.52 00		
, in the state of	10 ⁻¹ Rd		transmissivity of	f 2.8•10-3 m2/s was	derived from
	10 ¹ (total) you	the analysis of the C	CRw phase, which	ch shows the best da	ta and
10-1	0.03	derivative quality.	The confidence r	ange for the boreho	le transmissivity
	10 -2	is estimated to be 8			
//•	•	during the test is 2. head could be derived		e background effect line interpolation in	
10 -1 10 ° 1D/rC	10 1 10 2 10 3	plot.			
. Lori					

	Test Sumn	nary Sheet			
Project: Oskarshamn site investigation				01	CRw
Area:	Laxem			O.	servation hole
Borehole ID:	⊔I <b>∀</b> 22_2	Test start:			051112 18:54
Borenole ID.	(KLX07A 193.00-313.00 pumped)				031112 16.34
Test section from - to (m):	6.10-60.00	Responsible for			Stephan Roh
Section diameter, 2-r _w (m):		test execution: Responsible for		Crist	ian Enachesc
occitori diameter, 2-1 _W (m).		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
2380		$p_0$ (kPa) =			
2370	\$ 28.4	p _i (kPa ) =			
2360	96.2	$p_p(kPa) =$		p _F (kPa ) =	
<b>©</b> 2350 -	°	$Q_p (m^3/s)=$	6.07E-04		
=	tion w	tp (s) =	244343		44930
P 2200 - CITION D 2340 - CITIO	Fressure Observation well (R.P.)	S el S* (-)=		S el S [*] (-)=	
0.00 S S S S S S S S S S S S S S S S S S	8.8.8 sure 01	EC _w (mS/m)=			<u> </u>
	+ 95.4 SS 95.4	Temp _w (gr C)=			<u> </u>
2310		Derivative fact.=	0.00	Derivative fact.=	0.0
2300	95.2				
2290 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005	95 17.11.2005 18.11.2005 19.11.2005 20.11.2005	Results		Results	
Tim		Q/s $(m^2/s)=$		resuits	
.og-Log plot incl. derivates- flo	w period	$T_M (m^2/s) =$			
	poneu	Flow regime:	transient	Flow regime:	transient
Elapsed time [h]	92	$dt_1 \text{ (min)} =$	NA	$dt_1 \text{ (min)} =$	NA
10 1	,	$dt_2 (min) =$	NA	$dt_2 \text{ (min)} =$	NA
كالمبراثم	10 °	$T (m^2/s) =$	2.9E-03	$T (m^2/s) =$	2.7E-0
		S (-) =	1.3E-04	` '	2.1E-0
10°	0.3	$K_s (m/s) =$		$K_s (m/s) =$	5.0E-0
	@	$S_s (1/m) =$		S _s (1/m) =	3.8E-0
A Part of the second of the se	고 고 2	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10-1	0.03	$C_D(-) =$	NA	$C_D(-) =$	NA
		ξ(-) =	NA	ξ(-) =	NA
	10 -2				
<u>/</u>		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ° 10 ¹ tD/rD2	10 ² 10 ³ 10 ⁴	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
og-Log plot incl. derivatives- r	ecovery period	Selected represe			
Elapsed time [h]		$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA
10 2	30	$dt_2 (min) =$	NA	$C_D(-) =$	NA
	10 '	$T_T (m^2/s) =$	2.9E-03		NA
	10	S (-) =	1.3E-04		
10 1	3	$K_s (m/s) = S_s (1/m) =$	5.3E-05 2.5E-06		<del>                                     </del>
		S _s (1/m) = Comments:	∠.3E-Ub		
	0 co ( [e/Pa]		transmissivity of	f 2.9•10-3 m2/s was	derived from
10.0	\$-500.¢			r zone), which show	
es is in the same of the same	0.3	and derivative qual	ity. The confider	nce range for the bo	rehole
· · · · · · · · · · · · · · · · · · ·	10 -1	transmissivity is estimated to be 7.0•10-4 m ² /s to 5.0•10-3 m ² /s (this range encompasses the outer zone transmissivity derived from the C			
///				ransmissivity derive the test is 2. Accord	
10 ° 10 1 1DHD2	10 ² 10 ³ 10 ⁴			ead could be derived	
		line interpolation in			6

	Test Sum	mary Sheet					
Project:			Test type:[1]				
Area:	Laxema	Test no:	Observation hole				
Borehole ID:	le ID: HLX24_1		Tost start:				
Boronolo IB.	(KLX07A 193.00-313.00 pumped	)			051112 18:54		
Test section from - to (m): 41.00-175.2		Responsible for			Stephan Rohs		
Section diameter, 2·r _w (m):		test execution: Responsible for		Crist	ian Enachescu		
Section diameter, 2-1 _W (III).		test evaluation:		Olist	an Enacheso		
Linear plot Q and p		Flow period		Recovery period			
		Indata		Indata			
2380		$p_0$ (kPa) =					
2370 -	◆ HLX24_1 98.5	p _i (kPa ) =					
2360	98.4	$p_p(kPa) =$		p _F (kPa ) =			
₹ 2350	98.3 (G X) 98.2 ×	$Q_p (m^3/s) =$	6.07E-04				
<u>x</u> = 0	98.2 <b>a</b> s	tp (s) =	244343	$t_F$ (s) =	44930		
2300 8 2300 9 2300 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2200 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 2000 9 20	+ SU - SU	S el S [*] (-)=		S el S [*] (-)=			
2330 2530	- 88 - F - B - B - B - B - B - B - B - B - B	EC _w (mS/m)=					
£ 2320	- 97.9 <b>F.</b>	Temp _w (gr C)=					
2310	97.8	Derivative fact.=	0.1	Derivative fact.=	0.1		
2300 -	97.7						
2290 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005	17.11.2005 18.11.2005 19.11.2005 20.11.2005						
Time		Results	Results				
		Q/s $(m^2/s)=$					
og-Log plot incl. derivates- flov	v period	$T_{\rm M} (m^2/s) =$					
Elapsed time [h]	an 3 an 4 an 5	Flow regime:	transient	Flow regime:	transient		
0 '		dt ₁ (min) =	NA	$dt_1 (min) =$	NA		
	3	$dt_2 \text{ (min)} =$	NA	$dt_2 (min) =$	NA		
		$T (m^2/s) =$		$T (m^2/s) =$	2.1E-0		
Mi	10°	S (-) =	5.4E-04		1.1E-0		
		$K_s (m/s) =$		$K_s (m/s) =$	1.5E-0		
	0.3	$S_s (1/m) =$		$S_s(1/m) =$	8.0E-0		
<u>; : // ; : : : : : : : : : : : : : : : :</u>	10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -1 -10 -10	$C (m^3/Pa) =$	NA NA	$C (m^3/Pa) =$	NA		
· /·/	ja d	$C_D(-) =$		$C_D(-) =$	NA		
· ;	0.03	ξ(-) =	NA	ξ(-) =	NA		
		T (2)		T (2)			
<b>\</b>	10 -2	$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$		$T_{GRF}(m^2/s) =$ $S_{GRF}(-) =$			
10 ° 10 ° ©(102	10 ² 10 ³ 10 ⁴	$S_{GRF}(-) = D_{GRF}(-) =$		$S_{GRF}(-) = D_{GRF}(-) =$			
Log-Log plot incl. derivatives- recovery period		Selected represe	ntative naran				
Log-Log plot incl. derivatives- re	, oo very period	dt ₁ (min) =	NA		NA		
10 10 10 10 10 10 10 10 10 10 10 10 10 1	·	$dt_1 \text{ (min)} = $ $dt_2 \text{ (min)} = $	NA	$C (m^3/Pa) = C_D (-) =$	NA		
	3	3	1.6E-03		NA		
	- ₁₀ °	$T_{T} (m^2/s) = S (-) =$	5.4E-04		. */ `		
- Santh		$K_s (m/s) =$	1.2E-05		<del>                                     </del>		
10 °	0.3	$S_s(1/m) =$	4.0E-06		<del>                                     </del>		
	3	Comments:	4.0€ 00		<u> </u>		
	10 -1		transmissivity of	f 1.6•10-3 m2/s was	derived from		
10-1	9			ch shows the best da			
:	0.03	derivative quality.	The confidence r	ange for the boreho	le transmissivit		
/ / • • • • • • • • • • • • • • • • • •		is estimated to be 7					
· · · · · · · · · · · · · · · · · · ·	10 -2	during the test is 2.		e background effect line interpolation in			
10 ° 10 ¹	10 ² 10 ³ 10 ⁴	plot.	ca nom snaight	ime interpolation if	i die 11011lel		
		1					

	Test Sumr	nary Sheet				
roject: Oskarshamn site investigation		n <u>Test type:[1]</u>				
Area:	Laxemar	Test no:		- Ot	servation hole	
Davahala ID:	KI VOO C	Task skawk			054440 40-5	
Borehole ID:	(KLX07A 193.00-313.00 pumped)	Test start:			051112 18:54	
Test section from - to (m):	348.00-451.00	Responsible for			Stephan Rohs	
Section diameter, 2·r _w (m):		test execution: Responsible for		Criet	ian Enachesc	
Section diameter, 2·1 _w (III).		test evaluation:		Clist	ian Enachesci	
Linear plot Q and p		Flow period		Recovery period		
		Indata		Indata		
2380	57.5	$p_0$ (kPa) =				
2370 -	KLX07A • KLX02_6	p _i (kPa ) =				
A_	-57	$p_p(kPa) =$		p _F (kPa ) =		
2360	- 56.5 R	$Q_p (m^3/s) =$	6.07E-04			
요 2350 - 보	well []	tp (s) =	244343		44930	
E 2200 - 19 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2300 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000 - 10 2000	- 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565 - 565	S el S* (-)=		S el S [*] (-)=		
4 2330 -	55.5 Q a	EC _w (mS/m)=				
£ 2320 ·	55 A F	Temp _w (gr C)=	0.10	5	0.1	
2310		Derivative fact.=	0.10	Derivative fact.=	0.1	
2300	- 54.5					
2290 12.11.2005 13.11.2005 14.11.2006 15.11.2005 16.11.2006	17.11.2005 18.11.2005 19.11.2005 20.11.2005	Results		Results		
Tir	10	Q/s $(m^2/s)=$		rtocuito		
og-Log plot incl. derivates- flo	ow period	$T_{\rm M} (m^2/s) =$				
Elapsed time		Flow regime:	transient	Flow regime:	transient	
10 1	. 10,1	$dt_1 \text{ (min)} =$	NA	$dt_1 (min) =$	NA	
		$dt_2 \text{ (min)} =$	NA	$dt_2 \text{ (min)} =$	NA	
	· 10.4	$T (m^2/s) =$	1.0E-03	$T (m^2/s) =$	1.3E-0	
	10°	S (-) =	8.7E-05	S (-) =	1.2E-0	
10 0	10	$K_s (m/s) =$	9.8E-06	$K_s (m/s) =$	1.2E-0	
ad d	03 &	$S_s(1/m) =$	8.4E-07	$S_s (1/m) =$	1.2E-0	
		$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA	
10 1	10 -1	$C_D(-) =$	NA	$C_D(-) =$	NA	
//		ξ (-) =	NA	ξ (-) =	NA	
//_	0.03	2		2		
	2 3 10 2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$		
10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 °	10 10 10	$S_{GRF}(-) =$		$S_{GRF}(-) =$		
as Los plot incl. derivatives	racovery period	D _{GRF} (-) = Selected represe	ntotivo naron	D _{GRF} (-) =		
Log-Log plot incl. derivatives-	recovery period	dt ₁ (min) =	ntative paran NA		NA	
10 1	10,10,	$dt_1 (min) = $ $dt_2 (min) = $	NA	$C (m^3/Pa) = C_D (-) =$	NA	
	3	$T_T (m^2/s) =$	1.0E-03		NA	
, n. h.		S (-) =	8.7E-05		I	
	10 °	$K_s (m/s) =$	9.8E-06		<del> </del>	
10		$S_s (1/m) =$	8.4E-07			
	0.3	Comments:			Ī	
	0.3 E	The recommended to				
	10 1 8	the analysis of the C	CRw phase, which	ch shows the best da	ta and	
10 4	}			C (1 1 1 1	le trancmiccivit	
10 4		derivative quality.				
10 4	0.00	is estimated to be 6.	.0•10-4 m ² /s to 6	5.0•10-3 m ² /s. The fl	ow dimension	
10 -4	0.03		0•10-4 m ² /s to 6 According to the	5.0•10-3 m²/s. The flee background effects	ow dimension s no freshwater	

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation			Ol	CRw
Area:	Laxemar	Test no:		Or	oservation hole
Borehole ID:	KI X02 7	Test start:			051112 18:54
borenole ib.	(KLX07A 193.00-313.00 pumped)	rest start.			031112 10.3-
Test section from - to (m):	209.00-347.00	Responsible for			Stephan Rohs
Section diameter, 2-r _w (m):		test execution:		Criet	ian Enachescu
Section diameter, 21 _W (iii).		Responsible for test evaluation:		Crist	ian Enachesci
Linear plot Q and p		Flow period	•	Recovery period	
		Indata		Indata	
2380 -	76	$p_0$ (kPa) =			
	► KLX07A • KLX02_8	p _i (kPa ) =			
2370	75	$p_p(kPa) =$		p _F (kPa ) =	
2360	74	$Q_p (m^3/s) =$	6.07E-04		
를 2350 ·	[Egy] in w notion-seq () in 22	tp (s) =	244343	t _F (s) =	44930
C 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4 2050 - 4	ν u cy ge y	S el S [*] (-)=		S el S [*] (-)=	
50 A	71 O D D P S P S P S P S P S P S P S P S P S	EC _w (mS/m)=		` '	
8 2320 -	770 88	Temp _w (gr C)=			
2310	+ 69	Derivative fact.=	0.05	Derivative fact.=	0.1
2300	+ 68				
2290 12.11.2005 13.11.2006 14.11.2005 15.11.2005 16.1	1.2005 17.11.2005 18.11.2005 19.11.2006 20.11.2006				
	Time	Results	Results		_
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates-	- IN	$T_{\rm M} ({\rm m}^2/{\rm s}) =$			
10 1 10,0		Flow regime:	transient	Flow regime:	transient
	30	$dt_1 (min) =$		$dt_1 (min) =$	186
		$dt_2 (min) =$		$dt_2 (min) =$	369
	10 1	$T (m^2/s) =$		$T (m^2/s) =$	1.5E-0
10 0		S (-) =	7.7E-05		8.3E-0
A STATE OF THE STA	3	$K_s$ (m/s) =		$K_s (m/s) =$	1.1E-0
A Company of the Comp	(KPa)	$S_s (1/m) =$		$S_s(1/m) =$	6.0E-0
	6 00 00 00 00 00 00 00 00 00 00 00 00 00	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10-1	· · · · · ·	$C_D(-) =$	NA	$C_D(-) =$	NA
	0.3	ξ (-) =	NA	ξ(-) =	NA
· ·	10 -1	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
/		$S_{GRF}(III / S) =$		$S_{GRF}(-) =$	
10 ⁰ 10 ¹	10 ² 10 ³ 10 ⁴	$D_{GRF}(\cdot) =$		$D_{GRF}(\cdot) =$	
_og-Log plot incl. derivatives	s- recovery period	Selected represe	ntative paran		
. 5 = -5 p doi:1401700		$dt_1 (min) =$		C (m ³ /Pa) =	NA
Elapsed t	me (h)	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	NA
10 1		$T_T (m^2/s) =$	2.4E-04		NA
	30	S (-) =	7.7E-05		· · ·
	10 1	$K_s (m/s) =$	1.7E-06		
10°		$S_s(1/m) =$	5.6E-07		
	3	Comments:	3.02 07		
	100		transmissivity of	f 2.4•10-4 m2/s was	derived from
	10 °	the analysis of the O			
10-1	0.3	derivative quality.	The confidence r	ange for the boreho	le transmissivit
1/		is estimated to be 9			
1/ .	10 -1	during the test is 2.			
10 0 10 1	10 ² 10 ³ 10 ⁴	head could be deriv plot.	eu irom straight	ime interpolation ir	i ine Horner
		DIOI.			

