STATOIL A/S

SPECIAL CORE ANALYSIS

WELL: 15/9-18

JULY 1984

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GEOPHYSICAL COMPANY
OF NORWAY A·S

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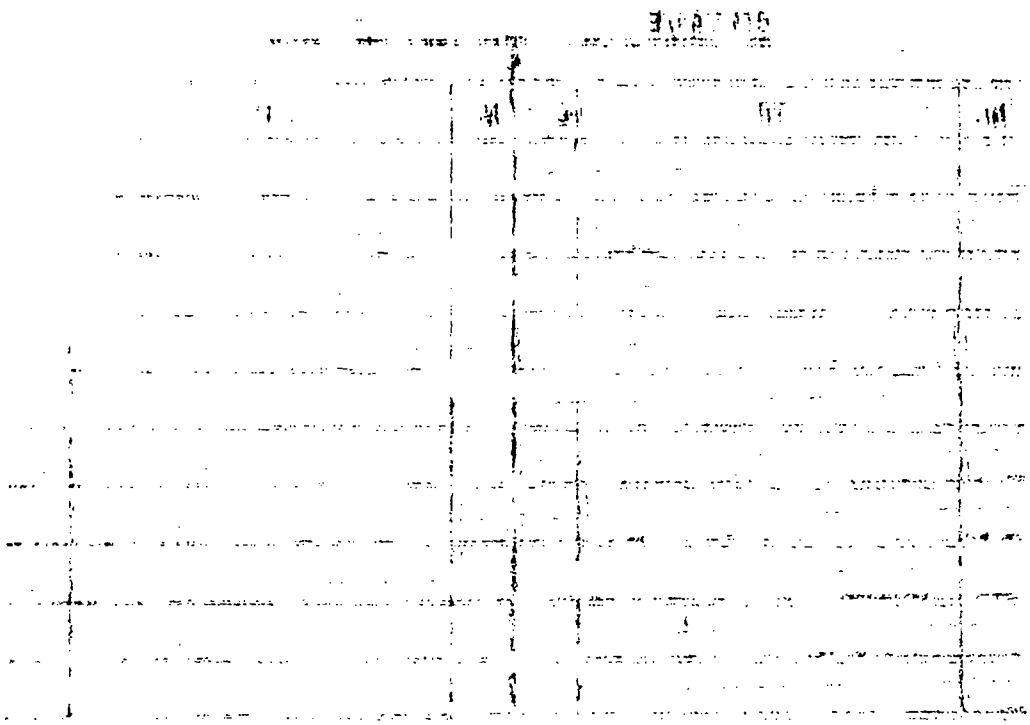

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COMMENTS

GENERAL: Special core analysis were requested by Statoil on 7 plug samples from well 15/9-18. The samples were cylindrical plugs of 1½ inch diameter. All samples were fairly well consolidated.

PREPARATION: The plugs were cut to lengths of approximately seven cm. They were cleaned by extraction using first methanol, then toluene and finally with methanol. Prior to the analyses, the plugs were dried at 60°C and 40% relative humidity under controlled conditions.

MEASUREMENTS: POROSITY AND GRAIN DENSITY

Grain volume was measured by Boyles law porosimeter using helium. Bulk volume was obtained by mercury displacement. Knowing also the weight of the sample, porosity and grain density were calculated on all samples.

AIR PERMEABILITY

All samples were installed in a Hassler holder for air permeability measurements. The sleeve pressure used was 15 bar. Air permeability was measured using N_2 gas at four different pressures. These values were the basis for calculating the Klinkenberg corrected permeability. Both tabular and graphic compilations of data have been enclosed in this report.

FORMATION RESISTIVITY FACTOR

The plugs were saturated as close as possible to 100% by using first vacuum and then injecting formation water into a desiccator which contained the samples. They were afterwards exposed to a pressure of 50 bar to ensure good saturation. Formation resistivity factor was then measured using a frequency of 1 kHz. Formation factor was measured at atmospheric pressure. The parameters "a" and "m" in Archies formula were calculated both by least squares method forced through (FF=1.0, ϕ=1.0) and least squares method with free fit.

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Archies formula $$FF = \frac{r_o}{r_w} = a \cdot \phi^{-m}$$

r_o = resistivity of sample (100% saturated)

r_w = resistivity of saturating formation water

a = FF-value at fractional porosity of 1.0

ϕ = fractional porosity

m = cementation factor

The data sets and the calculated values are presented in tabular and graphical form.

CAPILLARY PRESSURE (AIR/WATER) - RESISTIVITY INDEX

4 water saturated samples were subsequently placed in a porous plate cell and desaturated by water saturated air at eight different pressure levels up to 12 bar. The pressures were 0.1, 0.2, 0.3, 0.5, 0.8, 2.0, 5.0 and 12 bar.

Stability time at each pressure level varied from four to five days. The different water saturations were determined by the weight of the sample.

At each pressure step the resistivity index was measured using a frequency of 1 kHz. The resistivity index equation has been evaluated by least squares method forced through (RI=1.0, S_w=1.0).

$$RI = b \cdot S_w^{-n}$$

b = intercept $S_w = 1$

S_w = water saturation in fraction of pore space

n = saturation exponent

The forced fit curve is presented graphically.

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CONFINING PRESSURE MEASUREMENTS

While installed in a triaxial cell 4 of the samples were measured for confining pressure data. Permeability, porosity and formation resistivity factor were measured simultaneously at increasing pressure levels. The "atmospheric" pressure was set to 15 bar to avoid leakage along the sleeve and the plug. The confining pressure levels were as follows: 15 bar, 25 bar, 50 bar, 100 bar, 135 bar, 175 bar and 250 bar.

a) Permeability

Liquid permeability was measured by pumping degassed simulated formation water through the plugs at a constant rate until a stable flow was achieved. Pressure transducers measured the pressure difference, Δp.

b) Porosity

In these measurements it has been assumed that the sample porosities were preserved at 15 bar confining pressure ("atmospheric" condition). Pore pressure was kept at one atmosphere.

A graduated pipette (vol. 1.0 ml, grad. 0.01 ml) was used to measure pore volume reduction when increasing the confining pressure and to note when stability in the sample occured.

c) Formation Resistivity Factor (FF)

The formation resistivity factor was measured using a frequency of 1 kHz. A platinum screen was placed at each end of the plug to ensure good electrical contact over the end of the plug. The parameters "a" and "m" in Archies formula $FF = a \cdot \phi^{-m}$ were calculated both by least squares method forced through ($FF = 1.0$, $\phi = 1.0$) and least squares method (free fit).

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FLUID PROPERTIES

FORMATION WATER

The formation water was made from chlorides of Na, K, Mg and Ca according to this list:

Na^+	:	41 300	ppm
K^+	:	1 470	ppm
Mg^{2+}	:	1 380	ppm
Ca^{2+}	:	4 750	ppm
Cl^+	:	77 523	ppm

Resistivity (20 °C)	:	0.065	ohm-m
Density (20 °C)	:	1.090	g/cm^3
Viscosity (20 °C)	:	1.272	cP

NITROGEN GAS

Viscosity (20 °C)	:	0.0176	cP

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PLUG SIZE

Sample no.	Depth (m)	Length (cm)	Diameter (cm)
42.1	3236.05	6.78	3.76
45.1	3237.05	7.02	3.76
48.1	3238.05	6.81	3.76
51.1	3239.05	6.88	3.76
62.1	3245.25	7.06	3.76
80.1	3252.05	6.76	3.74
111.1	3263.05	6.75	3.76

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POROSITY AND GRAIN DENSITY

Sample no.	Depth (m)	Porosity (%)	Grain Density(g/cm^3)
42.1	3236.05	21.1	2.64
45.1	3237.05	20.8	2.62
48.1	3238.05	18.6	2.61
51.1	3239.05	21.2	2.63
62.1	3245.25	18.4	2.66
80.1	3252.05	24.6	2.64
111.1	3263.05	23.7	2.64

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KLINKENBERG CORRECTED AIR PERMEABILITY

Sample no.	Depth (m)	(Mean pressure)$^{-1}$ (atm.abs.)$^{-1}$	Air permeability k_a (mD)	Klinkenberg corr. permeability k_{el} (mD)
42.1	3236.05	0.856	351	334
		0.740	349	
		0.639	347	
		0.485	344	
45.1	3237.05	0.831	182	170
		0.743	180	
		0.628	179	
		0.477	177	
48.1	3238.05	0.839	130	121
		0.742	129	
		0.621	128	
		0.479	126	
51.1	3239.05	0.860	551	542
		0.755	550	
		0.644	549	
		0.486	547	
62.1	3245.25	0.823	164	152
		0.739	163	
		0.618	161	
		0.475	159	
80.1	3252.05	0.865	1131	1072
		0.777	1127	
		0.646	1117	
		0.492	1106	
111.1	3263.05	0.846	491	468
		0.756	489	
		0.640	486	
		0.485	481	

KLINKENBERG CORRECTED AIR PERMEABILITY

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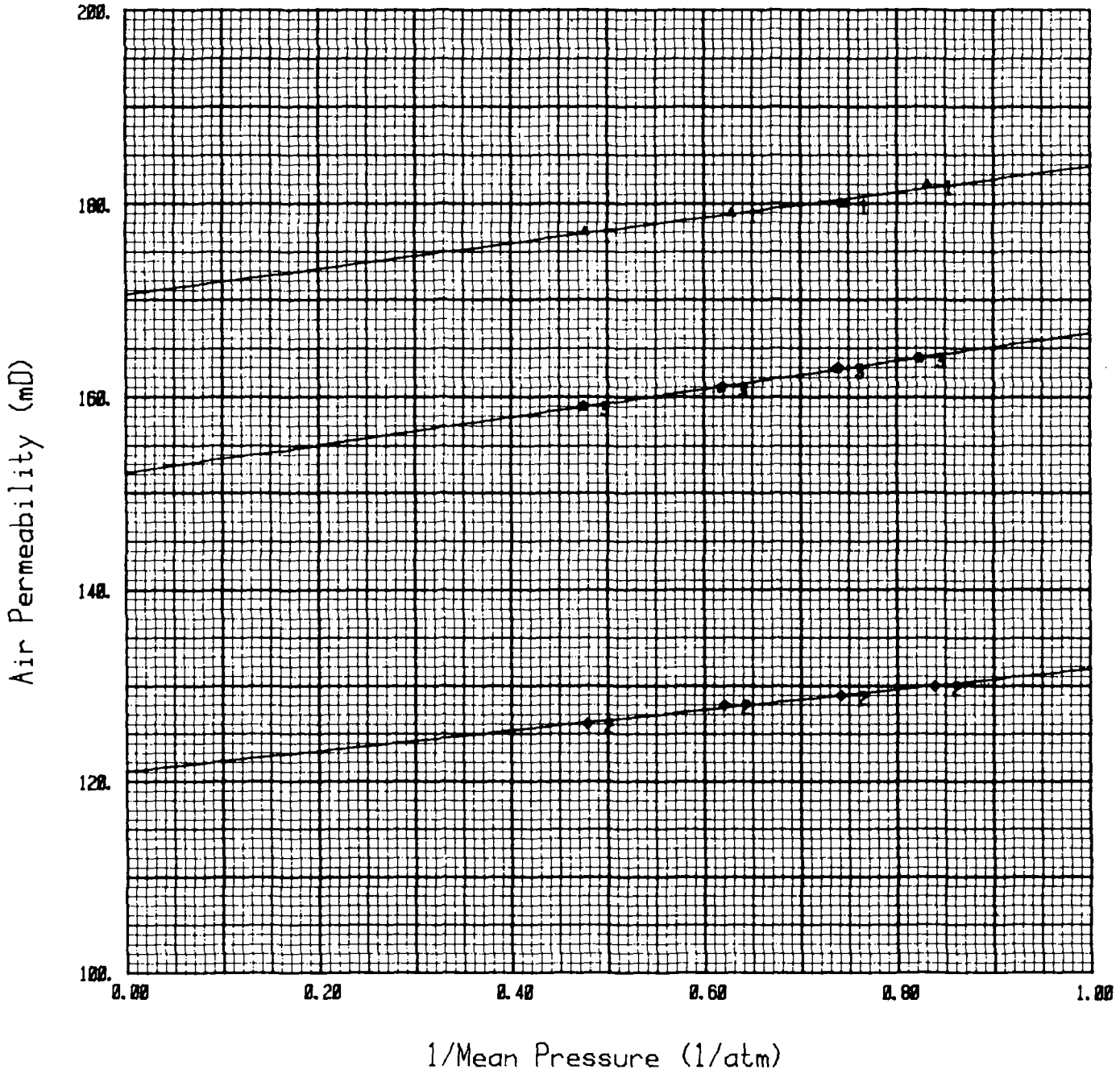
Petroleum laboratory

Curve no 1 : Sample no : 45.1
Depth : 3237.05 m
Klink. perm.: 170. mD

Curve no 2 : Sample no : 48.1
Depth : 3238.05 m
Klink. perm.: 121. mD

Curve no 3 : Sample no : 62.1
Depth : 3245.25 m
Klink. perm.: 152. mD



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KLINKENBERG CORRECTED AIR PERMEABILITY

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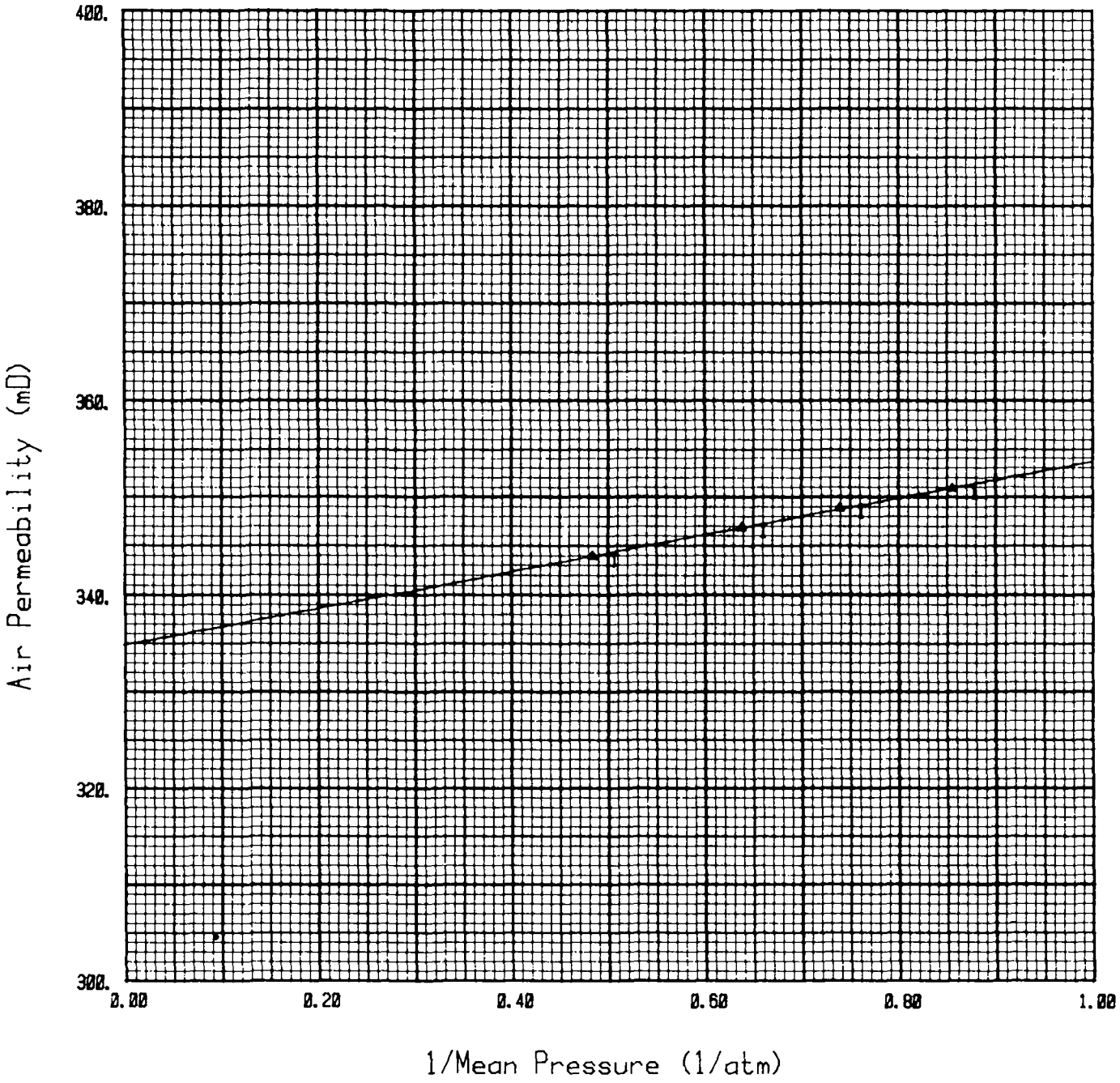
Curve no 1 : Sample no : 42.1
Depth : 3236.05 m
Klink. perm.: 334. mD



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KLINKENBERG CORRECTED AIR PERMEABILITY

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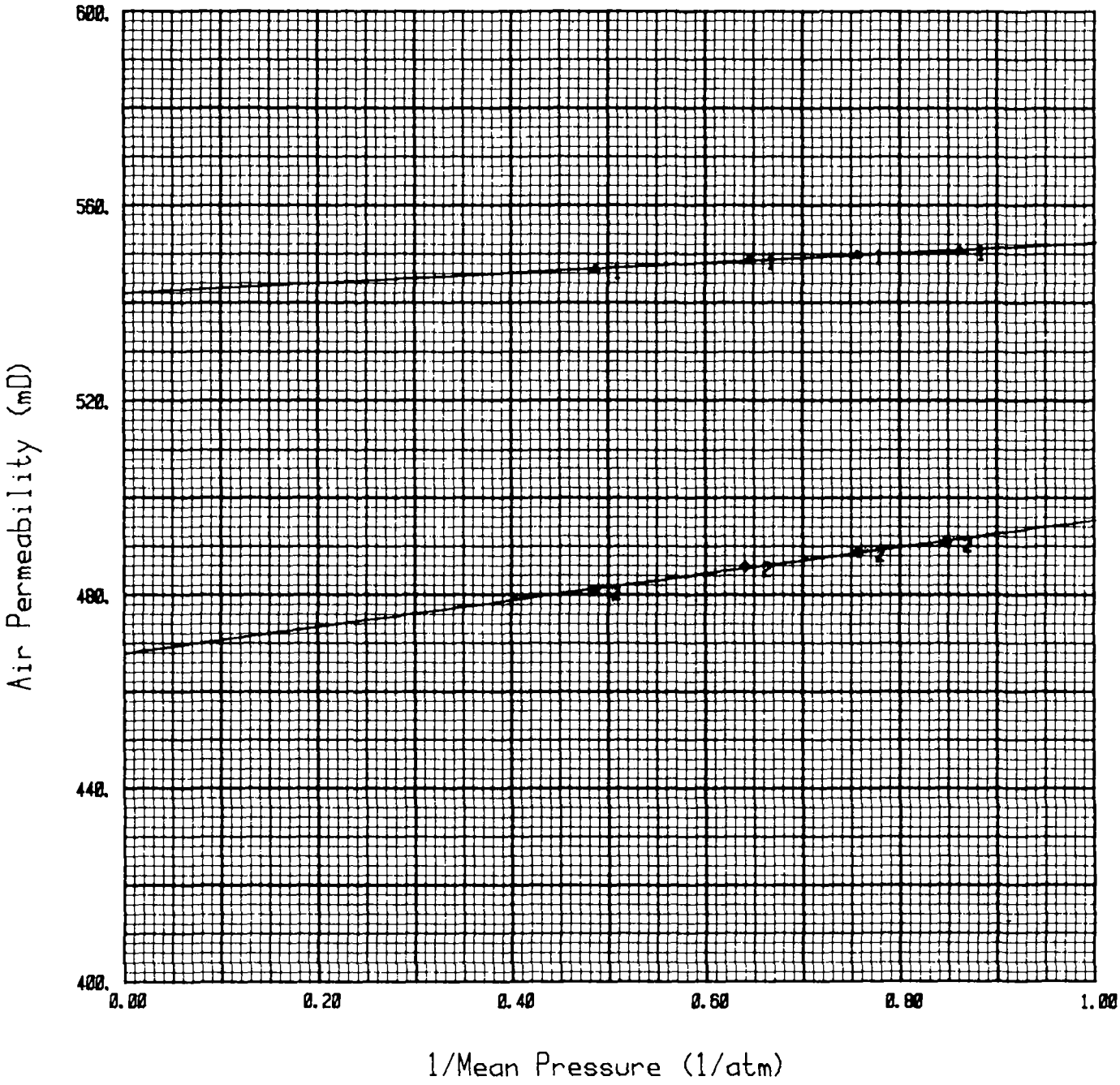
Curve no 1 : Sample no : 51.1
Depth : 3239.05 m
Klink. perm.: 542. mD