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxemar	Test no:		Ok	servation hole
Borehole ID:	KLX02_8 (KLX07A 193.00-313.00 pumped)	Test start:			051112 18:54
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2·r _w (m):		Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Emodi piot & dila p		Indata		Indata	
2380	61	p ₀ (kPa) =		aata	
2370	KLX07A • KLX02.7	p _i (kPa ) =			
2360	59	$p_p(kPa) =$		p _F (kPa ) =	
	K P al	$Q_{p} (m^{3}/s) =$	6.07E-04	p _Γ (m α ) =	
<del>X</del> 2391	1 23 W C I	$\frac{Q_p (m/s) =}{tp (s)} =$	244343	t _F (s) =	449307
\$ 2340 ·	e se t	S el S [*] (-)=	211313	S el S [*] (-)=	112307
Fg_2 2300 - 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	R S S S S S S S S S S S S S S S S S S S	S el S (-)= EC _w (mS/m)=		୦ ଖ ୦ (-)=	-
£ 2320 -	P P P S C L	Temp _w (gr C)=			<del>                                     </del>
2310	1 53	Derivative fact.=	0.03	Derivative fact.=	0.09
2300	- 52	Delivative fact.=	0.03	Derivative fact.=	0.07
2290	51				
12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.2005 <b>Tin</b>		Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_{\rm M} (m^2/s) =$			†
	-	Flow regime:	transient	Flow regime:	transient
Elapsed time	[h]	$dt_1 (min) =$	NA	$dt_1 (min) =$	2064
	30	$dt_2 (min) =$	NA	$dt_2 (min) =$	3708
	10 1	$T (m^2/s) =$	2.0E-04	$T (m^2/s) =$	1.7E-04
		S (-) =	1.3E-04	\ /	8.6E-05
10 °	3	$K_s (m/s) =$		$K_s (m/s) =$	3.4E-05
	4 4 4	$S_s(1/m) =$		S _s (1/m) =	1.7E-05
Dd od	10 0	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
/;/		$C_D(-) =$	NA	$C_D(-) =$	NA
10 1	0.3	ξ(-) =	NA	ξ(-) =	NA
.//		3 ( )		3()	†
//	10 -1	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 -1 10 ° 1D/rC	10 ¹ 10 ² 10 ³	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
Line		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative param		A.
		$dt_1$ (min) =	2064	C (m ³ /Pa) =	NA
Elapsed time [h	10, 10, 10, 3	$dt_2 (min) =$	3708	$C_D(-) =$	NA
		$T_T (m^2/s) =$	1.7E-04		NA
	10 1	S (-) =	8.6E-05	.,	
<b>2</b>		$K_s (m/s) =$	3.4E-05		
10 °	3	$S_s (1/m) =$	1.7E-05		
	· · · ·	Comments:			<u> </u>
grid	် 2 ် •	The recommended	transmissivity of	1.7•10-4 m2/s was	derived from
10 -1	0.3	the analysis of the C	Rwr phase, whi	ch shows the best da	ata and
<b> </b>	•			ange for the boreho	
//	10 -1	is estimated to be 9. during the test is 2.			
	•	head could be deriv			
10 -1 10 0 tD/rD2	10 ¹ 10 ² 10 ³	plot.			

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]		Ok	CRwi servation hole
Area:	Laxemar	Test no:		<u>Ot</u>	1
Borehole ID:	KLX07B_1	Test start:			051112 18:54
	(KLX07A 193.00-313.00 pumped)				
Test section from - to (m):	112.00-200.00	Responsible for test execution:			Stephan Rohs
Section diameter, 2·r _w (m):		Responsible for		Cristi	an Enachescu
		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
2380	* 70	Indata		Indata	1
		$p_0 (kPa) =$			
2370	-00	$p_i(kPa) =$		- (IdDa )	
2360	50 <b>E</b>	$p_p(kPa) =$	6.077.04	p _F (kPa ) =	
<u>≅</u> ₂₃₅₀ .	vell [KF	$Q_p (m^3/s) =$	6.07E-04	4 (-)	4.4020
■ ≥ 2340	ation w	tp (s) =	244343		44930
7 520 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200	Pressure Observation well [kPa]	S el S* (-)=		S el S* (-)=	
3 S 2 2320 -	sure C	$EC_w (mS/m) =$ $Temp_w(gr C) =$			
2310-	20 2	Derivative fact.=	0.02	Derivative fact.=	0.0
2300	10	Derivative fact.=	0.02	Derivative fact.=	0.0
2290 12.11.2005 13.11.2005 14.11.2005 15.11.2005 16	11,2005 17,11,2005 18,11,2005 19,11,2005 20,11,2005				
12.11.2005 13.11.2005 14.11.2006 15.11.2005 18	.t1.2005 17.11.2005 18.11.2005 19.11.2005 20.11.2005 <b>Time</b>	Results		Results	
		Q/s $(m^2/s)=$			
og-Log plot incl. derivates-	flow period	$T_M (m^2/s) =$			
Elapsed time	Bul	Flow regime:	transient	Flow regime:	transient
0 1 10,1	10,2 10,3	$dt_1 (min) =$		$dt_1$ (min) =	510
1	<u>.</u>	$dt_2$ (min) =	3570	$dt_2$ (min) =	337
	30	$T (m^2/s) =$		$T (m^2/s) =$	1.2E-0
	10 1	S (-) =	9.9E-05	, ,	6.1E-0
		$K_s$ (m/s) =		$K_s (m/s) =$	1.3E-0
La f	3	$S_s (1/m) =$	1.1E-06	$S_s(1/m) =$	7.0E-0
	(Fe3)	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
	10 ° 8	$C_D(-) =$	NA	$C_D(-) =$	NA
./.		ξ (-) =	NA	ξ (-) =	NA
/ /	0.3	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
	• 10 ·1	$S_{GRF}(HI/S) =$ $S_{GRF}(-) =$		$S_{GRF}(III / S) =$ $S_{GRF}(-) =$	
10 ·1 10 0	10 ¹ 10 ² 10 ³	$D_{GRF}(\cdot) =$		$D_{GRF}(\cdot) =$	
_og-Log plot incl. derivatives	s- recovery period	Selected represe	ntative naran		
. 5 = -5 p doi:1401400		$dt_1$ (min) =		C (m ³ /Pa) =	NA
Elapsed tir.	ne [h]	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	NA
10 1		$T_T (m^2/s) =$	1.2E-04		NA
1	30	S (-) =	6.1E-05	¬( <i>)</i> –	
		$K_s (m/s) =$	1.3E-06		
10 °.	10 1	$S_s (1/m) =$	7.0E-07		
		Comments:			<u> </u>
for the same of th	3 [8-8]		transmissivity of	1.2•10-4 m2/s was	derived from
	, (b-b-b0).	the analysis of the C			
10 -1	10 ° °	derivative quality.	The confidence r	ange for the borehol	e transmissivit
/./		is estimated to be 9			
1 / 1/	0.3	during the test is 2.	According to the	e background effects	
1/•/	<u>*</u>	bood occided to the	ad from 1	line int	the II
10,1	110 · 10 · 10 · 10 · 10	head could be deriv plot.	ed from straight	line interpolation in	the Horner

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation				CRwr
Aroo	Loveme	r Test no:		Ot	oservation hole
Area:	Laxema	ir i est no:			1
Borehole ID:		2 Test start:			051112 18:54
	(KLX07A 193.00-313.00 pumped				
Test section from - to (m):	49.00-111.0	0 Responsible for test execution:			Stephan Rohs
Section diameter, 2-r _w (m):		Responsible for		Crist	ian Enachescu
, ,		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	1
2380	70	Indata		Indata	
	KLX07A • KLX07B 2	$p_0$ (kPa) =			
2370		$p_i (kPa) =$			
2360	50.5	$p_p(kPa) =$		p _F (kPa ) =	
<u>평</u> 2350 ·		$Q_p (m^3/s) =$	6.07E-04		
—————————————————————————————————————	40	tp (s) =	244343	$t_F$ (s) =	449307
Possura Activo well [K 62]		S el S [*] (-)=		S el S [*] (-)=	
sssure.	30 6	EC _w (mS/m)=			
2320	20 2	Temp _w (gr C)=			
2310		Derivative fact.=	0.02	Derivative fact.=	0.02
2300	10				
2290					
12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.	2005 17.11.2005 18.11.2005 19.11.2005 20.11.2005 <b>Time</b>	Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$			
. Elapsed time	h) .	Flow regime:	transient	Flow regime:	transient
10 1	10,	$dt_1 (min) =$	612	$dt_1$ (min) =	192
	30	$dt_2$ (min) =	3600	$dt_2$ (min) =	3372
		$T (m^2/s) =$	1.8E-04	$T (m^2/s) =$	1.5E-04
	101	S (-) =	4.4E-05	. ,	2.4E-05
10 0	A 12	$K_s$ (m/s) =	2.8E-06	$K_s$ (m/s) =	2.4E-06
and the same of th	* ,	S _s (1/m) =	7.2E-07	S _s (1/m) =	3.9E-07
	100	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 1	7	$C_D(-) =$	NA	$C_D(-) =$	NA
./:/	0.3	ξ (-) =	NA	ξ(-) =	NA
· /· /		3 ( )		3 ( )	
//	10 -1	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10-1 10 0	10 ¹ 10 ² 10 ³	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
tD/rD	2	D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives	recovery period	Selected represe	ntative paran	neters.	
		$dt_1$ (min) =	192	C (m ³ /Pa) =	NA
Elapsed time	[h]	$dt_2 \text{ (min)} =$	3372	$C_D(-) =$	NA
		$T_T (m^2/s) =$	1.5E-04		NA
	30	S (-) =	2.4E-05	` ,	
	10	$K_s$ (m/s) =	2.4E-06		
10 °		$S_s(1/m) =$	3.9E-07		
form.	3	Comments:			
a signature		<u>a</u>	transmissivity of	f 1.5•10-4 m2/s was	derived from
	10°			ich shows the best d	
10 1	• : .	derivative quality.	The confidence r	ange for the boreho	le transmissivity
<b>!</b>	0.3	is estimated to be 9			
: //	- F ₁₀ -1	during the test is 2. head could be derive			
10-1 10 0	10 1 10 2 10 3	plot.	va nom snaight	ine incipolation il	i die Homei
tDiri	32	1			

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxemar	Test no:		Ok	servation hole
Borehole ID:	KLX07B_3 (KLX07A 193.00-313.00 pumped)	Test start:			051112 18:54
Test section from - to (m):		Responsible for			Stephan Rohs
		test execution:			
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
		p ₀ (kPa) =			
2380	KLX07A  KLX07B_3	p _i (kPa ) =			
2370	- 70	$p_p(kPa) =$		p _F (kPa ) =	
2360	- · · · · · · · · · · · · · · · · · · ·	$Q_p (m^3/s) =$	6.07E-04		
(K 2350 -	1 00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	tp (s) =	244343	t _F (s) =	449307
■	ation w	S el S [*] (-)=		S el S [*] (-)=	
2330 - 2330 -	) bserv	$EC_w (mS/m) =$		( )-	
Pressure Active well [KPa] 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 2380 - 238	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Temp _w (gr C)=			
2310 *	1 20	Derivative fact.=	0.02	Derivative fact.=	0.02
2300	10				
2290					
12.11.2005 13.11.2005 14.11.2005 15.11.2005 16.11.20	05 17.11.2006 18.11.2006 19.11.2006 20.11.2005 ime	Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- f	low period	$T_M (m^2/s) =$			
Elapsed time	: IN	Flow regime:	transient	Flow regime:	transient
10 1		$dt_1$ (min) =	246	$dt_1$ (min) =	216
	30	$dt_2$ (min) =	2964	$dt_2$ (min) =	3378
	10 1	$T (m^2/s) =$	2.2E-04	$T (m^2/s) =$	1.6E-04
		S (-) =	2.1E-05	S (-) =	1.2E-05
10 °		$K_s (m/s) =$		$K_s$ (m/s) =	3.3E-06
		$S_s (1/m) =$	4.4E-07	$S_s (1/m) =$	2.5E-07
a ising the second of the seco	10°	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10-1		$C_D(-) =$	NA	$C_D(-) =$	NA
-/./	a.3	ξ (-) =	NA	ξ (-) =	NA
· / /					
•//	10 -1	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ⁰ tD/r	10 ¹ 10 ² 10 ³	S _{GRF} (-) =		S _{GRF} (-) =	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives-	· recovery period	Selected represe			1
, Elapsed time	N .	$dt_1 (min) =$	246	0 (III /I u) =	NA
10 1	10,10,2	$dt_2 (min) =$		C _D (-) =	NA
	30	$T_T (m^2/s) =$	2.2E-04	ξ (-) =	NA
	10 1	S (-) =	2.1E-05		
10 °		$K_s (m/s) =$	4.5E-06		
/www	3	$S_s(1/m) =$	4.4E-07		
1.99	[6 ₄ ] (10 ³ o o 10 ³	Comments:		500101 51	1 . 10
[	10 %	The recommended the analysis of the C		f 2.2•10-4 m2/s was ch shows the best da	
.4 ./	•				
10 4	: •	derivative quality. T	i ne confidence i	ange for the note in	
://	03	derivative quality. The stimated to be 9.			
; / / · · · · · · · · · · · · · · · · ·	a3	is estimated to be 9. during the test is 2.	.0•10-5 m ² /s to 4 According to the	4.0•10-4 m²/s. The flee background effects	ow dimension s no freshwater
10 ⁴ 10 ² SM	10 ¹ 10 ² 10 ³	is estimated to be 9.	.0•10-5 m ² /s to 4 According to the	4.0•10-4 m²/s. The flee background effects	ow dimension s no freshwater