Curve no 2 : Sample no : 111.1
Depth : 3263.05 m
Klink. perm.: 468. mD



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KLINKENBERG CORRECTED AIR PERMEABILITY

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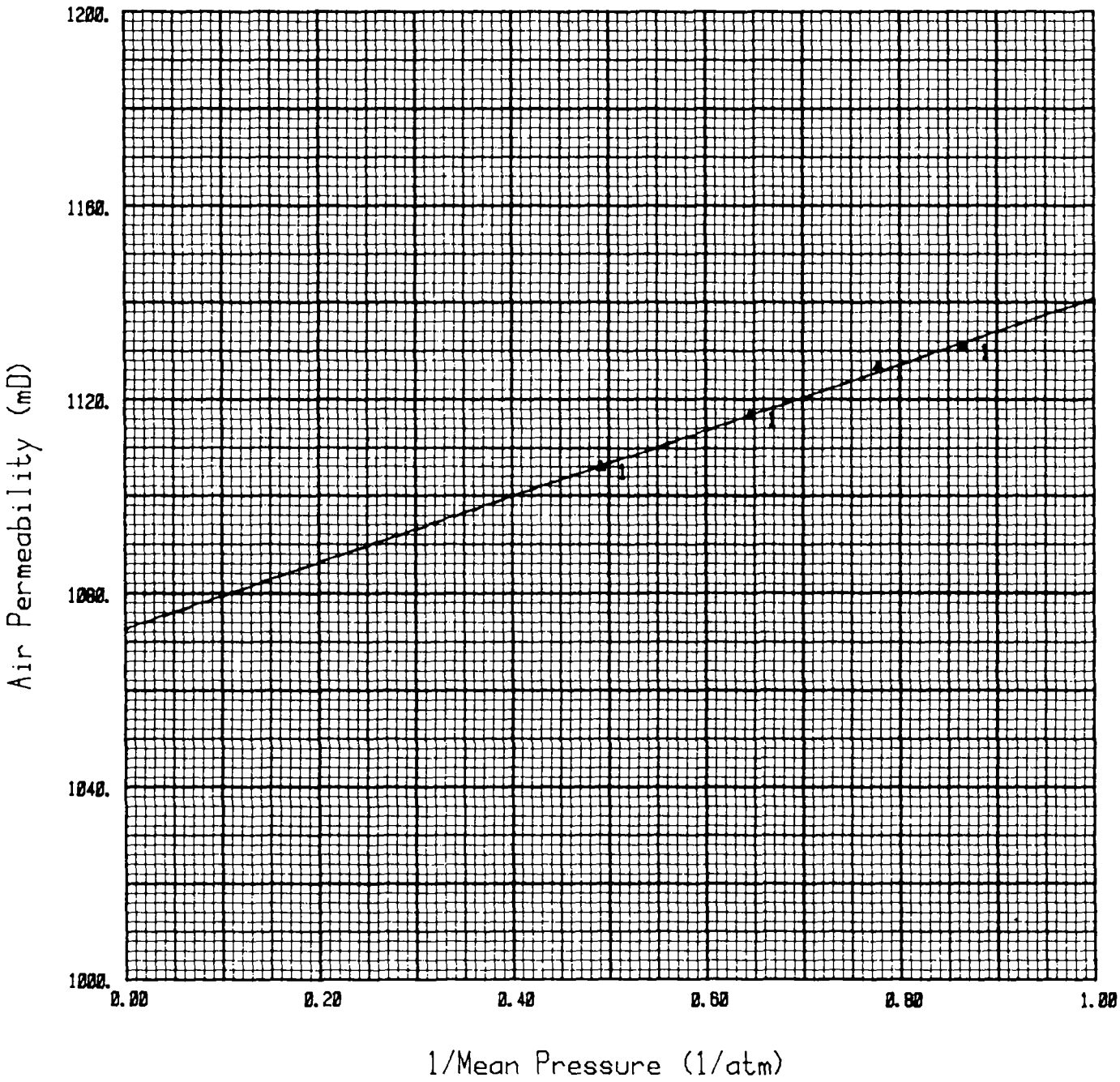
Curve no 1 : Sample no : 80.1
Depth : 3252.05 m
Klink. perm.: 1072. mD



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KLINKENBERG PERMEABILITY VS. POROSITY

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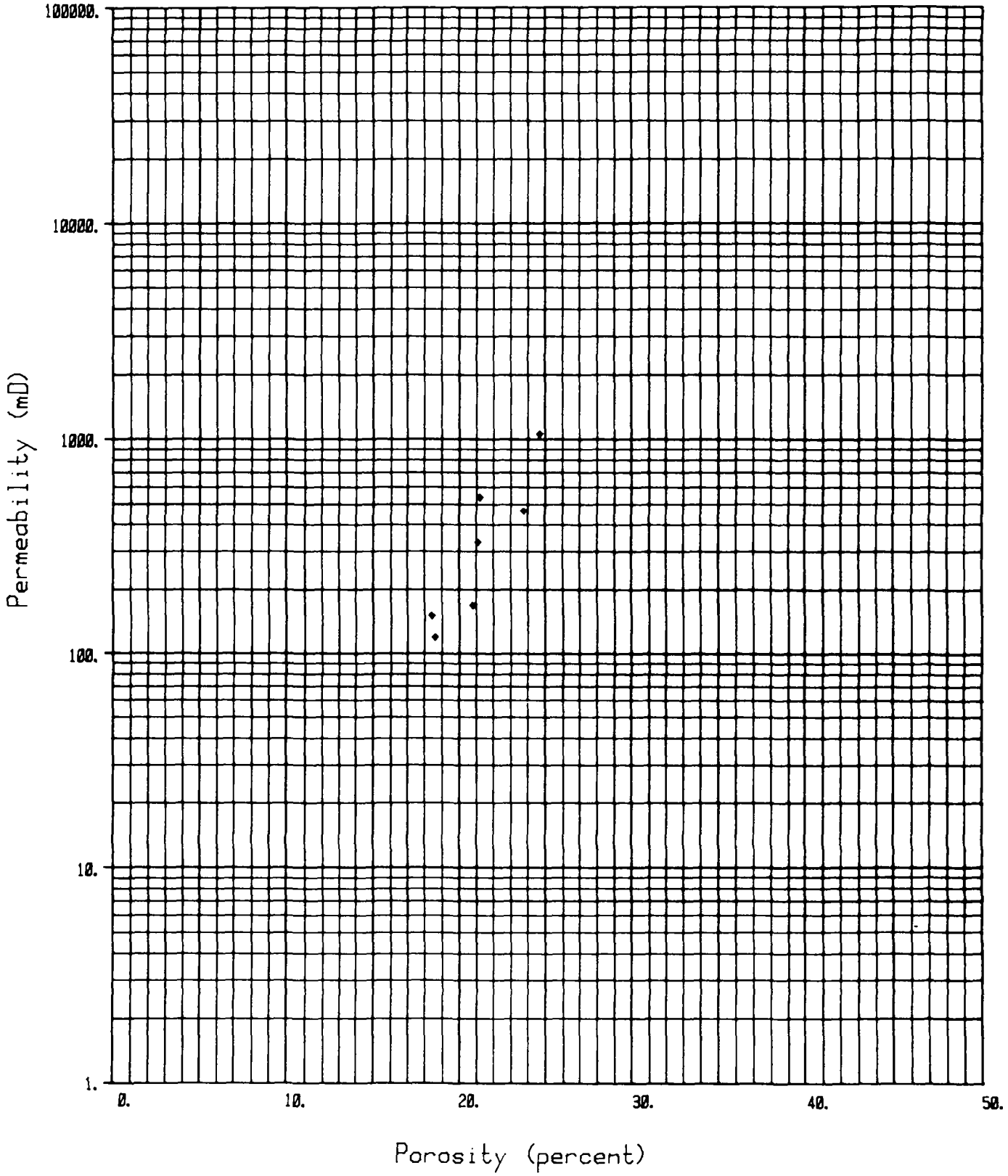
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18



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FORMATION RESISTIVITY FACTOR / FRACTIONAL POROSITY

Sample no.	Depth (m)	FF	Frac. porosity
42.1	3236.05	19.0	0.211
45.1	3237.05	20.1	0.208
48.1	3238.05	21.5	0.186
51.1	3239.05	18.9	0.212
62.1	3245.25	21.1	0.184
80.1	3252.05	13.0	0.246
111.1	3263.05	13.8	0.237