Borehole: KLX07A

## **APPENDIX 8-3**

KLX07A Section 335.00-455.00 m pumped

Observation hole Test Summary Sheets

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation			01	CRwi
Area:	Laxemar	Test no:		Ot	oservation hole 1
Borehole ID:	<b>∐</b>   <b>∀</b> 11 1	Test start:			051104 21:35
boleliole ID.	(KLX07A 335.00-455.00 pumped)				031104 21.33
Test section from - to (m):	17.00-70.00	Responsible for			Stephan Rohs
Section diameter 2 r. (m):		test execution: Responsible for		Criet	ian Enachescu
Section diameter, 2·r _w (m):		test evaluation:		Clist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
3400	—KLX07A 64	p ₀ (kPa) =			
3380 -	• HLX11_1	p _i (kPa ) =			
3300		$p_p(kPa) =$		p _F (kPa ) =	
	[k Pa]	$Q_p (m^3/s) =$	2.97E-04		
¥ 3340 ·	1	tp (s) =	289815	$t_F$ (s) =	351140
2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ESS SECTION OF THE PASS SE	S el S [*] (-)=		S el S [*] (-)=	
en s 3300	e Obs	EC _w (mS/m)=			
<b>V</b>	61.5	Temp _w (gr C)=			
3280	/	Derivative fact.=	0.11	Derivative fact.=	0.0
3260	61				
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005 06	8.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005				
04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005 08	:11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005	Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- flo	w period	$T_M (m^2/s) =$			
		Flow regime:	transient	Flow regime:	transient
Elapsed time (h) 10. ¹ 30, 10. ²	300 10 3 3000	$dt_1 (min) =$	NA	$dt_1 (min) =$	NA
		$dt_2 (min) =$	NA	$dt_2$ (min) =	NA
	10 1	$T (m^2/s) =$		$T (m^2/s) =$	4.2E-0
		S (-) =	2.9E-04		8.7E-0
10 0		$K_s$ (m/s) =		$K_s (m/s) =$	8.0E-0
/Kns	10 ° &	$S_s (1/m) =$		$S_s(1/m) =$	1.6E-0
	(	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	NA
10.4	0.3 E	$C_D(-) =$	NA	$C_D(-) =$	NA
	10 -1	ξ (-) =	NA	ξ (-) =	NA
· · · · · · · · · · · · · · · · · · ·					
<u>/</u>	0.03	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	<del>                                     </del>
10 ° sb/rD2	10 1 10 2	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
Landanalett IIII t		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives- re	ecovery period	Selected represe			In i a
Elapsed time (h)	3	$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA
10 1		$dt_2 (min) =$	NA	C _D (-) =	NA
	ž.	$T_T (m^2/s) =$	1.9E-04		NA
	3	S (-) =	2.9E-04		
10 °	10°	$K_s (m/s) =$	3.5E-06		
· 💃	<u> </u>	$S_s (1/m) =$	5.5E-06		
The same	1	Comments:			
	0.3 bill				
		The recommended		f 1.9•10-4 m2/s was	
10-4	0.3 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-000 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-000 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-000 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-000 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-000 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-00 100-000 100-00 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-000 100-0000 100-000 100-000 100-000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 10	The recommended the analysis of the C	CRw phase, which	ch shows the best da	ta and
10 4	10 ⁻³	The recommended the analysis of the C	CRw phase, which The confidence r	ch shows the best da range for the boreho	ta and le transmissivity
10 4	\$ 00-d) 704-d	The recommended the analysis of the C derivative quality. It is estimated to be 8 during the test is 2.	CRw phase, which confidence r 0•10-5 m ² /s to 4 According to the	ch shows the best data range for the boreho 1.0•10-4 m²/s. The fle background effect	ta and le transmissivity ow dimension s no freshwater
10 ^d	10 ⁻³	The recommended the analysis of the Oderivative quality. It is estimated to be 8.	CRw phase, which confidence r 0•10-5 m ² /s to 4 According to the	ch shows the best data range for the boreho 1.0•10-4 m²/s. The fle background effect	ta and le transmissivity ow dimension s no freshwater

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxemar	Test no:		Ol	oservation hole 1
Danahala ID:	111 7/44 0	T44-			054404.04.05
Borehole ID:	HLX11_2 (KLX07A 335.00-455.00 pumped)	Test start:			051104 21:35
Test section from - to (m):	6.00-16.00	Responsible for			Stephan Rohs
Continuation of the contin		test execution:		Cuint	ian Franksson
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p	•	Flow period		Recovery period	1
		Indata		Indata	
3400	KLX07A 63	$p_0$ (kPa) =			
3380	• HLX11_2	p _i (kPa ) =			
	62.5	$p_p(kPa) =$		p _F (kPa ) =	
FR	ं [kPa]	$Q_p (m^3/s) =$	2.97E-04		
¥ 3340 -	n well	tp (s) =	289815	$t_F$ (s) =	351140
Pressure Active well	2 0.5 servarion le le la	S el S* (-)=		S el S [*] (-)=	
9 3300 -	lre obs	EC _w (mS/m)=			
	P 8 8 8 19	Temp _w (gr C)=			
3280	60.5	Derivative fact.=	0.08	Derivative fact.=	NA
3260					
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005		Results		Results	
	Time			Results	
Log-Log plot incl. derivates-	flow period	$Q/s (m^2/s) =$			
Log-Log plot mei. denvates-	now period	$T_M (m^2/s) =$ Flow regime:	transient	Flow regime:	NA
Elapsed time	a (h)	$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	NA
10 1		$dt_2 (min) =$		$dt_2 (min) =$	NA
	10 '	$T (m^2/s) =$		$T (m^2/s) =$	NA
10 °		S (-) =	2.83E-04	. ,	NA
94	E 10 °	$K_s$ (m/s) =		$K_s (m/s) =$	NA
		S _s (1/m) =		S _s (1/m) =	NA
2 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
	10 -1 90d	C _D (-) =	NA	C _D (-) =	NA
10 2		ξ (-) =	NA	ξ(-) =	NA
1: //	10 -2				
		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ±D/i	o 10 1 10 2 10 2	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives	- recovery period	Selected represe	<u> </u>		
		$dt_1 (min) =$		$C (m^3/Pa) =$	NA
		$dt_2 (min) =$		C _D (-) =	NA
		$T_T (m^2/s) =$	1.8E-04	ξ(-) =	NA
		S (-) =	2.8E-04		
		$K_s (m/s) =$	1.8E-05		
	1 11	S _s (1/m) = Comments:	2.8E-05		
not an	alysable	The recommended the analysis of the C derivative quality. It is estimated to be 8 during the test is 2.	CRw phase, which the confidence is $0.05$ m ² /s to $4$ According to the	ch shows the best datange for the boreho 1.0•10-4 m²/s. The file background effect	ta and le transmissivity low dimension s no freshwater
		head could be deriv plot.	ed trom straight	line interpolation in	n the Horner

	Test Sum	mary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]		01	CRwi
Area:	Laxema	r Test no:		<u>Or</u>	servation hole 1
Borehole ID:	HI Y21	1 Test start:			051104 21:35
Dorenole ID.	(KLX07A 335.00-455.00 pumped				
Test section from - to (m):	81.00-150.00	Responsible for			Stephan Rohs
Section diameter, 2·r _w (m):		test execution: Responsible for		Crist	an Enachescu
Section diameter, 2-1 _W (III).		test evaluation:		Cristi	an Lhachesco
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
34M <del>-</del>	<b>*</b> 53.5	$p_0$ (kPa) =			
	──KLX07A • HLX21_1	$p_i (kPa) =$			
3380		$p_p(kPa) =$		p _F (kPa ) =	
3360	F 25	$Q_p (m^3/s) =$	2.97E-04		
전 보 3340 등	52 119	tp (s) =	289815	$t_F$ (s) =	351140
E 2000 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100		S el S [*] (-)=		S el S [*] (-)=	
₹ 9.3300	51 90 92	EC _w (mS/m)=			
	50.5 B.	Temp _w (gr C)=			
3280	50	Derivative fact.=	0.20	Derivative fact.=	0.10
3260	49.5				
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005	09.11.2005 10.11.2005 11.11.2006 12.11.2005 13.11.2005	Results		Results	
Tim	ne			Results	<u> </u>
Log-Log plot incl. derivates- flo	ow poriod	Q/s $(m^2/s) =$			
Log-Log plot incl. derivates- in	ow period	$T_M (m^2/s) =$ Flow regime:	transient	Flow regime:	transient
Elapsed time (h)	2 3 4	$dt_1 \text{ (min)} =$		dt ₁ (min) =	2136
10 1 SKB Laxemar / KLX07A 335-455.00 HLX21_1 / CRw obs	10. 10. FlowDim Version 2.14b (c) Golder Associates	$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$	4014
	in 1	$T (m^2/s) =$		$T (m^2/s) =$	1.9E-04
	"	S (-) =	5.3E-05		2.7E-0
10 °	3	$K_s (m/s) =$		$K_s (m/s) =$	2.8E-06
En 1		$S_s(1/m) =$		S _s (1/m) =	3.8E-0
	10 °	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 ⁴	0.3	$C_D(-) =$	NA	$C_D(-) =$	NA
		ξ (-) =	NA	ξ (-) =	NA
FLOW MODEL : Homogene	ous T= 1.48E-04 m2/s stant rate S= 5.34E-05 -				
FLOW MCDEL : Homogene BOUNDARY CONDITIONS Come WELL TYPE : Observation SUPERPOSITION TYPE : No sup PLOT TYPE : Log-log	S= 5.34E-05 - rD= 1.19E+04 - n= 2.00E+00 -	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ⁰ ID/ID2	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran	neters.	
Elapsed time (h)		$dt_1$ (min) =	2016	0 (III /I u) =	NA
10, -1 10, 0 1 10 1 SKB Laxemar / KLX07A 335.00-455.00 HLX21_1 / CRwr obs	10, 1 10, 2 FlowDim Version 2.14b (c) Golder Associates	$dt_2$ (min) =		$C_D$ (-) =	NA
	(c) Golder Associates	$T_T (m^2/s) =$	1.5E-04	ξ(-) =	NA
1		S (-) =	5.3E-05		
†		$K_s (m/s) =$	2.1E-06		
10 07	3				
10		$S_s (1/m) =$	7.7E-07		
10 5		S _s (1/m) =  Comments:			
10 5	10.0	$S_s$ (1/m) = Comments:	transmissivity of	1.5•10-4 m2/s was	
10 °	**************************************	$S_s$ (1/m) = Comments: The recommended the analysis of the C	transmissivity of CRw phase, which	ch shows the best da	a and
10 °	a	$S_s$ (1/m) = Comments:  The recommended the analysis of the Commented that the analysis of the Commented that the analysis of the Commented that	transmissivity of CRw phase, which The confidence r		ta and e transmissivity
FLOW MODEL :Homogone BOUNDARY CONDITIONS: Con WELL TIPE: : Observation	OGE T 1 1935-04 m2's m T 1 1935-04 m2's m T 1 1935-04 m2's	$S_s$ (1/m) = Comments:  The recommended the analysis of the Commenter quality. The setting of the State of	transmissivity of CRw phase, which The confidence r .0•10-5 m ² /s to ² According to the	ch shows the best datange for the borehold. 0•10-4 m²/s. The flue background effects	ta and te transmissivity ow dimension to no freshwater
10 ° FLOW MODEL: Homogene BOUNDARY CONDITIONS Con	0.3  0.7 1,55E-0.1 m2/5  To 1,55E-0.1 m2/5  S 2,55E-0.5	$S_s$ (1/m) = Comments:  The recommended the analysis of the Commenter quality. The setting of the State of	transmissivity of CRw phase, which The confidence r .0•10-5 m ² /s to ² According to the	ch shows the best datange for the borehold. 0.0 10-4 m ² /s. The fl	ta and te transmissivity ow dimension to no freshwater

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CRwr
Area:	Laxemar	Test no:		Ok	oservation hole 1
Danah ala ID.	LII VO4 0	T t - t t			054404.04.05
Borehole ID:	HLX21_2 (KLX07A 335.00-455.00 pumped)	Test start:			051104 21:35
Test section from - to (m):	9.10-80.00	Responsible for			Stephan Rohs
Continuation of a (m):		test execution:		Cuint	ian Franksson
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
3400	52	$p_0$ (kPa) =			
3380	──KLX07A • HLX21_2	p _i (kPa ) =			
		$p_p(kPa) =$		p _F (kPa ) =	
3360 -	[kPa] 15	$Q_p (m^3/s)=$	2.97E-04		
Pressure A construction of the second of the	1 00 to m no ([46a]	tp (s) =	289815	t _F (s) =	351140
3320 -	50 P2	S el S [*] (-)=		S el S [*] (-)=	
9 3300 -	49.5 P	EC _w (mS/m)=			
3280	Press	Temp _w (gr C)=	0.01		0.0
	<del>-</del> 48.5	Derivative fact.=	0.31	Derivative fact.=	0.20
3260	48.5				
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005 Tit	09.11.2005 10.11.2005 11.11.2006 12.11.2005 13.11.2005	Results		Results	
		Q/s $(m^2/s)=$		results	
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s) =$			
-og -og plot mon dom dom	on ponou	Flow regime:	transient	Flow regime:	transient
Elapsed time (	h) 10,1	$dt_1 \text{ (min)} =$		$dt_1 \text{ (min)} =$	NA
10 1	20	$dt_2 (min) =$		$dt_2 \text{ (min)} =$	NA
		$T (m^2/s) =$		$T (m^2/s) =$	2.1E-0
	10.0	S (-) =	2.8E-05	\ /	2.8E-0
10 °	at parties of a state of the st	$K_s (m/s) =$	3.1E-06	$K_s$ (m/s) =	3.0E-06
	a3	$S_s (1/m) =$	3.9E-07	$S_s (1/m) =$	3.9E-0
	10-1 10-6 d	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 1	P-50-	$C_D(-) =$	NA	$C_D(-) =$	NA
/ •/	0.03	ξ(-) =	NA	ξ(-) =	NA
	10 -2	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 0 tD/rD	10 ¹ 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe		-	15.16
Elapsed time (h		$dt_1 (min) =$	3072	$C (m^3/Pa) =$	NA
10 1	ρ,΄	dt ₂ (min) =		$C_D(-) =$	NA
	10 1	$T_T (m^2/s) =$	2.2E-04	` '	NA
		S (-) =	2.8E-05		<del> </del>
10 "		$K_s (m/s) = S_s (1/m) =$	3.1E-06 3.9E-07		
	10 °	Comments:	3.9⊑-07		<u> </u>
	[65a]		transmissivity of	f 2.2•10-4 m2/s was	derived from
10 1	a3 dd (9)	the analysis of the (			
/· ·/	<b>i.</b>	and derivative qual	ity. The confider	nce range for the bo	rehole
. *//	10 -1			0•10-5 m ² /s to 4.0•10	
. / /	0.03	effects no freshwate		According to the baderived from straig	
10 °1 10 ° ©		interpolation in the		I mon budg	

Test Summ	nary Sheet			
				CRw
Laxemar	Test no:		Ot	servation hol
_	Test start:			051104 21:3
, , ,	Responsible for			Stephan Roh
	test execution:			
	Responsible for		Crist	ian Enachesc
			Pacovery period	
			maata	
──KLX07A • HLX22_1				
2			p- (kPa ) =	
/* ·		2 97F-04	ρ _Γ (m α ) –	
10 10 10 10 10 10 10 10 10 10 10 10 10 1			t= (s) =	35114
50.5 v u pa		20,010		3011
20 See C	. ,		J 61 J (-)=	
49.5 o in s				<del> </del>
	Derivative fact.=	0.11	Derivative fact.=	0.1
09.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005	Results		Results	<u> </u>
	Q/s $(m^2/s)=$			
ow period				
-	Flow regime:	transient	Flow regime:	transient
	$dt_1$ (min) =	2466	dt ₁ (min) =	NA
10,2	$dt_2$ (min) =	4590	$dt_2$ (min) =	NA
F-10.1	$T (m^2/s) =$	1.7E-04	$T (m^2/s) =$	1.8E-0
,	S (-) =			2.2E-0
	$K_s (m/s) =$	2.3E-06	$K_s (m/s) =$	2.4E-0
A.A.	S _s (1/m) =	5.9E-07	S _s (1/m) =	2.8E-0
10 ° [6g]	$C (m^3/Pa) =$	NA		NA
100 de 100		NA	~ / \	NA
0.3		NA		NA
- 10 -1			- , ,	
	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
0.03	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
10 10	D _{GRF} (-) =		D _{GRF} (-) =	
recovery period	Selected represe	ntative paran	ieters.	
	dt ₁ (min) =	2466	C (m³/Pa) =	NA
192. ¹	dt ₂ (min) =			NA
	$T_T (m^2/s) =$			NA
10 5	S (-) =			
	$K_s (m/s) =$	2.3E-06		
	$S_s (1/m) =$	5.9E-07		
A 187 7 P.		_		-
10° 6	Comments:			
10° led 0 40°	The recommended t		1.7•10-4 m2/s was	
10° Red (654 0 144	The recommended the analysis of the C	CRw phase, which	ch shows the best da	ta and
ed Loc do pried	The recommended the analysis of the Coderivative quality.	CRw phase, which The confidence r	ch shows the best da ange for the boreho	ta and le transmissivi
ed Loc do pried	The recommended the analysis of the C derivative quality. It is estimated to be 7.	CRw phase, which confidence is $0.010-5 \text{ m}^2/\text{s}$ to $5.000$	ch shows the best datange for the boreho $5.0 \cdot 10 - 4 \text{ m}^2/\text{s}$ . The fl	ta and le transmissivi ow dimension
ed Loc do pried	The recommended the analysis of the Coderivative quality.	CRw phase, which confidence is $0.050 - 5 \text{ m}^2/\text{s}$ to $50 - 5 \text{ According to the confidence}$	ch shows the best datange for the borehood. 0.0•10-4 m²/s. The flee background effects	ta and le transmissivi ow dimension s no freshwate
	Oskarshamn site investigation  Laxemar  HLX22_1 (KLX07A 335.00-455.00 pumped) 86.00-163.20  Ow period  Ow period  Ow period	86.00-163.20 Responsible for test execution:  Responsible for test execution:  Responsible for test evaluation:  Flow period  Indata $p_0$ (kPa) = $p_1$ (kPa) = $p_2$	Coskarshamn site investigation   Test type:[1]	Coskarshamn site investigation   Test type:   1

Test Sumr	nary Sheet			
				CRwr
Laxemar	Test no:		Ok	oservation hole 1
LII Vaa a	Toot otort:			051104 21:35
				051104 21.35
9.19-85.00	Responsible for			Stephan Rohs
	test execution:		0:.	
	•		Crist	ian Enachescu
	Flow period		Recovery period	
	Indata		Indata	
<b>*</b> 39	$p_0$ (kPa) =			
—KLX07A • HLX22_2	p _i (kPa ) =			
38.5	$p_p(kPa) =$		p _F (kPa ) =	
[ba]	$Q_p (m^3/s) =$	2.97E-04		
38 3	tp (s) =	289815	t _F (s) =	351140
- 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 - 37.5 -	S el S [*] (-)=		S el S [*] (-)=	
o opse	EC _w (mS/m)=			
37 sa.	Temp _w (gr C)=			
-	Derivative fact.=	0.15	Derivative fact.=	0.06
-				
09.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005				
ne	Results		Results	
	Q/s $(m^2/s)=$			
ow period	$T_M (m^2/s) =$			
		transient		transient
J	` ,		, ,	NA
F 10 1				NA
			. ,	4.2E-04
3				4.8E-05
				5.6E-06
10 °				6.3E-07
0.04-9001				NA
<u> </u>				NA NA
10 -1	ζ(-) =	INA	ς (-) =	INA
	T (=-21-)		T (=2/-)	
10 ¹ 10 ²				
				-
recovery period		ntative naram		
, ponou				NA
] 19, ¹				NA
Į.	_ ,			NA
3			· · / -	
Andr				<del> </del>
10 °				<del> </del>
2	Comments:			1
a3 (20 (20 (20 (20 (20 (20 (20 (20 (20 (20		transmissivity of	f 2.2•10-4 m2/s was	derived from
8		CRw phase, which	ch shows the best da	ta and
10 -1				1 - 4 : : : 4 - :
F 10 -1	derivative quality. T			
0 ° 1	derivative quality. The is estimated to be 7.	.0•10-5 m ² /s to 5	5.0•10-4 m ² /s. The fl	ow dimension
	derivative quality. T	.0•10-5 m ² /s to 5 According to the	5.0•10-4 m²/s. The flee background effect	ow dimension s no freshwater
	Oskarshamn site investigation  Laxemar  HLX22_2 (KLX07A 335.00-455.00 pumped)  9.19-85.00  ow period  ow period  recovery period	9.19-85.00 Responsible for test execution: Responsible for test execution: Responsible for test evaluation: Flow period Indata $p_{0} (kPa) = p_{p}(kPa) = Q_{p} (m^{3}/s) = tp (s) = Sel S (-) = EC_{w} (mS/m) = Temp_{w}(gr C) = Derivative fact. = Temp_{w}(gr C) = Derivative fact. = Temp_{w}(gr C) = Temp_{w}(gr $	Coskarshamn site investigation   Test type:[1]	Coskarshamn site investigation   Test type:I1

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation			Ol	CRw eservation hole
Area:	Laxemar	Test no:	Observation		
Borehole ID:		Test start:	05110		
Toot anotion from to (m):	(KLX07A 335.00-455.00 pumped)	Responsible for			Stephan Roh
Test section from - to (m):	61.00-160.20	test execution:			Stephan Kon
Section diameter, 2-r _w (m):		Responsible for		Crist	ian Enachesc
l :		test evaluation:			
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	1
3400	► KLX07A • HLX23_1	$p_0 (kPa) =$			
3380 -	HLX23_1 1 98.6	$p_i (kPa) = p_p(kPa) =$		p _F (kPa ) =	
3360 -	( IA		2.97E-04		
[₹ 2340]	98.45	$Q_p (m^3/s) = tp (s) =$	2.97E-04 289815		35114
ve well	98.4 gg		209013		33114
28 3700 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1 3000 - 0.00 1	99.5 (Fed.) 99.9 (Ped.) 99.3 (Ped.) 99.3 (Ped.) 99.3 (Ped.)	S el S (-)= EC _w (mS/m)=		S el S [*] (-)=	
8 3300 -	98.3 198.3	Temp _w (gr C)=			-
3280 -	! <b>U</b>	Derivative fact.=	0.14	Derivative fact.=	0.1
3260 -	98.2	Delivative fact.=	0.14	Derivative fact.=	0.1
3240	98.1				
31.10.2005 02.11.2005 04.11.2005 06.11.2005 <b>Tim</b>	08.11.2005 10.11.2005 12.11.2005 14.11.2005	Results		Results	
		Q/s $(m^2/s)=$		recuite	1
Log-Log plot incl. derivates- flo	ow period	$T_{\rm M} (m^2/s) =$			
	on poneu	Flow regime:	transient	Flow regime:	transient
Elapsed time (h)	2	$dt_1 \text{ (min)} =$	NA	$dt_1 \text{ (min)} =$	NA
10 1		$dt_2 \text{ (min)} =$	NA	$dt_2 \text{ (min)} =$	NA
. يى	0.3	$T (m^2/s) =$	NA	$T (m^2/s) =$	NA
اه و آهي. اهي ا	3. A	S (-) =	Na	S (-) =	NA
10 0	10 1	$K_s (m/s) =$	NA	$K_s (m/s) =$	NA
::/		$S_s (1/m) =$	NA	$S_s(1/m) =$	NA
	0.03	C (m ³ /Pa) =	NA	C (m ³ /Pa) =	NA
	44) 706d	$C_D(-) =$	NA	$C_D(-) =$	NA
10-1	:	ξ(-) =	NA	ξ(-) =	NA
	0.003	3 ( )		3 ( )	
	•	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 °1 10 °1 tD/rD2	10 1 10 2	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran	neters.	
		$dt_1$ (min) =	NA	C (m ³ /Pa) =	NA
Elapsed time (h)	18,1	$dt_2$ (min) =	NA	$C_D(-) =$	NA
		$T_T (m^2/s) =$	NA	ξ (-) =	NA
	10 °	S (-) =	NA		
10°		K _s (m/s) =	NA		
بنين فينونون والمسترين	10 -1	$S_s (1/m) =$	NA		
R 10-1		Comments:		•	•
. ;//	M (.0040) (			sivity is estimated to	
	10 -2 - 84	m ² /s to 7.0•10-3 m ²		oor data quality no b	
10 2		is possible.			
	10 3				
10 ⁻¹ 10 ° 10 ND2	10 ¹ 10 ²				

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation			Ol	CRw servation hole
Area:	Laxemar	Test no:	Observation		
Borehole ID:		Test start:			051104 21:3
Test section from - to (m):	(KLX07A 335.00-455.00 pumped)	Responsible for			Stephan Roh
rest section nom - to (m).	0.10-00.00	test execution:			Stephan Kon
Section diameter, 2·r _w (m):		Responsible for		Crist	ian Enachesc
Linear plat O and p		test evaluation:		Recovery period	
Linear plot Q and p		Flow period Indata		Indata	
		p ₀ (kPa) =		iliuata	
3400	—KLX07A ◆ HLX23_2	$p_0 (RPa) =$			
3380 -	96.6	$p_p(kPa) =$		p _F (kPa ) =	<del>                                     </del>
3360 -		$Q_p (m^3/s) =$	2.97E-04		
R d 보 <u>3340</u> -	967 1972 - 47	tp(s) =	289815		35114
ve well	96.4 E O N	S el S [*] (-)=		S el S [*] (-)=	
2000 - Well 7000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000	96.3 O	$EC_w (mS/m) =$		0 0 0 ( )=	
2000 -	- 96.2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Temp _w (gr C)=			
3280 -	962 <b>č.</b>	Derivative fact.=	0.13	Derivative fact.=	0.1
3260	96.1				
3240	96				
31.10.2005 02.11.2005 04.11.2005 06.11.2005 <b>Tin</b>	08.11.2005 10.11.2005 12.11.2005 14.11.2005	Results	•	Results	•
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fle	ow period	$T_M (m^2/s) =$			
		Flow regime:	transient	Flow regime:	transient
Elapsed time (* 10 10 10 10 10 10 10 10 10 10 10 10 10	10,2	$dt_1$ (min) =	NA	$dt_1$ (min) =	NA
	10 °	$dt_2$ (min) =	NA	$dt_2$ (min) =	NA
ين ا	:	$T (m^2/s) =$	NA	$T (m^2/s) =$	NA
	0.3	S (-) =	NA	S (-) =	NA
10°	10.1	$K_s (m/s) =$	NA	$K_s$ (m/s) =	NA
	le de la constant de	$S_s (1/m) =$	NA	$S_s(1/m) =$	NA
2 //,	0.03 d-9,00	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1		$C_D(-) =$	NA	$C_D(-) =$	NA
	10 -2	ξ (-) =	NA	ξ (-) =	NA
	0.003	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ⁰ t0/r0z	10 ¹ 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		D _{GRF} (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran		
		$dt_1$ (min) =	NA	$C (m^3/Pa) =$	NA
Elapsed time (I	3	$dt_2$ (min) =	NA	$C_D(-) =$	NA
	-10 °	$T_T (m^2/s) =$	NA	ξ (-) =	NA
		S (-) =	NA		
	0.3	$K_s (m/s) =$	NA		
10 °		$S_s (1/m) =$	NA		
.,	10 ⁻¹	Comments:			
//				sivity is estimated to	
10 1	0.03 &	m ² /s to 6.0•10-3 m ² /is possible.	s. Due to the po	oor data quality no b	etter estimation
	10 -2	15 possible.			
10 ⁻¹ 10 ⁰ sbirto	0.003				
tDirbo					