Forced fit : $FF = \phi^{-1.85}$

Free fit : $FF = 1.16\ \phi^{-1.76}$

FORMATION RESISTIVITY FACTOR VERSUS POROSITY

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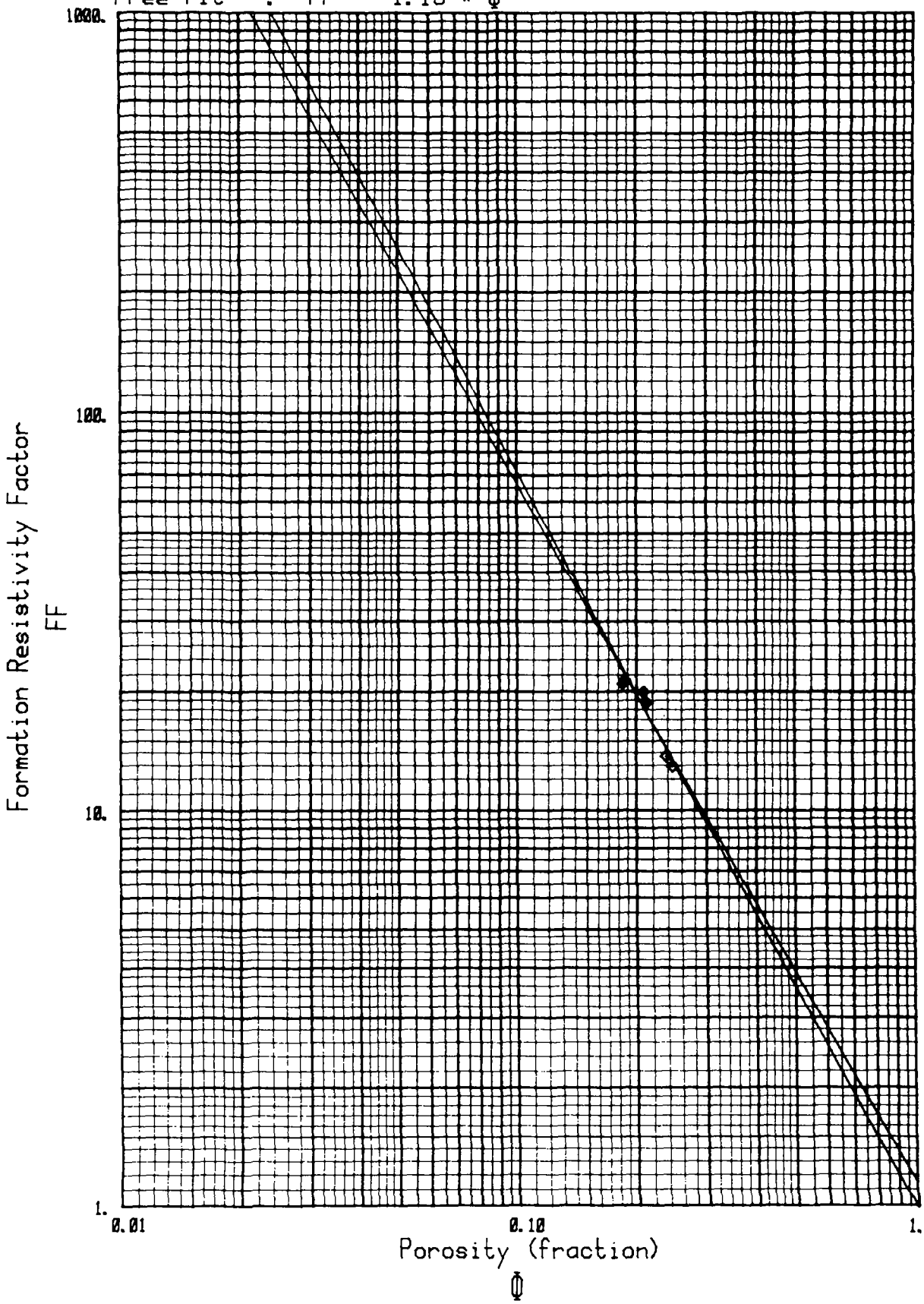
Company : STATOIL A/S
Well : 15/9-18
Atmospheric condition.
Forced fit : $FF = 1.00 * \Phi^{-1.85}$
Free fit : $FF = 1.16 * \Phi^{-1.78}$



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CAPILLARY PRESSURE - RESISTIVITY INDEX

Sample no.: 42.1 Depth: 3236.05 m

Klink. perm.: 334 mD Porosity: 21.1 % Grain density: 2.64 g/cm^3

FF= 19.0 (room conditions)

Capillary pressure (bar)	Water saturation S_w (frac.)	Resistivity index RI
0.0	1.00	1.00
0.1	0.608	2.76
0.2	0.433	5.89
0.3	0.362	9.00
0.5	0.288	15.9
0.8	0.258	22.3
2.0	0.240	24.7
5.0	0.232	27.9
12.0	0.220	29.0

$$RI = S_w^{-2.23}$$

CAPILLARY PRESSURE (POROUS PLATE)

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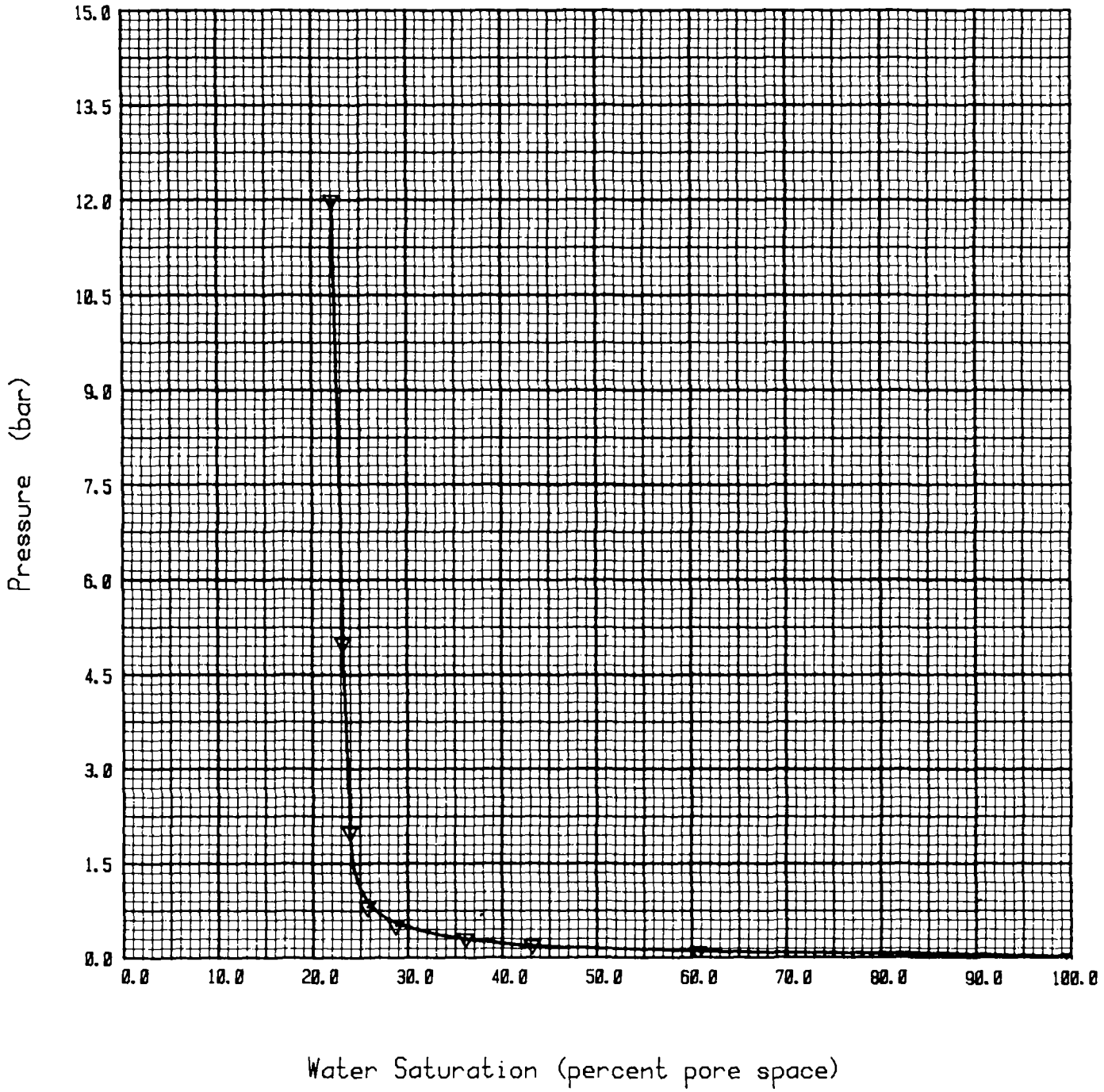
Company : STATOIL A/S