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]		01	CRw
Area:	Laxemar	Test no:		Or	oservation hole
Borehole ID:	LII VOA 4	Test start:			051104 21:35
Borefiole ID.	(KLX07A 335.00-455.00 pumped)	rest start.			031104 21.30
Test section from - to (m):	41.00-175.20	Responsible for			Stephan Rohs
Section diameter, 2-r _w (m):		test execution: Responsible for		Criet	ian Enachescu
Section diameter, 24 _W (m).		test evaluation:		Clist	ian Lhachesci
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
3400	- KLX07A • HLX24_1	p ₀ (kPa) =			
3380 -	HLA24_1]	p _i (kPa ) =			
3360		$p_p(kPa) =$		p _F (kPa ) =	
KPa]	98.6 88.6 98.6 98.6 98.6 98.6 98.6 98.6	$Q_p (m^3/s) =$	2.97E-04		
P7 68 SUI O ACUTO W WILL IN 1970 P 19	tion we	tp (s) =	289815		35114
Adt iv	198.5 P P P P P P P P P P P P P P P P P P P	S el S* (-)=		S el S [*] (-)=	ļ
37 3300 -	s ure Ol	EC _w (mS/m)=			
<u>د</u> ا	Pre s s	Temp _w (gr C)=	0.24	5	0.2
	98.3	Derivative fact.=	0.24	Derivative fact.=	0.2
3260					
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005	98.2 09.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2006	Results		Results	
Ti	ne	Q/s $(m^2/s)=$	ſ	Nesuits	1
Log-Log plot incl. derivates- fl	ow neriod	$T_{M} (m^{2}/s) =$			
Log-Log plot mei. denvates- n	ow periou	Flow regime:	transient	Flow regime:	transient
Elapsed time [I	1	dt ₁ (min) =	NA	$dt_1 \text{ (min)} =$	NA
		$dt_2 (min) =$	NA	$dt_2 (min) =$	NA
	0.3	$T (m^2/s) =$	NA	$T (m^2/s) =$	NA
		S (-) =	NA	S (-) =	NA
10 "	10 -1	$K_s (m/s) =$	NA	$K_s (m/s) =$	NA
		$S_s(1/m) =$	NA	$S_s(1/m) =$	NA
. //	0.03	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10-1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$C_D(-) =$	NA	$C_D(-) =$	NA
//.		ξ(-) =	NA	ξ(-) =	NA
	0.003				
	• •	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 ° 10 °	10 ¹ 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe			
Elapsed time (	o) 10, ¹	$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA
10 1		$dt_2 (min) =$	NA	$C_D(-) =$	NA
	10 °	$T_T (m^2/s) =$	NA	ξ (-) =	NA
	<u> </u>	S (-) =	NA		
10 °	0.3	$K_s (m/s) =$	NA		
		$S_s(1/m) =$	NA		
e de la companya de l	10 ¹ Regal to 0	Comments:	1 . 1		1. 60 10 1
. /. /	*** 3 0.03	The range for the be m ² /s to 8.0•10-3 m ² /s		sivity is estimated to	
• /•/	. 0.03	is possible.	is. Due to the pe	or ann quanty no o	cioi csumanon
/·/·	10 -2	*			
10 ·1 10 ° 1DHD	10 1 10 2 10 3 0.003				
LIND					

	Test Sumi	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CRwi
Area:	Laxema	Test no:		Ok	servation hole 1
D 1 1 1D	1/17/00 0				05110101010
Borehole ID:	KLX02_6 (KLX07A 335.00-455.00 pumped)	Test start:			051104 21:35
Test section from - to (m):		Responsible for			Stephan Rohs
Continuation of the contin		test execution:		Cuint	ian Faashaas
Section diameter, 2·r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu
Linear plot Q and p	•	Flow period		Recovery period	
		Indata		Indata	
3400		$p_0$ (kPa) =			
3380 -	◆ KLX02_7	p _i (kPa ) =			
3360		$p_p(kPa) =$	• • • • • • •	p _F (kPa ) =	
kPa]	iii [KPa]	$Q_p (m^3/s) =$	2.97E-04		25114
	59.5 50	tp (s) =	289815		351140
5 330 -	+ 59 Observe	S el S * (-)= EC $_w$ (mS/m)=		S el S (-)=	
P 8000- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	+ 50.5 Deservation well [Kp3]	Temp _w (gr C)=			<del>                                     </del>
3290 -	58.5 &	Derivative fact.=	0.12	Derivative fact.=	0.1
3260	58				
3240 94.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005	09.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005				
Tir	me	Results	-	Results	•
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- f	low period	$T_M (m^2/s)=$			
Elapsed time [	h]	Flow regime:	transient	Flow regime:	transient
10 1		dt ₁ (min) =	NA	$dt_1 (min) =$	NA
	į.	$dt_2 (min) =$	NA	$dt_2 (min) =$	NA
		T (m2/s) = S (-) =	NA NA	T (m2/s) = S (-) =	NA NA
10 0	10°	$S(-) = K_s(m/s) =$	NA	$S(-) = K_s(m/s) =$	NA
		$S_s (1/m) =$	NA	$S_s(1/m) =$	NA
a	3 (Fee) 1 (Fee	$C (m^3/Pa) =$	NA	C (m ³ /Pa) =	NA
/*/		$C_D(-) =$	NA	$C_D(-) =$	NA
10 %	10 1	ξ (-) =	NA	ξ(-) =	NA
//	0.03				
/ /.	•	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 ⁰ tD/rD/	10 1 10 2	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =	
Log-Log plot incl. derivatives	- recovery period	Selected represe			
Elapsed time	n Ibi	$dt_1 (min) =$	NA	$C (m^3/Pa) =$	NA
10 1		$dt_2 (min) =$	NA	C _D (-) =	NA
	10 1	$T_T (m^2/s) =$	NA	ξ(-) =	NA
	•	S (-) =	NA		
10 °	, A	$K_s (m/s) = S_s (1/m) =$	NA NA		
	10 °	S _s (1/m) = Comments:	INA		
(g)	0.3 100-01 (0.00 d) (	The range for the be		ssivity is estimated to	
10 °1 10 tibe	u 10 1 10 2 10 2				

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation			01	CRw
Area:	Laxemar	Test no:		Or	servation hole
Darrahala ID.	W V00 7	T t - t t			054404.04:05
Borehole ID:	KLXU2_/ (KLX07A 335.00-455.00 pumped)	Test start:			051104 21:35
Test section from - to (m):	209.00-347.00	Responsible for			Stephan Rohs
Otitit O ():		test execution:		0-1-1	<b>-</b>
Section diameter, 2·r _w (m):		Responsible for test evaluation:		Cristi	an Enachesc
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
3400 +	<b>T</b> 50.	$p_0$ (kPa) =			
<u> </u>	— KLX07A ◆ KLX02_6	p _i (kPa ) =			
3380 -	57.5	$p_p(kPa) =$		p _F (kPa ) =	
3360 -	KP al	$Q_p (m^3/s) =$	2.97E-04		
호 포 3340 -	157 M	tp (s) =	289815	$t_F$ (s) =	35114
8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	2 27 25 Series Observation well [Rea]	S el S [*] (-)=		S el S [*] (-)=	
g 3300 -	- 56.5 - 56.5	EC _w (mS/m)=			
3280 -	es s	Temp _w (gr C)=			
3260	<b>V</b>	Derivative fact.=	0.17	Derivative fact.=	0.1
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005 <b>T</b>	99.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005	Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- f	low period	$T_{\rm M} (m^2/s) =$			
	<u> </u>	Flow regime:	transient	Flow regime:	transient
Elapsed time	h]	$dt_1 (min) =$	990	$dt_1 \text{ (min)} =$	255
10 1	3	$dt_2$ (min) =	3864	$dt_2$ (min) =	391
		$T (m^2/s) =$	4.7E-04	$T (m^2/s) =$	2.7E-0
		S (-) =	1.2E-04	S (-) =	3.7E-0
10°	0.3	$K_s (m/s) =$	3.4E-06	$K_s (m/s) =$	1.9E-0
.: '		$S_s (1/m) =$	8.4E-07	$S_s(1/m) =$	2.7E-0
. /	10 10 10 10 10 10 10 10 10 10 10 10 10 1	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1	, , , , , , , , , , , , , , , , , , ,	$C_D(-) =$	NA	$C_D$ (-) =	NA
•//	0.03	ξ (-) =	NA	ξ (-) =	NA
	10 -2	2		2	
	•	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 -1 10 °	10 1 10 2	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
_og-Log plot incl. derivatives-	rocovery period	D _{GRF} (-) =	ntativa raza-	D _{GRF} (-) =	
Log-Log plot mei. derivatives-	recovery period	Selected represe dt ₁ (min) =			NA
Elapsed time	[h] 2	$dt_1 (min) = $ $dt_2 (min) = $		$C (m^3/Pa) = C_D (-) =$	NA NA
10 1		2	2.7E-04		NA
		$T_{T} (m^2/s) = $ $S (-) = $	3.7E-04	<i>¬</i> (⁻) =	14/1
		$K_s (m/s) =$	1.9E-06		
10 °	10°	$S_s(1/m) =$	2.7E-07		
		Comments:			<u> </u>
Da rod	0.3		transmissivity of	£ 2.7•10-4 m2/s was	derived from
	• •		CRwr phase, whi	ch shows the best da	ata and
. //:			C 1		a transmissivit
10-1	10-1	derivative quality.			
10 4		is estimated to be 7.	.0•10-5 m ² /s to 6	5.0•10-4 m ² /s. The fl	ow dimension
10 -1	10		0•10-5 m ² /s to 6 According to the	5.0•10-4 m²/s. The fle background effects	ow dimension s no freshwater

	Test Sumr	nary Sheet			
Project:	Oskarshamn site investigation				CRw
Area:	Laxemar	Test no:		Ok	servation hole
D 1 1 1D	1/11/00				0511010101
Borehole ID:	KLXU2_8 (KLX07A 335.00-455.00 pumped)	Test start:			051104 21:35
Test section from - to (m):		Responsible for			Stephan Rohs
2 " " ( )		test execution:			
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Cristi	an Enachescu
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
		$p_0$ (kPa) =			
3400	KLX07A • KLX02_8	p _i (kPa ) =			
3380 -		$p_p(kPa) =$		p _F (kPa ) =	
3360	75.5	$Q_p (m^3/s) =$	2.97E-04		
R 80 T	Tabilion unitervaled of masseld	tp (s) =	289815	t _F (s) =	35114
© * * * * * * * * * * * * * * * * * * *	vation ,	S el S [*] (-)=		S el S [*] (-)=	
ure A dd	174.5 C	EC _w (mS/m)=			
8 3300 -	ressure	Temp _w (gr C)=			
3280 -	74	Derivative fact.=	0.12	Derivative fact.=	0.1
3260					
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005	73.5 09.11.2005 10.11.2006 11.11.2005 12.11.2005 13.11.2005	_		_	
	ime	Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- flo	ow period	$T_{\rm M} (m^2/s) =$			
Elacsed tim	on (b)	Flow regime:	transient	Flow regime:	transient
10 1		$dt_1 (min) =$	NA NA	$dt_1 (min) =$	241 380
	<b>f</b>	$dt_2 (min) =$		$dt_2 (min) =$	
	3	$T (m^2/s) = S (-) =$	9.2E-05	$T (m^2/s) = $ $S (-) = $	3.5E-0- 1.0E-0-
	110°	$K_s (m/s) =$		$K_s (m/s) =$	6.9E-0
10	; M;	$S_s (1/m) =$		$S_s(11/s) =$ $S_s(1/m) =$	2.0E-0
00.00	0.3	C (m ³ /Pa) =	NA	$C (m^3/Pa) =$	NA
		$C_D(-) =$	NA	$C_D(-) =$	NA
10 -1	10-1	ξ(-) =	NA	ξ(-) =	NA
// .	0.03	3 ( )			
	•	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10-1 10	10-3	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
10 10 tD)	0 10 ¹ 10 ² 7/02	$D_{GRF}$ (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative paran	ieters.	
		$dt_1 (min) =$		C (m³/Pa) =	NA
Elapsed time	[h] , 10, 10, 2	$dt_2 (min) =$		$C_D$ (-) =	NA
10 1	10 1	$T_T (m^2/s) =$	3.5E-04	ξ (-) =	NA
		S (-) =	1.0E-04		
10 °	10°	$K_s (m/s) =$	6.9E-05		
-	17	$S_s(1/m) =$	2.0E-05		
P 10-1		Comments:		22.5.10.1.51	1
• /./*•	10-1			3.5•10-4 m2/s was ch shows the best da	
. //	• •			ange for the borehol	
10 2	10 -2	is estimated to be 8	.0•10-5 m ² /s to 7	7.0•10-4 m ² /s. The fl	ow dimension
1 //		during the test is 2.	According to the	e background effects	
/ 1	<b>↓</b>		1.0	4	.1 TT
10 ·1 10 0 110 NO	10 10 10 2	head could be deriv plot.	ed from straight	line interpolation in	the Horner

	Test Sumr	nary Sheet								
Project:	Oskarshamn site investigation				CRwr					
Area:	Laxemar	Test no:	Observation h							
Borehole ID:	KLX07B_1 (KLX07A 335.00-455.00 pumped)	Test start:			051104 21:35					
Test section from - to (m):		Responsible for			Stephan Rohs					
0		test execution:		Oriet	: Fb					
Section diameter, 2-r _w (m):		Responsible for test evaluation:		Crist	ian Enachescu					
Linear plot Q and p	•	Flow period		Recovery period						
		Indata		Indata						
3400 1	<b>7</b> 66	$p_0$ (kPa) =								
	— KLX07A ◆ KLX07B_1	p _i (kPa ) =								
3380		$p_p(kPa) =$		p _F (kPa ) =						
3360	, ~~ is a	$Q_p (m^3/s) =$	2.97E-04							
호 3340- -	64.5 III III III III III III III III III I	tp (s) =	289815	$t_F$ (s) =	351140					
88 3300- 6 FT 3300- 6 FT 3300-	Pressure Observation we [[Pe3]	S el S [*] (-)=		S el S [*] (-)=						
9 8 3300-	63.5 SQ 92.	EC _w (mS/m)=								
_	- 63 as	Temp _w (gr C)=								
3280	62.5	Derivative fact.=	0.14	Derivative fact.=	0.04					
3260	62									
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005	09.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005	- "		D 1						
		Results	1	Results	1					
Lag Lag platinal derivates f	law paried	$Q/s (m^2/s) =$								
Log-Log plot incl. derivates- f	low period	$T_M$ (m ² /s)= Flow regime:	transient	Flow regime:	transiant					
Bapsed time	(h)	dt ₁ (min) =	NA	dt ₁ (min) =	transient 252					
10 1	10 1	$dt_1 (min) =$ $dt_2 (min) =$	NA	$dt_1 (min) =$ $dt_2 (min) =$	354					
		$T (m^2/s) =$		$T (m^2/s) =$	2.3E-04					
	3	S (-) =	2.4E-04	\ /	4.5E-05					
10 °	110°	$K_s (m/s) =$		$K_s (m/s) =$	2.6E-06					
i.		$S_s(1/m) =$		$S_s(1/m) =$	5.1E-07					
od od	Red), (pdd) '04d	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA					
10-4	, o o	$C_D(-) =$	NA	$C_D(-) =$	NA					
. //.:	.•	ξ(-) =	NA	ξ(-) =	NA					
/./.										
	•	$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$						
10 ⁻¹ 10 ¹ tD/rl	0 10 1 10 2 D2	$S_{GRF}(-) =$		$S_{GRF}(-) =$						
		$D_{GRF}$ (-) =		$D_{GRF}$ (-) =						
Log-Log plot incl. derivatives-	recovery period	Selected represe	entative paran	neters.						
		$dt_1 (min) =$	252	$C (m^3/Pa) =$	NA					
10 1 10 1 Elapsed time (	(h) 1921 1922	$dt_2 (min) =$		$C_D(-) =$	NA					
	10 '	$T_T (m^2/s) =$	2.3E-04		NA					
		S (-) =	4.5E-05							
10°	A V	$K_s (m/s) =$	2.6E-06							
		$S_s (1/m) =$	5.1E-07							
8 10 4 1		Comments:		52 2 10 4 27	1 1.6					
<b> </b>	Red (101-4) 703-0			f 2.3•10-4 m2/s was ly time data), which						
. //	• :			if time data), which						
10 2	• 10 °	transmissivity is est	imated to be 8.0	•10-5 m ² /s to 6.0•10	0-4 m ² /s. The					
	•			According to the ba						
10 -1 10 0 10 HDrO	10 10 10 2	effects no freshwate interpolation in the		derived from straig	ni iine					
นสม			omor prot.							

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation				CRwr
Area:	Laxemar	Test no:		Ot	oservation hole 1
Borehole ID:	KLX07B_2 (KLX07A 335.00-455.00 pumped)	Test start:			051104 21:35
Test section from - to (m):		Responsible for			Stephan Rohs
()		test execution:			
Section diameter, 2·r _w (m):		Responsible for		Crist	ian Enachescu
Linear plot Q and p		test evaluation: Flow period		Recovery period	
Emodi piot e dila p		Indata		Indata	
3400	- 65	p ₀ (kPa) =			
	──KLX07A • KLX07B_2	p _i (kPa ) =			
3300	64	$p_p(kPa) =$		p _F (kPa ) =	
3360	635 QX	$Q_p (m^3/s) =$	2.97E-04		
<u> </u>	s u	tp (s) =	289815	t _F (s) =	351140
\$ 320.	e25 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 - 625 -	S el S [*] (-)=		S el S [*] (-)=	
6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25.5 Pressure Observation well [F62]	$EC_w (mS/m) =$		3 6. 3 ( )=	
3280	61.5 D	Temp _w (gr C)=			
	61	Derivative fact.=	0.13	Derivative fact.=	0.12
3260	60.5				
3240	09.11.2005 10.11.2006 11.11.2005 12.11.2005 13.11.2005				
		Results		Results	1
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s) =$			
		Flow regime:	transient	Flow regime:	transient
Elapsed time	1(h) 10, 10, 2	$dt_1$ (min) =	NA	$dt_1$ (min) =	169
		$dt_2$ (min) =	NA	$dt_2$ (min) =	296
1	<b>A</b> 3	$T (m^2/s) =$	4.2E-04	$T (m^2/s) =$	2.6E-04
	A AT	S (-) =	1.2E-04	S (-) =	2.7E-05
10 °	10°	$K_s$ (m/s) =		$K_s$ (m/s) =	4.2E-06
		$S_s (1/m) =$		$S_s(1/m) =$	4.4E-07
0.00	0.3	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
10 -1	10-1	$C_D(-) =$	NA	$C_D(-) =$	NA
	** **	ξ (-) =	NA	ξ (-) =	NA
//. :	0.03				
//.		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ⁻¹ 10 tD/s	o 10 ¹ 10 ²	$S_{GRF}(-) =$		$S_{GRF}(-) =$	
Lantanal (C. 1. C. 2. C.		D _{GRF} (-) =		D _{GRF} (-) =	
Log-Log plot incl. derivatives-	recovery period	Selected represe			INIA
Elapsed 9	ime [h]	$dt_1 (min) =$	169	$C (m^3/Pa) =$	NA
10 1	10 1	$dt_2 (min) =$		$C_D(-) =$	NA
	10	$T_T (m^2/s) =$	2.6E-04	ξ(-) =	NA
•	3	$S (-) = K_s (m/s) =$	2.7E-05 4.2E-06		
10 0			4.4E-07		
6 with the state of the state o	10 °	S _s (1/m) = Comments:	4.4⊑-07		
a a a a a a a a a a a a a a a a a a a		The recommended	transmissivity of	f 2 6•10-1 m2/s was	derived from
10 4	0.3			ly time data), which	
V. /		data and derivative	quality. The con	fidence range for th	e borehole
	•			•10-5 m ² /s to 6.0•10	
/	0.03	flow dimension dur effects no freshwate			
10 °	10 ¹ 10 ²	interpolation in the		derived from strang.	in iiiic
			1		

	Test Sumn	nary Sheet			
Project:	Oskarshamn site investigation	Test type:[1]			CRwi
Area:	Laxemar	Test no:		Ok	servation hole 1
Borehole ID:	KLX07B_3	Tost start:			051104 21:35
borenole ib.	(KLX07A 335.00-455.00 pumped)	rest start.			031104 21.33
Test section from - to (m):		Responsible for			Stephan Rohs
Section diameter, 2·r _w (m):		test execution: Responsible for		Criet	ian Enachescu
Section diameter, 21 _W (III).		test evaluation:		Crist	an Lhachesco
Linear plot Q and p		Flow period		Recovery period	
		Indata		Indata	
3400	— KLX07A	$p_0$ (kPa) =			
3380	► KLX0/A • KLX07B_3 65	p _i (kPa ) =			
3360	64.5	$p_p(kPa) =$		p _F (kPa ) =	
	- 64 24 E	$Q_p (m^3/s) =$	2.97E-04		
3340 -	63.5 kj m	tp (s) =	289815		351140
8 9 4 6 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		S el S* (-)=		S el S [*] (-)=	
3300 ·	82.5 en ss	EC _w (mS/m)=			
3280 •	62 <b>d</b>	Temp _w (gr C)=	0.10	5	0.4
3260	61	Derivative fact.=	0.13	Derivative fact.=	0.2
3240 04.11.2005 05.11.2005 06.11.2005 07.11.2005 08.11.2005	09.11.2005 10.11.2005 11.11.2005 12.11.2005 13.11.2005				
	ime	Results		Results	
		Q/s $(m^2/s)=$			
Log-Log plot incl. derivates- fl	ow period	$T_M (m^2/s) =$			
	·	Flow regime:	transient	Flow regime:	transient
Elapsed time [	n)	$dt_1$ (min) =	NA	dt ₁ (min) =	156
10 1	30,	$dt_2$ (min) =	NA	$dt_2$ (min) =	306
		$T (m^2/s) =$	4.3E-04	$T (m^2/s) =$	2.9E-04
	,	S (-) =	8.9E-05	S (-) =	1.8E-05
10°	<b>N</b> . 10°	$K_s$ (m/s) =	9.0E-06	$K_s$ (m/s) =	6.0E-06
		$S_s(1/m) =$	1.9E-06	$S_s (1/m) =$	3.6E-07
od od	3 (Oq-	$C (m^3/Pa) =$	NA	$C (m^3/Pa) =$	NA
	P 90. (f	$C_D(-) =$	NA	$C_D(-) =$	NA
10 1	10 -1	ξ (-) =	NA	ξ (-) =	NA
/	0.03	2		2	
• •		$T_{GRF}(m^2/s) =$		$T_{GRF}(m^2/s) =$	
10 ° tD/r0:	10 ¹ 10 ²	$S_{GRF}(-) = D_{GRF}(-) =$		$S_{GRF}(-) = D_{GRF}(-) =$	
Log-Log plot incl. derivatives-	recovery period	Selected represe	ntative naram		
33 piot mon donitalites-		$dt_1 (min) =$		C (m ³ /Pa) =	NA
		$dt_1 \text{ (min)} =$ $dt_2 \text{ (min)} =$		$C_D(-) =$	NA
0.3 10 0 Elapsed time (h	10,10,10,2	$T_T (m^2/s) =$	2.9E-04	. ,	NA
	10 1	S (-) =	1.8E-05	` '	
	J	$K_s (m/s) =$	6.0E-06		
10 °	11 : 1	S _s (1/m) =	3.6E-07		
S	100	Comments:			
g jjrke e e e e e e e e e e e e e e e e e e	[629] Jo54d)			f 2.9•10-4 m2/s was	
\ \frac{1}{2}	3 0,00d	the analysis of the C			
10 1		data and derivative		fidence range for th	
10.3	10-1		imated to be & 0	10-5 m ² /s to 6 0-10	$-4 \text{ m}^2/\text{c}$ Tha
10 3		transmissivity is est			
10 4	0.00		ing the test is 2. er head could be	According to the ba	ckground

Borehole: KLX07A

## **APPENDIX 9**

SICADA data tables

(Observation boreholes)

KLX07A

KLX07B

2005.10.28 09:51

2005.12.08 08:54

112.00

200.00

Golder

Page 9/2

(Simplified version v1.2) **SICADA/Data Import Template** SKB & Ergodata AB 2004 File Identity Created By Stephan Rohs Created 2006-01-26 KLX07A AP PS 400-05-045 **Activity Type Project** KLX07A Interference test-obs.holes Activity Information **Additional Activity Data** C40 1160 P20 P200 performing Field crew Company Idcode Start Date Stop Date Secup (m) Seclow (m) Section No evaluating data field work Instrument manager Field crew HLX10 2005.10.28 09:51 2005.12.08 08:54 3.00 85.00 Golder HLX11 2005.10.28 09:51 2005.12.08 08:54 6.00 16.00 Golder HLX11 2005.10.28 09:51 2005.12.08 08:54 17.00 70.00 Golder HLX21 2005.10.28 09:51 2005.12.08 08:54 9.10 80.00 Golder HLX21 2005.10.28 09:51 2005.12.08 08:54 81.00 150.00 Golder HLX22 2005.10.28 09:51 9.19 85.00 2005.12.08 08:54 Golder HLX22 163.20 2005.10.28 09:51 2005.12.08 08:54 86.00 Golder HLX23 2005.10.28 09:51 2005.12.08 08:54 6.10 60.00 Golder HLX23 160.20 2005.10.28 09:51 2005.12.08 08:54 61.00 Golder HLX24 2005.10.28 09:51 2005.12.08 08:54 41.00 175.20 Golder KLX02 2005.10.28 09:51 2005.12.08 08:54 202.95 208.00 Golder KLX02 2005.10.28 09:51 2005.12.08 08:54 209.00 347.00 Golder KLX02 2005.10.28 09:51 2005.12.08 08:54 348.00 451.00 Golder KLX07B 2005.10.28 09:51 2005.12.08 08:54 0.00 48.00 Golder KLX07B 2005.10.28 09:51 111.00 2005.12.08 08:54 49.00 Golder

Table		plu_inf_te	st_obs_d
		PLU interference test, O	bservation section data
Column	Datatype	Unit	Column Description
site	CHAR		Investigation site name
activity_type	CHAR		
start_date	DATE		
stop_date	DATE		
project	CHAR		project code
idcode	CHAR		Object or borehole identification code
secup	FLOAT	m	Upper section limit (m)
seclow	FLOAT	m	Lower section limit (m)
section_no	INTEGER	number	Section number
test_type	CHAR		Test type code, one of 7, see table description
formation_type	CHAR		1: Rock, 2: Soil (superficial deposits)
start_flow_period	DATE	yyyymmdd	Date and time start of pumping/injection(YYMMDDhhmmss)
stop_flow_period	DATE	yyyymmdd	Date and time stop of pumping/injection(YYMMDDhhmmss)
test_borehole	CHAR		Idcode of pumped/injected borehole
test_secup	FLOAT	m	Upper limit of pumped/injected section
test_seclow	FLOAT	m	Lower limit of pumped/injected section
lp	FLOAT	m	Hydraulic point of application, see table description
radial_distance_rs	FLOAT	m	Radial distance:test secobs.sec., see table description
shortest_distance_rt	FLOAT	m	Shortest distance: test secobs.sec., see table description
time_lag_press_dtl	FLOAT	s	Time lag, pressure response obs. hole. See table description
initial_head_hi	FLOAT	m	Initial formation hydraulic head, see table description
head_at_flow_end_h	FLOAT	m	Hydraulic head at end of flow phase, see table description
final_head_hf	FLOAT	m	Hydraulic head at end of recovery phase, see table descr.
initial_press_pi	FLOAT	kPa	Initial formation pressure. Actual formation pressure.
press_at_flow_end_p	FLOAT	kPa	Pressure at the end of flow phase, see table descript.
final_press_pf	FLOAT	kPa	Final pressure at the end of recovery phase, see table desc.
fluid_temp_teo	FLOAT	оС	Fluid temperature in formation at observation section
fluid_elcond_eco	FLOAT	mS/m	Fluid electrical conductivity of formation at obs-section
fluid_salinity_tdso	FLOAT	mg/l	Total salinity of section fluid, based on EC see table descr
fluid_salinity_tdsom	FLOAT	mg/l	Tot salinity of section fluid based on sampling,see descr
reference	CHAR	ū	SKB report No for reports describing data and evaluation
comment	CHAR		Short comment to evaluated data.
error_flag	CHAR		If error_flag = "*" then an error occured and an error
in_use	CHAR		If in use = "*" then the activity has been selected as
sign	CHAR		Signature for QA data accknowledge (QA - OK)