Well : 15/9-18 Klink. perm.: 334 mD

Sample no : 42.1 Porosity : 21.1 %

Depth (m) : 3236.05 Grain dens. : 2.64 g/cm^3



RESISTIVITY INDEX VS. WATER SATURATION

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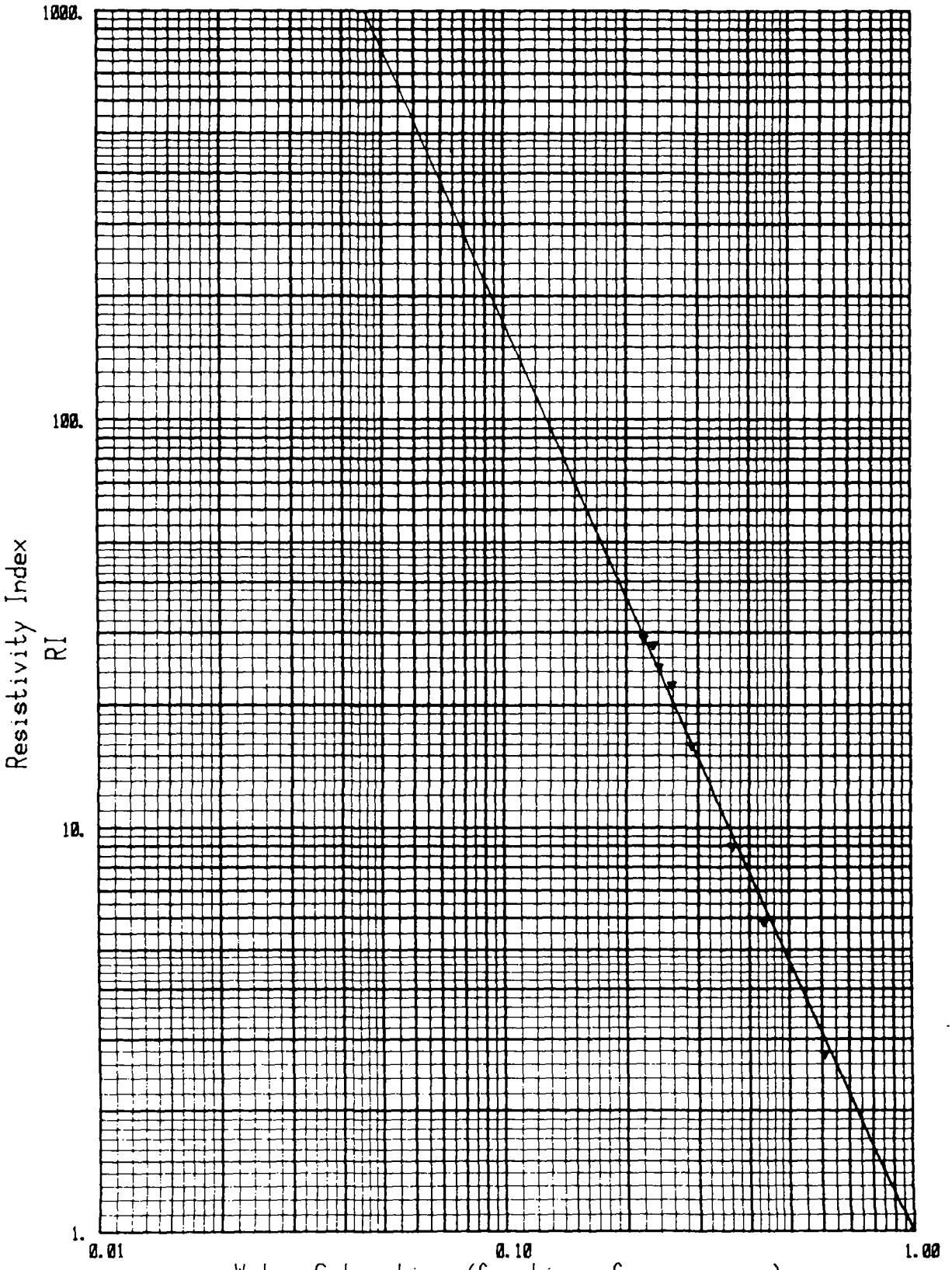
Sample no: 42.1
Depth : 3236.05 m
RI = 1.00 * $S_w^{-2.23}$

Klink. perm.: 334 mD
Porosity : 21.1 %
FF : 19.0



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CAPILLARY PRESSURE - RESISTIVITY INDEX

Sample no.: 45.1 Depth: 3237.05 m

Klink. perm.: 170 mD Porosity: 20.8 % Grain density: 2.62 g/cm^3

FF= 20.1 (room conditions)

Capillary pressure (bar)	Water saturation S_w (frac.)	Resistivity index RI
0.0	1.00	1.00
0.1	0.765	2.11
0.2	0.521	4.15
0.3	0.433	7.10
0.5	0.351	10.2
0.8	0.308	14.4
2.0	0.268	19.5
5.0	0.247	24.0
12.0	0.238	24.3

$$RI = S_w^{-2.26}$$

CAPILLARY PRESSURE (POROUS PLATE)

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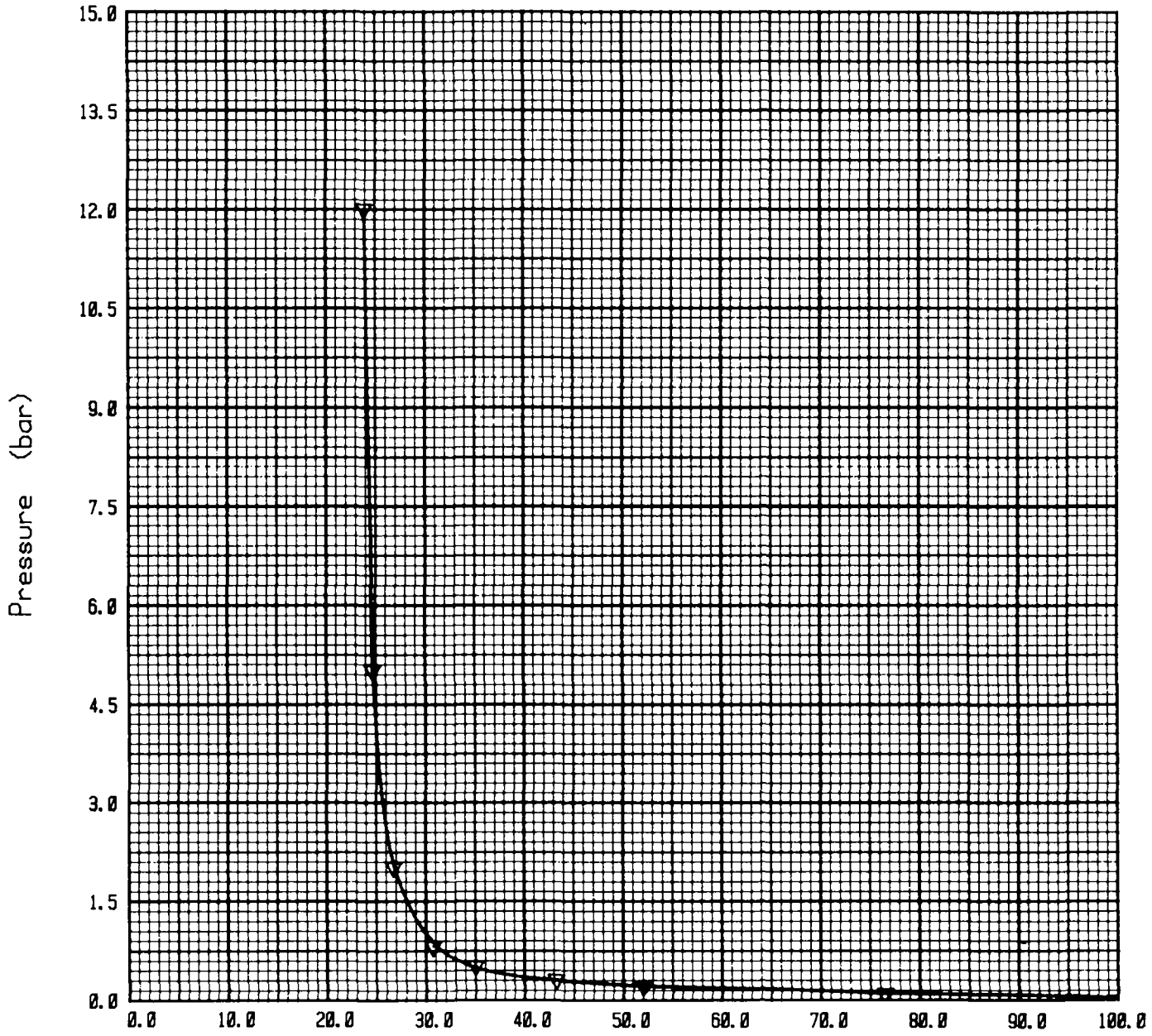
Petroleum laboratory

Company : STATOIL A/S

Well : 15/9-18 Klink. perm.: 170 mD

Sample no : 45.1 Porosity : 20.8 %

Depth (m) : 3237.05 Grain dens. : 2.62 g/cm^3



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RESISTIVITY INDEX VS. WATER SATURATION

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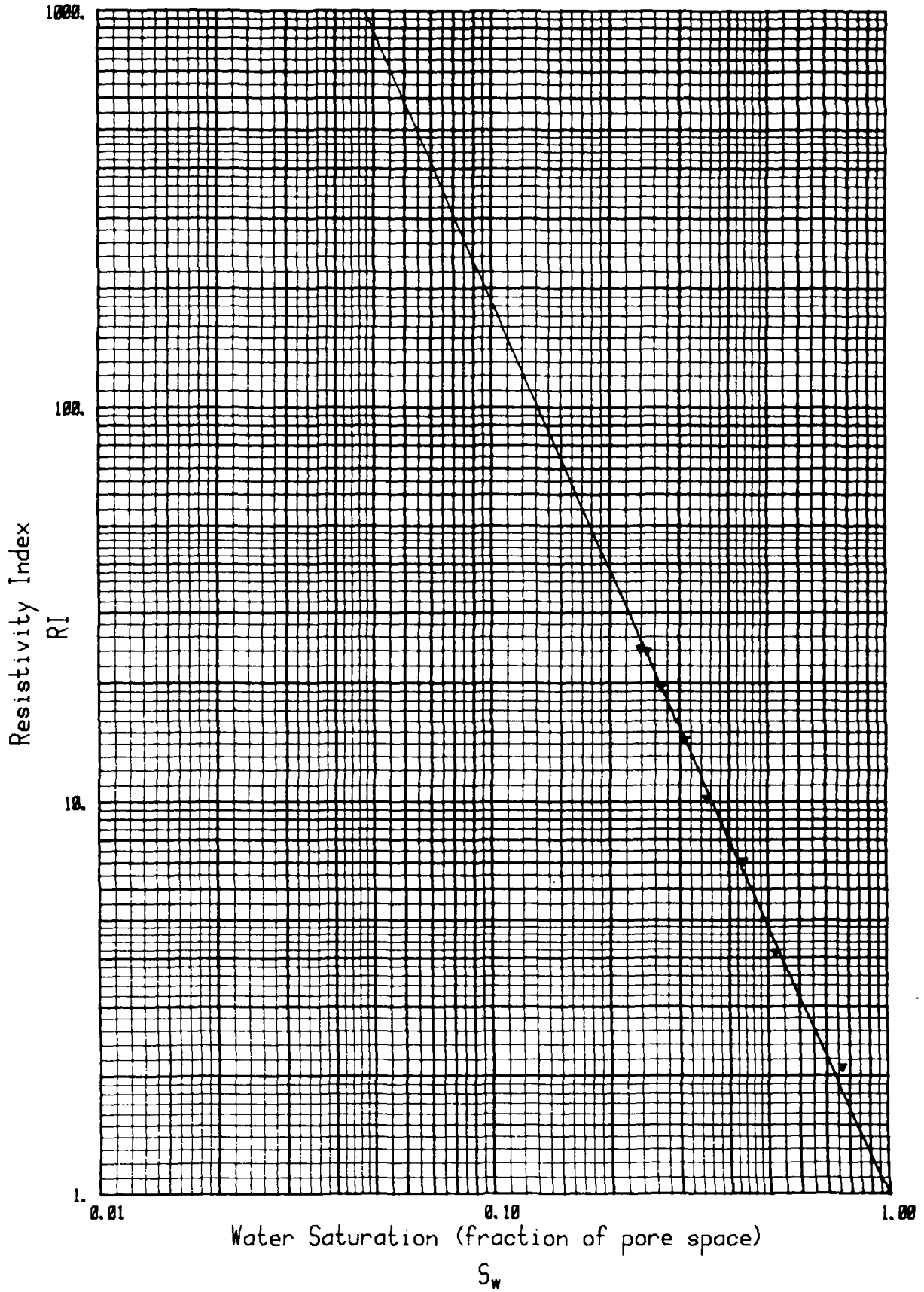
Sample no: 45.1
Depth : 3237.05 m
RI = 1.00 * $S_w^{-2.26}$