KLX07A

	_							,	1	,							
							formation_t			test_bor	_	test_secl	radial_dist shortest_d				inal_hea
idcode	start_date	stop_date	secup	seclow	section_no	test_type	ype	start_flow_period	stop_flow_period	ehole	up	ow lp	ance_rs stance_rt	ress_dtl	ad_hi v	/_end_hp d	l_hf
HLX10	2005.10.28 09:51	2005.11.03 15:53	3.00	85.00	1	2	2	051028 12:34:03	051031 13:20:28	KLX07A	103.20	193.20 84.00	105.46	209	4.51	3.97	5.31
HLX11	2005.10.28 09:51	2005.11.03 15:53			2	2	2	051028 12:34:03		KLX07A	103.20	193.20 15.00	175.11	6321	6.37	5.55	6.57
HLX11	2005.10.28 09:51	2005.11.03 15:53	17.00	70.00	1	2	2	051028 12:34:03	051031 13:20:28	KLX07A	103.20	193.20 35.00	160.20	1521	6.25	5.45	6.39
HLX21	2005.10.28 09:51	2005.11.03 15:53	9.10	80.00	2	2	2	051028 12:34:03	051031 13:20:28	KLX07A	103.20	193.20 67.00	434.21	9379	5.32	5.14	5.40
HLX21	2005.10.28 09:51	2005.11.03 15:53	81.00		1	2		051028 12:34:03			103.20	193.20 67.00	435.74	10924	5.44	5.14	5.40
HLX22	2005.10.28 09:51	2005.11.03 15:53			2	2	2	051028 12:34:03			103.20	193.20 47.00	477.00	13961	3.96	3.79	3.92
HLX22	2005.10.28 09:51	2005.11.03 15:53			1	2	2	051028 12:34:03			103.20	193.20 121.00	467.00	10756	5.32	5.00	5.28
HLX23	2005.10.28 09:51	2005.11.03 15:53			2	2	2	051028 12:34:03			103.20	193.20 49.00	361.12	5740	9.82	9.71	9.84
HLX23	2005.10.28 09:51	2005.11.03 15:53			1	2	2	051028 12:34:03			103.20	193.20 67.00	362.14	7116	10.03	9.97	10.04
HLX24	2005.10.28 09:51	2005.11.03 15:53			1	2	1	051028 12:34:03			103.20	193.20 121.00	368.70	9661	10.03	9.97	10.05
KLX02	2005.10.28 09:51	2005.11.03 15:53			8	2	2	051028 12:34:03			103.20	193.20 205.50	148.53	8571	7.75	7.25	7.96
KLX02	2005.10.28 09:51	2005.11.03 15:53		347.00	7	2		051028 12:34:03			103.20	193.20 278.00	202.22	1731	6.11	5.24	6.21
KLX02	2005.10.28 09:51	2005.11.03 15:53			6			051028 12:34:03			103.20	193.20 399.50	310.17	7891	5.47	5.50	5.84
KLX07B	2005.10.28 09:51	2005.11.03 15:53			3		1	051028 12:34:03			103.20	193.20 24.00	131.35	2050	7.02	6.22	7.32
KLX07B	2005.10.28 09:51	2005.11.03 15:53			2		•	051028 12:34:03			103.20	193.20 80.00	92.93	623	6.73	5.87	7.04
KLX07B	2005.10.28 09:51	2005.11.03 15:53	112.00	200.00	1	2	1	051028 12:34:03	051031 13:20:28	KLX07A	103.20	193.20 156.00	83.50	328	6.66	5.72	6.96
HLX11	2005.11.04 21:35				2	2		051104 22:33:25	051108 07:03:40		335.00	455.00 15.00	333.03	7020	6.37	6.17	6.28
HLX11	2005.11.04 21:35				1	2	2	051104 22:33:25			335.00	455.00 35.00	318.19	2203	6.46	6.26	6.41
HLX21	2005.11.04 21:35			80.00	2	_	2	051104 22:33:25			335.00	455.00 67.00	460.82	#NV	5.27	4.92	5.25
HLX21	2005.11.04 21:35				1	2		051104 22:33:25			335.00	455.00 67.00	451.13	#NV	5.39	5.04	5.37
HLX22	2005.11.04 21:35				2	2	2	051104 22:33:25			335.00	455.00 47.00		#NV	3.92	3.72	3.91
HLX22	2005.11.04 21:35				1	2	2	051104 22:33:25			335.00	455.00 121.00	483.00	#NV	5.27	4.90	5.24
HLX23	2005.11.04 21:35				2	2		051104 22:33:25			335.00	455.00 49.00	438.38	#NV	9.81	9.80	9.83
HLX23	2005.11.04 21:35				1	2	· · · · · ·	051104 22:33:25			335.00	455.00 67.00	429.24	#NV	10.02	10.01	10.04
HLX24	2005.11.04 21:35				1	2		051104 22:33:25			335.00	455.00 121.00	428.99	#NV	10.03	10.02	10.04
KLX02	2005.11.04 21:35				8	2		051104 22:33:25			335.00	455.00 205.50	301.92	#NV	7.70	7.54	7.72
KLX02	2005.11.04 21:35				/	2		051104 22:33:25			335.00	455.00 278.00	293.03	#NV	6.14	5.94	6.12
KLX02	2005.11.04 21:35				6	2		051104 22:33:25			335.00	455.00 399.50	317.84	#NV	5.76	5.70	5.82
KLX07B	2005.11.04 21:35				3	2		051104 22:33:25			335.00	455.00 24.00 455.00 80.00	375.09	1165	6.58	6.45 6.34	6.67 6.55
KLX07B	2005.11.04 21:35			111.00	2	2		051104 22:33:25			335.00		332.03	1852 2238	6.52		6.64
KLX07B	2005.11.04 21:35	2005.11.12 08:36	112.00	200.00	1			051104 22:33:25	051108 07:03:40	KLXU/A	335.00	455.00 156.00	280.96	2238	6.60	6.44	0.04
HLX10	2005.11.12 18:54	2005.11.20 20:17	3.00	95.00		2		051112 19:32:10	051115 15:24:33	KI VOZA	193.00	313.00 84.00	144.23	186	5.30	3.92	5.14
HLX10 HLX11	2005.11.12 18:54				1	2		051112 19:32:10			193.00	313.00 84.00	225.27	3332	6.27	5.40	6.26
HLX11 HLX11	2005.11.12 18:54				1	2		051112 19:32:10			193.00	313.00 15.00	209.12	931	6.32	5.40	6.41
HLX21	2005.11.12 18:54				2	2	;	051112 19:32:10			193.00	313.00 35.00	427.20	#NV	5.24	5.02	5.15
HLX21	2005.11.12 18:54				1	2	,	051112 19:32:10			193.00	313.00 67.00	423.78	#NV	5.37	5.14	5.13
HLX22	2005.11.12 18:54				2	2	,	051112 19:32:10			193.00	313.00 47.00		#NV	3.91	3.79	3.84
HLX22	2005.11.12 18:54				1	2	,	051112 19:32:10			193.00	313.00 121.00	456.00	#NV	5.24	5.00	5.14
HLX23	2005.11.12 18:54					2	,	051112 19:32:10			193.00	313.00 121.00	379.29	#NV	9.82	9.72	9.82
HLX23	2005.11.12 18:54			160.20	1	2	,	051112 19:32:10			193.00	313.00 43.00	375.47	#NV	10.03	9.97	10.02
HLX24	2005.11.12 18:54				1	2		051112 19:32:10			193.00	313.00 07.00	378.97	#NV	10.03	9.98	10.02
KLX02	2005.11.12 18:54			208.00	8	2	,	051112 19:32:10			193.00	313.00 205.50	189.75	1717	7.62	6.96	7.65
KLX02	2005.11.12 18:54				7	2		051112 19:32:10			193.00	313.00 203.30	211.19	557	6.02	5.31	6.09
KLX02	2005.11.12 18:54				,	2		051112 19:32:10			193.00	313.00 276.00	287.87	#NV	5.80	5.68	5.76
KLX0Z KLX07B	2005.11.12 18:54				3			051112 19:32:10			193.00	313.00 393.30	233.32	52	6.34	5.49	6.78
KLX07B	2005.11.12 18:54			111.00	2			051112 19:32:10			193.00	313.00 80.00	191.30	212	6.24	5.42	6.65
KLX07B	2005.11.12 18:54				1	2		051112 19:32:10			193.00	313.00 156.00	149.70	978	6.33	5.54	6.72
	2000.11.12 10.04	2300.11.20 20.17	112.00	200.00	· '		1	001112 10.02.10	001110 10.24.00	LLAUIA	100.00	310.00 100.00	.40.70	370	0.00	0.04	0.72

														-
L							press_at_flo							
idcode	start_date	stop_date	secup	seclow	section_no	ess_pi	w_end_pp	ss_pf	mp_teo	ond_eco	nity_tdso	ty_tdsom	е	comment
HLX10	2005.10.28 09:51	2005.11.03 15:53	3.00	85.00	1									
HLX11	2005.10.28 09:51	2005.11.03 15:53	6.00	16.00	2	!								
HLX11	2005.10.28 09:51	2005.11.03 15:53	17.00	70.00	1									
HLX21	2005.10.28 09:51	2005.11.03 15:53	9.10	80.00	2									
HLX21	2005.10.28 09:51	2005.11.03 15:53	81.00	150.00	1									
HLX22	2005.10.28 09:51	2005.11.03 15:53	9.19	85.00	2	!								
HLX22	2005.10.28 09:51	2005.11.03 15:53	86.00	163.20	1									
HLX23	2005.10.28 09:51	2005.11.03 15:53	6.10	60.00	2	!								
HLX23	2005.10.28 09:51	2005.11.03 15:53	61.00	160.20	1									
HLX24	2005.10.28 09:51	2005.11.03 15:53	41.00	175.20	1									
KLX02	2005.10.28 09:51	2005.11.03 15:53	202.95	208.00	8	8								
KLX02	2005.10.28 09:51	2005.11.03 15:53	209.00	347.00	7									
KLX02	2005.10.28 09:51	2005.11.03 15:53	348.00	451.00	6	6								
KLX07B	2005.10.28 09:51	2005.11.03 15:53	0.00	48.00	3	3								
KLX07B	2005.10.28 09:51	2005.11.03 15:53	49.00	111.00	2									
KLX07B	2005.10.28 09:51	2005.11.03 15:53	112.00	200.00	1									
HLX11	2005.11.04 21:35	2005.11.12 08:36	6.00	16.00	2									
HLX11	2005.11.04 21:35	2005.11.12 08:36	17.00	70.00	1									
HLX21	2005.11.04 21:35	2005.11.12 08:36	9.10	80.00	2									
HLX21	2005.11.04 21:35	2005.11.12 08:36	81.00	150.00	1									
HLX22	2005.11.04 21:35	2005.11.12 08:36	9.19	85.00	2									
HLX22	2005.11.04 21:35	2005.11.12 08:36	86.00	163.20	1									
HLX23	2005.11.04 21:35	2005.11.12 08:36	6.10	60.00	2									
HLX23	2005.11.04 21:35		61.00	160.20	1									
HLX24	2005.11.04 21:35		41.00		1									
KLX02	2005.11.04 21:35	2005.11.12 08:36	202.95	208.00	8									
KLX02	2005.11.04 21:35				7									
KLX02	2005.11.04 21:35					;								
KLX07B	2005.11.04 21:35													
KLX07B	2005.11.04 21:35	2005.11.12 08:36	49.00	111.00	2									
KLX07B	2005.11.04 21:35		112.00		1									
-														
HLX10	2005.11.12 18:54	2005.11.20 20:17	3.00	85.00	1									
HLX11	2005.11.12 18:54		6.00		2									
HLX11	2005.11.12 18:54		17.00		1									
HLX21	2005.11.12 18:54	2005.11.20 20:17	9.10		2									
HLX21	2005.11.12 18:54		81.00		1									
HLX22	2005.11.12 18:54		9.19		2									
HLX22	2005.11.12 18:54		86.00		1									
HLX23	2005.11.12 18:54		6.10		2									
HLX23	2005.11.12 18:54	2005.11.20 20:17	61.00		1									
HLX24	2005.11.12 18:54		41.00		1									
KLX02	2005.11.12 18:54	2005.11.20 20:17	202.95		8									
KLX02	2005.11.12 18:54		209.00		7									$\vdash$
KLX02	2005.11.12 18:54	2005.11.20 20:17	348.00			;								
KLX07B	2005.11.12 18:54	2005.11.20 20:17	0.00		3									$\vdash$
KLX07B	2005.11.12 18:54		49.00		2									$\vdash$
KLX07B	2005.11.12 18:54		112.00		1									$\vdash$

Table		plu_inf_te	est_obs_ed
	1	PLU interference test,Ob	servation section evaluation
Column	Datatype	Unit	Column Description
site	CHAR		Investigation site name
activity_type	CHAR		Activity type code
start_date	DATE		Date (yymmdd hh:mm:ss)
stop_date	DATE		Date (yymmdd hh:mm:ss)
project	CHAR		project code
idcode	CHAR		Object or borehole identification code
secup	FLOAT	m	Upper section limit (m)
seclow	FLOAT	m	Lower section limit (m)
section_no	INTEGER	number	Section number
test_borehole	CHAR		Idcode of pumped/injected borehole
test_secup	FLOAT	m	Upper limit of pumped/injected section
test_seclow	FLOAT	m	Lower limit of pumped/injected section
formation_width_b	FLOAT	m	b:interpreted formation thickness repr. for evaluated T/B
width_of_channel_b	FLOAT	m	B:Interpreted width of formation with evaluated TB
tbo	FLOAT	m**3/s	TBo,T=transmissivity,B= width of formation, see table descr.
I_meas_limit_tb	FLOAT	m**3/s	Estimated lower limit for evaluated TB, see table descript.
u_meas_limit_tb	FLOAT	m**3/s	Estimated upper limit for evaluated TB,see table descript.
sbo	FLOAT	m	SBo;S=storativity,B=width of formation,see table description
leakage_factor_lfo	FLOAT	m	Lfo: 1D model for evaluation of leakage factor
transmissivity_tto	FLOAT	m**2/s	TTo=transmissivity, 2D model, see table description
value_type_tto	CHAR		0:true value (TTo),-1: <lower meas.limit,1:="">upper meaus.limit</lower>
I_meas_limit_t	FLOAT	m**2/s	Estimated lower limit for evaluated TTO,see table descript.
u_meas_limit_t	FLOAT	m**2/s	Estimated upper limit of evaluated TTo, see table description
storativity_so	FLOAT		S:2D model for evaluation of storativity, see table descr.
leakage_coeff_o	FLOAT	1/s	K'/b':2D model evaluation of leakage coefficient, see descr.
hydr_kond_kso	FLOAT	m**2/s	3Dmodel evaluation of hydraulic conductivity, see table desc.
l_meas_limit_ks	FLOAT	m**2/s	Estimated lowermeas. limit of Ks,see table description
u_meas_limit_ks	FLOAT	m**2/s	Estimated upper meas. limit of Ks,see table description
spec_storage_sso	FLOAT	1/m	3Dmodel for evaluation of specific storage, se table descr.
dt1	FLOAT	S	Estimated start time of evaluation, see table description
dt2	FLOAT	s	Estimated stop time of evaluation, see table description
comments	CHAR		short comment to the evaluated parameters(0ptional)
error_flag	CHAR		If error flag = "*" then an error occured and an error
in_use	CHAR		If in_use = "*" then the activity has been selected as
sign	CHAR		Signature for QA data acknowledge (QA - OK)