Klink. perm.: 170 mD
Porosity : 20.8 %
FF : 20.1



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CAPILLARY PRESSURE - RESISTIVITY INDEX

Sample no.: 48.1 Depth: 3238.05 m

Klink. perm.: 121 mD Porosity: 18.6 % Grain density: 2.61 g/cm^3

FF= 21.5 (room conditions)

Capillary pressure (bar)	Water saturation S_w (frac.)	Resistivity index RI
0.0	1.00	1.00
0.1	0.828	1.55
0.2	0.502	4.46
0.3	0.413	6.78
0.5	0.338	11.7
0.8	0.302	15.7
2.0	0.267	21.3
5.0	0.250	23.7
12.0	0.237	24.5

$$RI = S_w^{-2.26}$$

CAPILLARY PRESSURE (POROUS PLATE)

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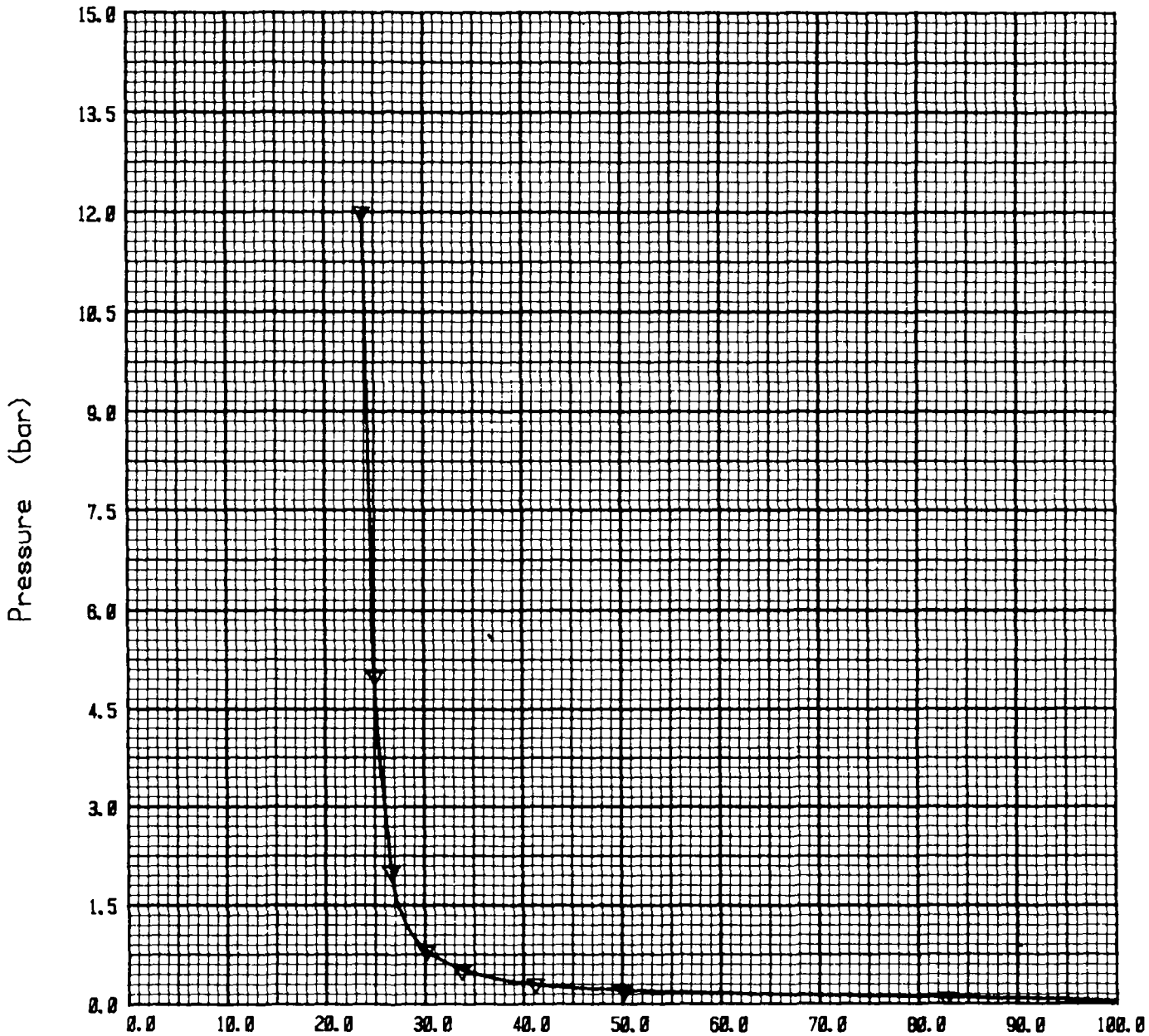
Petroleum laboratory

Company : STATOIL A/S

Well : 15/9-18 Klink. perm.: 121 mD

Sample no : 48.1 Porosity : 18.6 %

Depth (m) : 3238.05 Grain dens. : 2.61 g/cm^3



RESISTIVITY INDEX VS. WATER SATURATION

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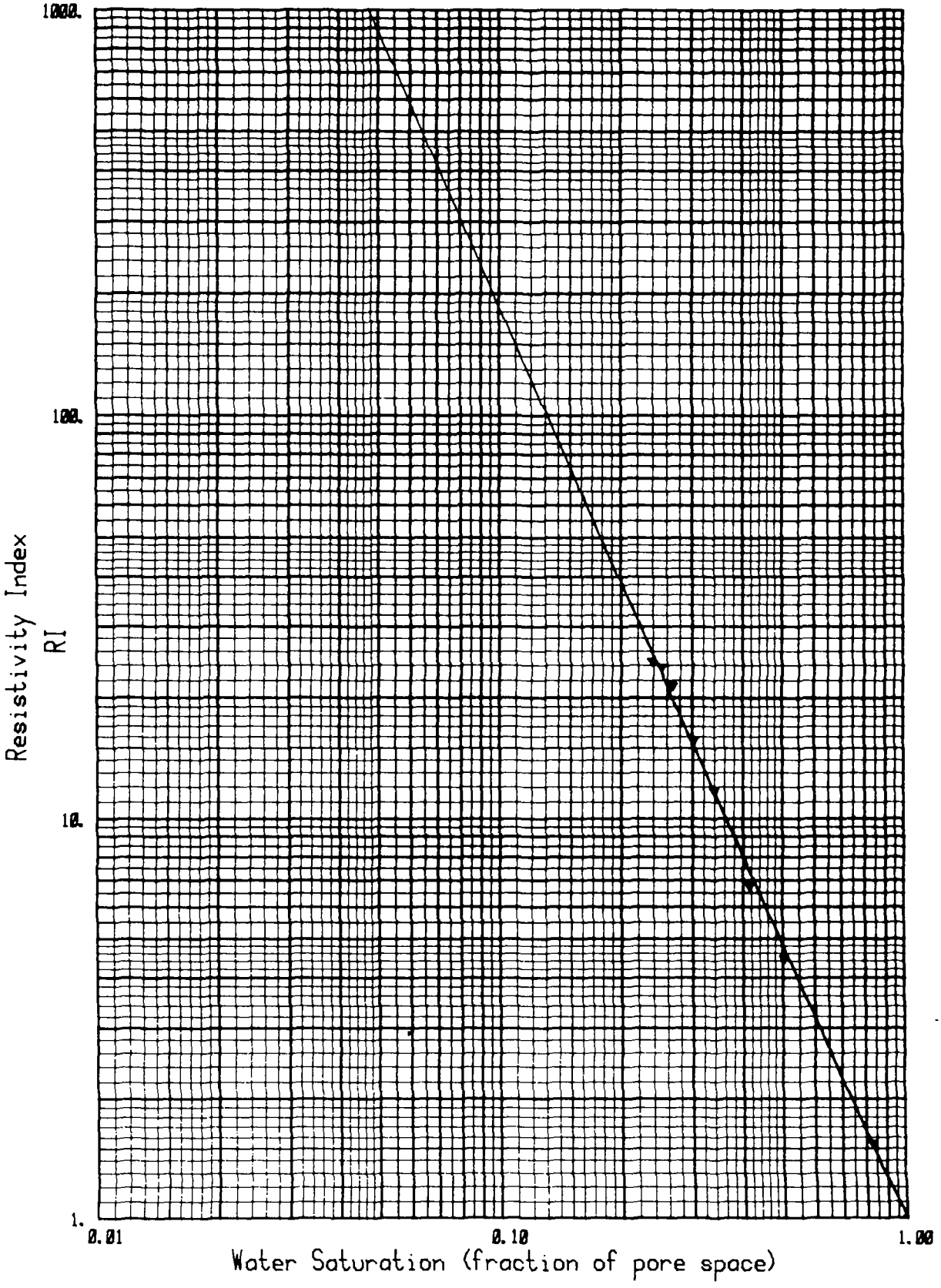
Petroleum laboratory

Sample no: 48.1
Depth : 3238.05 m
RI = $1.00 * S_w^{-2.26}$

Klink. perm.: 121 mD
Porosity : 18.6 %
FF : 21.5



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CAPILLARY PRESSURE - RESISTIVITY INDEX

Sample no.: 51.1 Depth: 3239.05 m

Klink. perm.: 542 mD Porosity: 21.2 % Grain density: 2.63 g/cm^3

FF= 18.9 (room conditions)

Capillary pressure (bar)	Water saturation S_w (frac.)	Resistivity index RI
0.0	1.00	1.00
0.1	0.535	3.42
0.2	0.412	6.20
0.3	0.354	7.50
0.5	0.314	11.3
0.8	0.292	13.0
2.0	0.263	15.6
5.0	0.235	18.9
12.0	0.223	20.8

$$RI = S_w^{-2.04}$$

CAPILLARY PRESSURE (POROUS PLATE)

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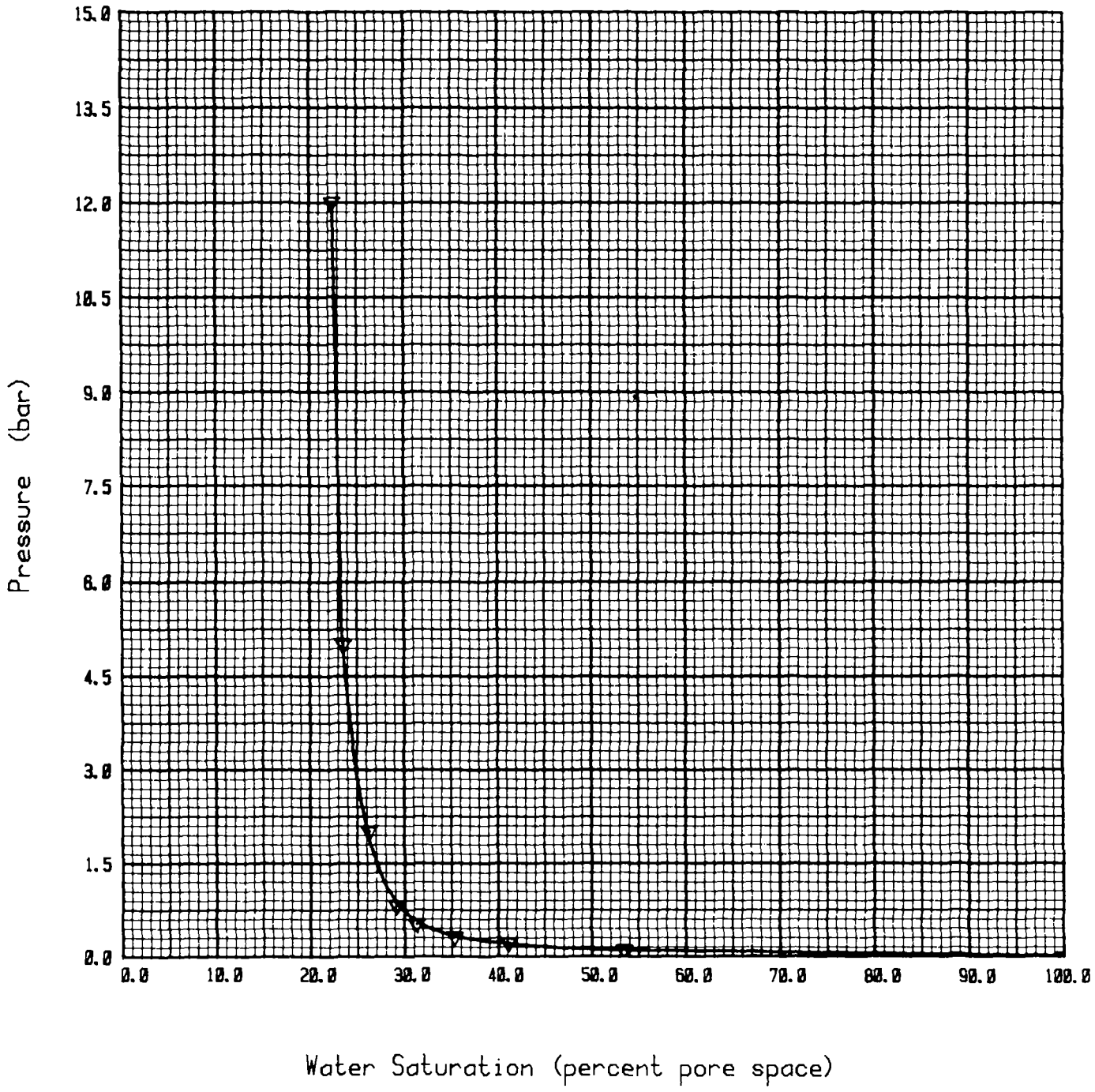
GEOPHYSICAL COMPANY OF NORWAY A.S.
Petroleum laboratory

Company : STATOIL A/S

Well : 15/9-18 Klink. perm.: 542 mD

Sample no : 51.1 Porosity : 21.2 %

Depth (m) : 3239.05 Grain dens. : 2.63 g/cm^3



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RESISTIVITY INDEX VS. WATER SATURATION

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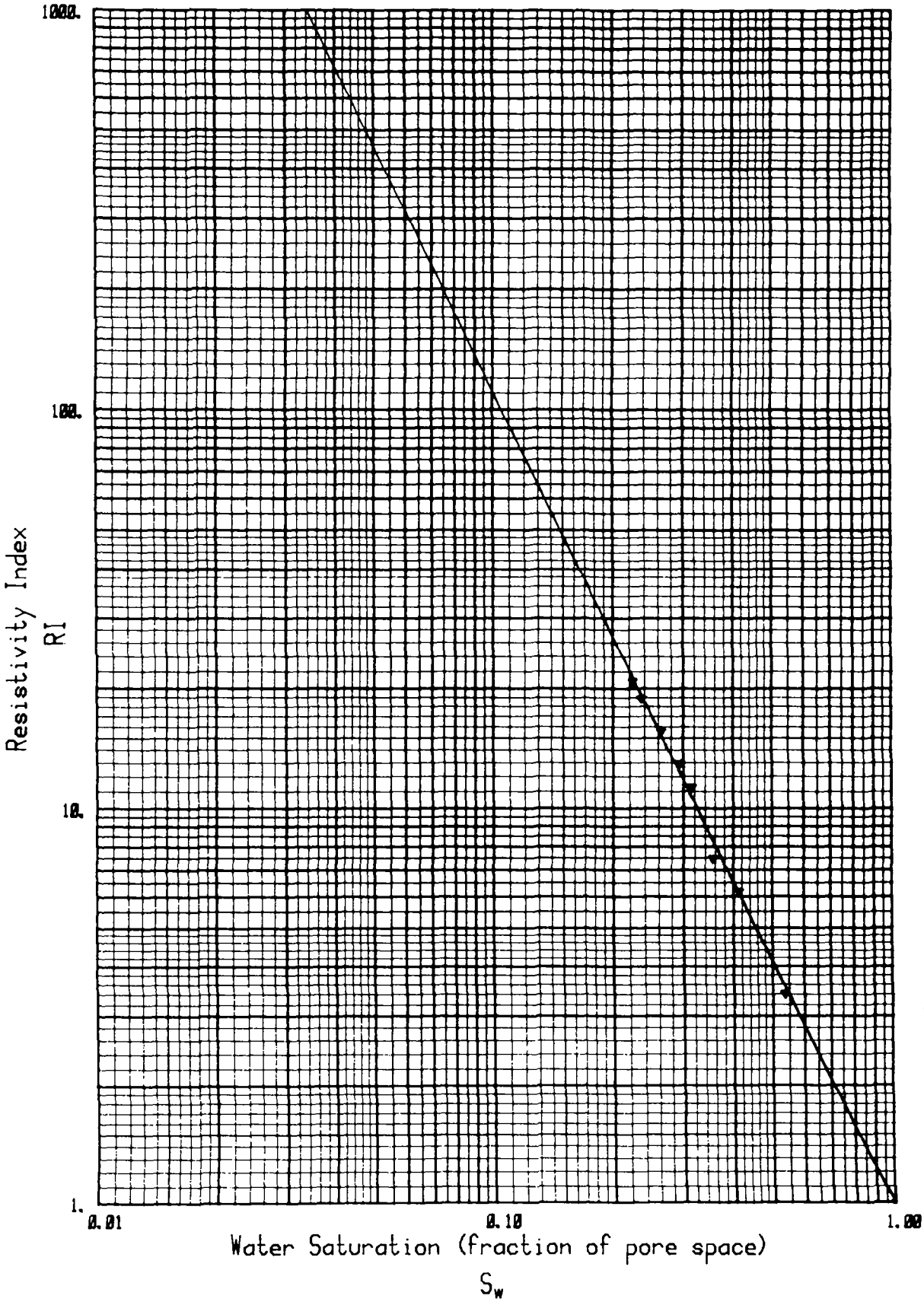
Petroleum laboratory

Sample no: 51.1
Depth : 3239.05 m
RI = 1.00 * $S_w^{-2.04}$

Klink. perm.: 542 mD
Porosity : 21.2 %
FF : 18.9



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KLINKENBERG PERMEABILITY (k_{el}) / S_{wi} & SATURATION EXPONENT

Sample no.	Depth (m)	Porosity (%)	Klink. perm. k_{el} (mD)	Irreducible water saturation S_{wi}	Saturation exponent n
42.1	3236.05	21.1	334	0.220	2.23
45.1	3237.05	20.8	170	0.238	2.26
48.1	3238.05	18.6	121	0.237	2.26
51.1	3239.05	21.2	542	0.223	2.04