	_			1	1				1		1	1	1		1		1	
					test_bore		_	formation				II .	leakage_f				u_meas_li	,
idcode	start_date	stop_date	secup	seclow	section_no e	test_secup		_width_b	hannel_b	tbo mit_tb	imit_tb	sbo	actor_lfo	ivity_tto	pe_tto	mit_t	mit_t	_so
HLX10	2005.10.28 09:51	2005.11.03 15:53		85.00	1 KLX07A	103.20								1.39E-0		6.00E-05		
HLX11	2005.10.28 09:51	2005.11.03 15:53		16.00	2 KLX07A	103.20								1.38E-0		8.00E-05		
HLX11	2005.10.28 09:51	2005.11.03 15:53		70.00	1 KLX07A	103.20								2.05E-04		8.00E-05		
HLX21	2005.10.28 09:51	2005.11.03 15:53		80.00	2 KLX07A	103.20								3.88E-0	-	1.00E-04		
HLX21	2005.10.28 09:51	2005.11.03 15:53		150.00	1 KLX07A	103.20								3.96E-0		1.00E-04		
HLX22	2005.10.28 09:51	2005.11.03 15:53		85.00	2 KLX07A	103.20								6.84E-0	-	4.00E-04		
HLX22	2005.10.28 09:51	2005.11.03 15:53	86.00	163.20	1 KLX07A	103.20								3.78E-0	4 0	1.00E-04		
HLX23	2005.10.28 09:51	2005.11.03 15:53	6.10	60.00	2 KLX07A	103.20	193.20							1.63E-03	3 0	9.00E-04		
HLX23	2005.10.28 09:51	2005.11.03 15:53		160.20	1 KLX07A	103.20								2.64E-03		1.00E-03		
HLX24	2005.10.28 09:51	2005.11.03 15:53	41.00	175.20	1 KLX07A	103.20	193.20							2.16E-0	3 0	1.00E-03	5.00E-03	6.25E-04
KLX02	2005.10.28 09:51	2005.11.03 15:53		208.00	8 KLX07A	103.20								2.44E-0		1.00E-04		
KLX02	2005.10.28 09:51	2005.11.03 15:53		347.00	7 KLX07A	103.20								2.34E-0	-	8.00E-05		
KLX02	2005.10.28 09:51	2005.11.03 15:53		451.00	6 KLX07A	103.20								6.91E-0	-	2.00E-04		
KLX07B	2005.10.28 09:51	2005.11.03 15:53		48.00	3 KLX07A	103.20	193.20							1.40E-0	4 0	1.00E-04		
KLX07B	2005.10.28 09:51	2005.11.03 15:53	49.00	111.00	2 KLX07A	103.20								1.69E-0	4 0	9.00E-05		
KLX07B	2005.10.28 09:51	2005.11.03 15:53	112.00	200.00	1 KLX07A	103.20	193.20							1.38E-0	4 0	9.00E-05	4.00E-04	2.35E-04
HLX11	2005.11.04 21:35	2005.11.12 08:36		16.00	2 KLX07A	335.00	455.00							1.76E-0	-	8.00E-05		
HLX11	2005.11.04 21:35			70.00	1 KLX07A	335.00								1.85E-0	-	8.00E-05		
HLX21	2005.11.04 21:35			80.00	2 KLX07A	335.00								2.19E-0	-	7.00E-05		
HLX21	2005.11.04 21:35	2005.11.12 08:36	81.00	150.00	1 KLX07A	335.00	455.00							1.48E-0	4 0	8.00E-05		5.34E-05
HLX22	2005.11.04 21:35	2005.11.12 08:36	9.19	85.00	2 KLX07A	335.00	455.00							2.20E-0	4 0	7.00E-05	5.00E-04	9.49E-05
HLX22	2005.11.04 21:35			163.20	1 KLX07A	335.00								1.74E-0	4 0	7.00E-05		
HLX23	2005.11.04 21:35			60.00	2 KLX07A	335.00									0	6.00E-04		
HLX23	2005.11.04 21:35			160.20	1 KLX07A	335.00	455.00								0	5.00E-04		
HLX24	2005.11.04 21:35			175.20	1 KLX07A	335.00									0	6.00E-04		
KLX02	2005.11.04 21:35				8 KLX07A	335.00								3.47E-0	-	8.00E-05		
KLX02	2005.11.04 21:35	2005.11.12 08:36	209.00	347.00	7 KLX07A	335.00	455.00							2.69E-0	4 0	7.00E-05		
KLX02	2005.11.04 21:35		348.00	451.00	6 KLX07A	335.00	455.00								0	2.00E-04		
KLX07B	2005.11.04 21:35			48.00	3 KLX07A	335.00								2.88E-0		8.00E-05		
KLX07B	2005.11.04 21:35			111.00	2 KLX07A	335.00								2.61E-0	-	8.00E-05		
KLX07B	2005.11.04 21:35	2005.11.12 08:36	112.00	200.00	1 KLX07A	335.00	455.00							2.33E-0	4 0	8.00E-05	6.00E-04	4.50E-05
HLX10	2005.11.12 18:54			85.00	1 KLX07A	193.00								1.81E-0	-	6.00E-05		
HLX11	2005.11.12 18:54			16.00	2 KLX07A	193.00								1.10E-0		9.00E-05		
HLX11	2005.11.12 18:54	2005.11.20 20:17		70.00	1 KLX07A	193.00								1.59E-0		9.00E-05		
HLX21	2005.11.12 18:54			80.00	2 KLX07A	193.00	313.00							3.88E-0	-	8.00E-05		
HLX21	2005.11.12 18:54	2005.11.20 20:17		150.00	1 KLX07A	193.00	313.00							3.51E-0		8.00E-05		
HLX22	2005.11.12 18:54			85.00	2 KLX07A	193.00								1.20E-0		7.00E-04		
HLX22	2005.11.12 18:54	2005.11.20 20:17		163.20	1 KLX07A	193.00	313.00							9.12E-0	-	3.00E-04		
HLX23	2005.11.12 18:54	2005.11.20 20:17		60.00	2 KLX07A	193.00								2.85E-0		7.00E-04		
HLX23	2005.11.12 18:54	2005.11.20 20:17		160.20	1 KLX07A	193.00								2.82E-0		8.00E-04		
HLX24	2005.11.12 18:54			175.20	1 KLX07A	193.00	313.00		1	1 1	1			1.59E-0		7.00E-04		
KLX02	2005.11.12 18:54	2005.11.20 20:17		208.00	8 KLX07A	193.00			1	1 1	1			1.72E-0		9.00E-05		
KLX02	2005.11.12 18:54			347.00	7 KLX07A	193.00			1	1 1	1			2.40E-0	-	9.00E-05		
KLX02	2005.11.12 18:54	2005.11.20 20:17		451.00	6 KLX07A	193.00			1	1 1	1			1.01E-0		6.00E-04		
KLX07B	2005.11.12 18:54	2005.11.20 20:17		48.00	3 KLX07A	193.00								2.15E-0	-	9.00E-05		
KLX07B	2005.11.12 18:54	2005.11.20 20:17	49.00	111.00	2 KLX07A	193.00								1.49E-0	-	9.00E-05		
KLX07B	2005.11.12 18:54	2005.11.20 20:17	112.00	200.00	1 KLX07A	193.00	313.00							1.16E-0	4 0	9.00E-05	4.00E-04	6.13E-05

						Terret transfer	ı		laakass	T	T		llaman str			
idaada	atout data	oton doto		and au	acation no	test_borehole		test_secl	coeff o	hydr_ko			I spec_sto	444	dt2	comment
idcode		stop_date	secup	seclow	section_no	,	test_secup	1		nd_kso	mit_ks	imit_ks	rage_sso			S
HLX10	2005.10.28 09:51					1 KLX07A	103.20							1074	4020	
HLX11	2005.10.28 09:51					2 KLX07A	103.20							1788	2718	
HLX11	2005.10.28 09:51	2005.11.03 15:53				1 KLX07A	103.20							858	2952	
HLX21	2005.10.28 09:51	2005.11.03 15:53				2 KLX07A	103.20							1548	4122	
HLX21	2005.10.28 09:51	2005.11.03 15:53				1 KLX07A	103.20							2238	3984	
HLX22	2005.10.28 09:51	2005.11.03 15:53	9.19			2 KLX07A	103.20							2352	3996	
HLX22	2005.10.28 09:51	2005.11.03 15:53				1 KLX07A	103.20							1536	3996	
HLX23	2005.10.28 09:51	2005.11.03 15:53				2 KLX07A	103.20							894	3708	
HLX23	2005.10.28 09:51	2005.11.03 15:53		160.20		1 KLX07A	103.20							1548	3984	
HLX24	2005.10.28 09:51	2005.11.03 15:53	41.00	175.20		1 KLX07A	103.20							1872	3912	
KLX02	2005.10.28 09:51	2005.11.03 15:53		208.00		KLX07A	103.20							1008	2340	
KLX02	2005.10.28 09:51	2005.11.03 15:53				7 KLX07A	103.20							1242	4038	
KLX02	2005.10.28 09:51	2005.11.03 15:53				6 KLX07A	103.20							1506	4002	
KLX07B	2005.10.28 09:51	2005.11.03 15:53				3 KLX07A	103.20							1038	3810	
KLX07B	2005.10.28 09:51	2005.11.03 15:53				2 KLX07A	103.20							#NV	#NV	
KLX07B	2005.10.28 09:51	2005.11.03 15:53	112.00	200.00		1 KLX07A	103.20	193.20	)					144	366	
HLX11	2005.11.04 21:35	2005.11.12 08:36	6.00	16.00	2	2 KLX07A	335.00	455.00	)					3228	4110	
HLX11	2005.11.04 21:35	2005.11.12 08:36	17.00	70.00		1 KLX07A	335.00	455.00	)					#NV	#NV	
HLX21	2005.11.04 21:35	2005.11.12 08:36	9.10	80.00	2	2 KLX07A	335.00	455.00	)					3072	4020	
HLX21	2005.11.04 21:35	2005.11.12 08:36	81.00	150.00		1 KLX07A	335.00	455.00	)					2016	4050	
HLX22	2005.11.04 21:35	2005.11.12 08:36	9.19	85.00	2	2 KLX07A	335.00	455.00	)					3114	4050	
HLX22	2005.11.04 21:35	2005.11.12 08:36	86.00	163.20		1 KLX07A	335.00	455.00	)					2466	4590	
HLX23	2005.11.04 21:35	2005.11.12 08:36	6.10	60.00	2	2 KLX07A	335.00	455.00	)							
HLX23	2005.11.04 21:35	2005.11.12 08:36	61.00	160.20		1 KLX07A	335.00	455.00	)							
HLX24	2005.11.04 21:35	2005.11.12 08:36	41.00	175.20		1 KLX07A	335.00	455.00	)							
KLX02	2005.11.04 21:35	2005.11.12 08:36	202.95	208.00	8	KLX07A	335.00	455.00	)					2418	3804	
KLX02	2005.11.04 21:35	2005.11.12 08:36	209.00	347.00		7 KLX07A	335.00	455.00	)					2550	3918	
KLX02	2005.11.04 21:35	2005.11.12 08:36	348.00	451.00	(	6 KLX07A	335.00	455.00	)							
KLX07B	2005.11.04 21:35	2005.11.12 08:36	0.00	48.00	;	3 KLX07A	335.00	455.00	)					156	306	
KLX07B	2005.11.04 21:35	2005.11.12 08:36	49.00	111.00	2	2 KLX07A	335.00	455.00	)					169	296	
KLX07B	2005.11.04 21:35	2005.11.12 08:36	112.00	200.00		1 KLX07A	335.00	455.00	)					252	354	
HLX10	2005.11.12 18:54	2005.11.20 20:17	3.00	85.00		1 KLX07A	193.00	313.00	)					162	3384	
HLX11	2005.11.12 18:54	2005.11.20 20:17	6.00	16.00	2	2 KLX07A	193.00	313.00	)					1182	1920	
HLX11	2005.11.12 18:54	2005.11.20 20:17	17.00	70.00		1 KLX07A	193.00	313.00	)					1212	4020	
HLX21	2005.11.12 18:54	2005.11.20 20:17	9.10	80.00	2	2 KLX07A	193.00	313.00	)					#NV	#NV	
HLX21	2005.11.12 18:54	2005.11.20 20:17	81.00	150.00		1 KLX07A	193.00	313.00	)					#NV	#NV	
HLX22	2005.11.12 18:54	2005.11.20 20:17	9.19	85.00	2	2 KLX07A	193.00	313.00	)					#NV	#NV	
HLX22	2005.11.12 18:54			163.20		1 KLX07A	193.00	313.00	)					#NV	#NV	
HLX23	2005.11.12 18:54					2 KLX07A	193.00							#NV	#NV	
HLX23	2005.11.12 18:54			160.20		1 KLX07A	193.00	313.00	)					#NV	#NV	
HLX24	2005.11.12 18:54					1 KLX07A	193.00							#NV	#NV	
KLX02	2005.11.12 18:54			208.00		3 KLX07A	193.00			1			1	2064	3708	
KLX02	2005.11.12 18:54					7 KLX07A	193.00							990	2400	
KLX02	2005.11.12 18:54					KLX07A	193.00							#NV	#NV	
KLX07B	2005.11.12 18:54			48.00		3 KLX07A	193.00							246	2964	
KLX07B	2005.11.12 18:54					2 KLX07A	193.00							192	3372	
KLX07B	2005.11.12 18:54					1 KLX07A	193.00							510	3378	