KLINKENBERG PERMEABILITY VERSUS S_{wi}

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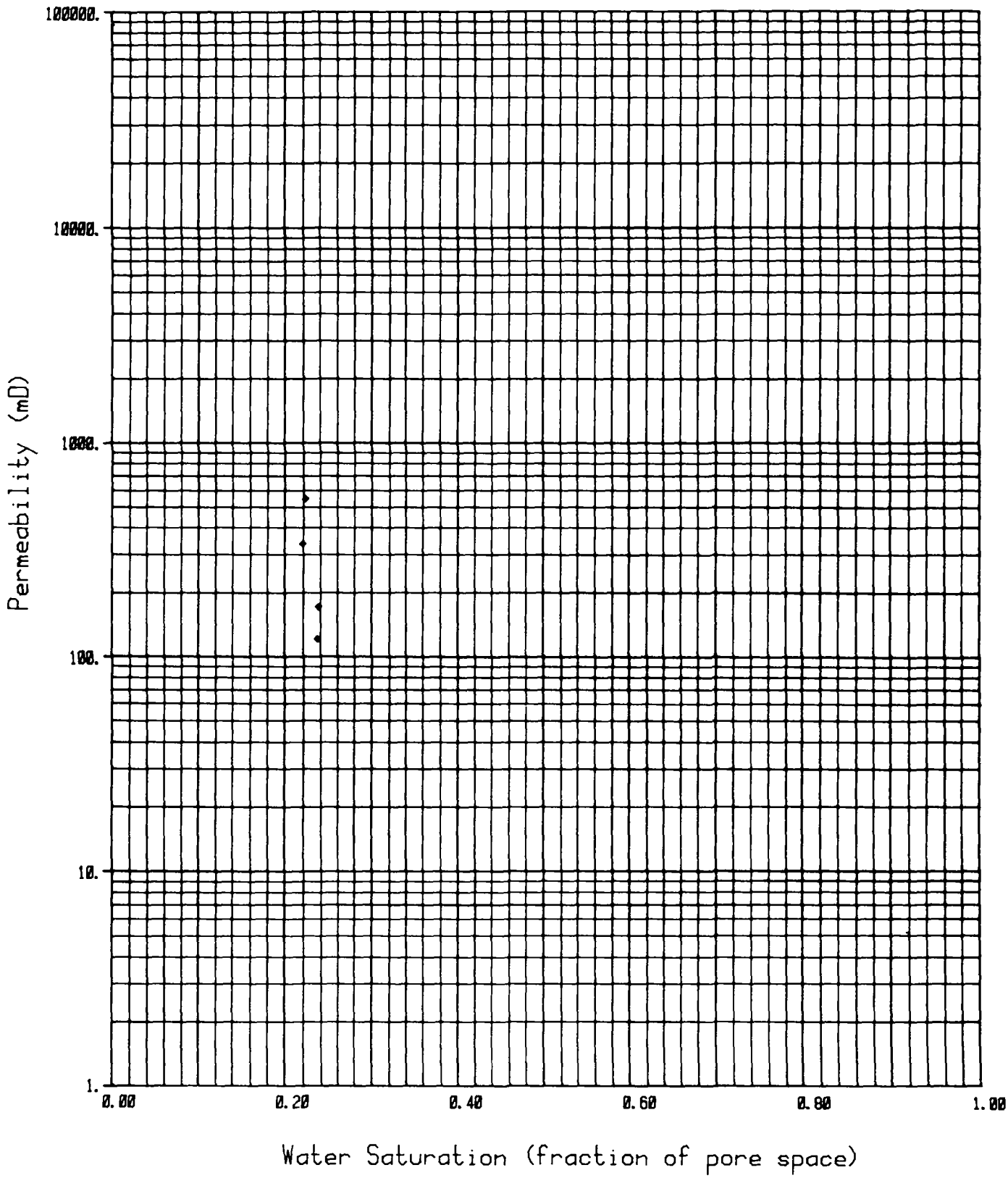
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18



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CONFINING PRESSURE MEASUREMENTS

Sample no.: 42.1 Depth (m): 3236.05

Measurements	"Atmospheric" 15 bar	25 bar	50 bar	75 bar	100 bar	135 bar	175 bar	250 bar
Formation factor:	16.7	17.2	17.7	18.0	18.0	18.1	18.2	18.4
FF - increment: (frac. of original)	1.00	1.03	1.06	1.08	1.08	1.09	1.09	1.11
Porosity (%):	21.1	20.9	20.5	20.4	20.3	20.2	20.1	20.0
Porosity reduction: (frac. of original)	1.000	0.989	0.973	0.965	0.961	0.956	0.953	0.947
Pore volume (cm^3):	15.6	15.4	15.1	14.9	14.8	14.7	14.7	14.6
Pore volume reduction: (frac. of original)	1.000	0.984	0.964	0.954	0.949	0.944	0.939	0.932
Water permeability (mD):	315							
Permeability reduction: (frac. of original)	1.000	0.856	0.790	0.770	0.754	0.734	0.712	0.693

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PERMEABILITY AND POROSITY VERSUS CONFINING PRESSURE

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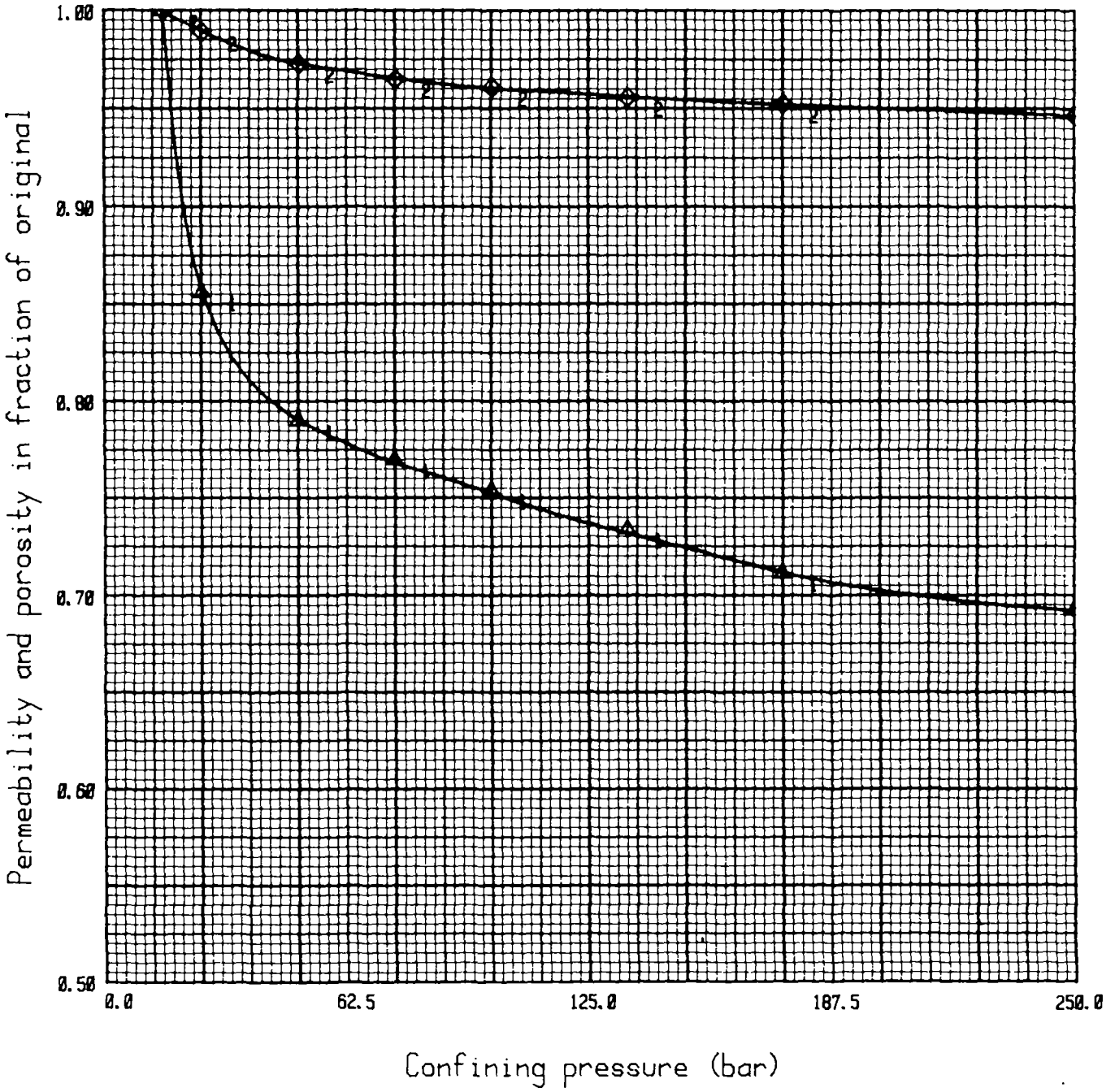
Petroleum laboratory

Sample no: 42.1
Depth : 3236.05 m

Orig. permeability (curve 1): 315 mD
Orig. porosity (curve 2): 21.1 %



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CONFINING PRESSURE MEASUREMENTS

Sample no.: 45.1 Depth (m): 3237.05

Measurements	"Atmospheric" 15 bar	25 bar	50 bar	75 bar	100 bar	135 bar	175 bar	250 bar
Formation factor:	19.1	19.5	20.2	20.6	20.9	21.2	21.4	21.7
FF - increment: (frac. of original)	1.00	1.02	1.06	1.08	1.10	1.11	1.12	1.14
Porosity (%):	20.8	20.7	20.4	20.3	20.2	20.1	20.0	19.8
Porosity reduction: (frac. of original)	1.000	0.995	0.981	0.974	0.969	0.964	0.960	0.954
Pore volume (cm^3):	16.0	15.9	15.6	15.5	15.4	15.3	15.2	15.1
Pore volume reduction: (frac. of original)	1.000	0.991	0.973	0.964	0.958	0.952	0.947	0.939
Water permeability (mD):	150							
Permeability reduction: (frac. of original)	1.000	0.902	0.859	0.841	0.824	0.813	0.797	0.777

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PERMEABILITY AND POROSITY VERSUS CONFINING PRESSURE

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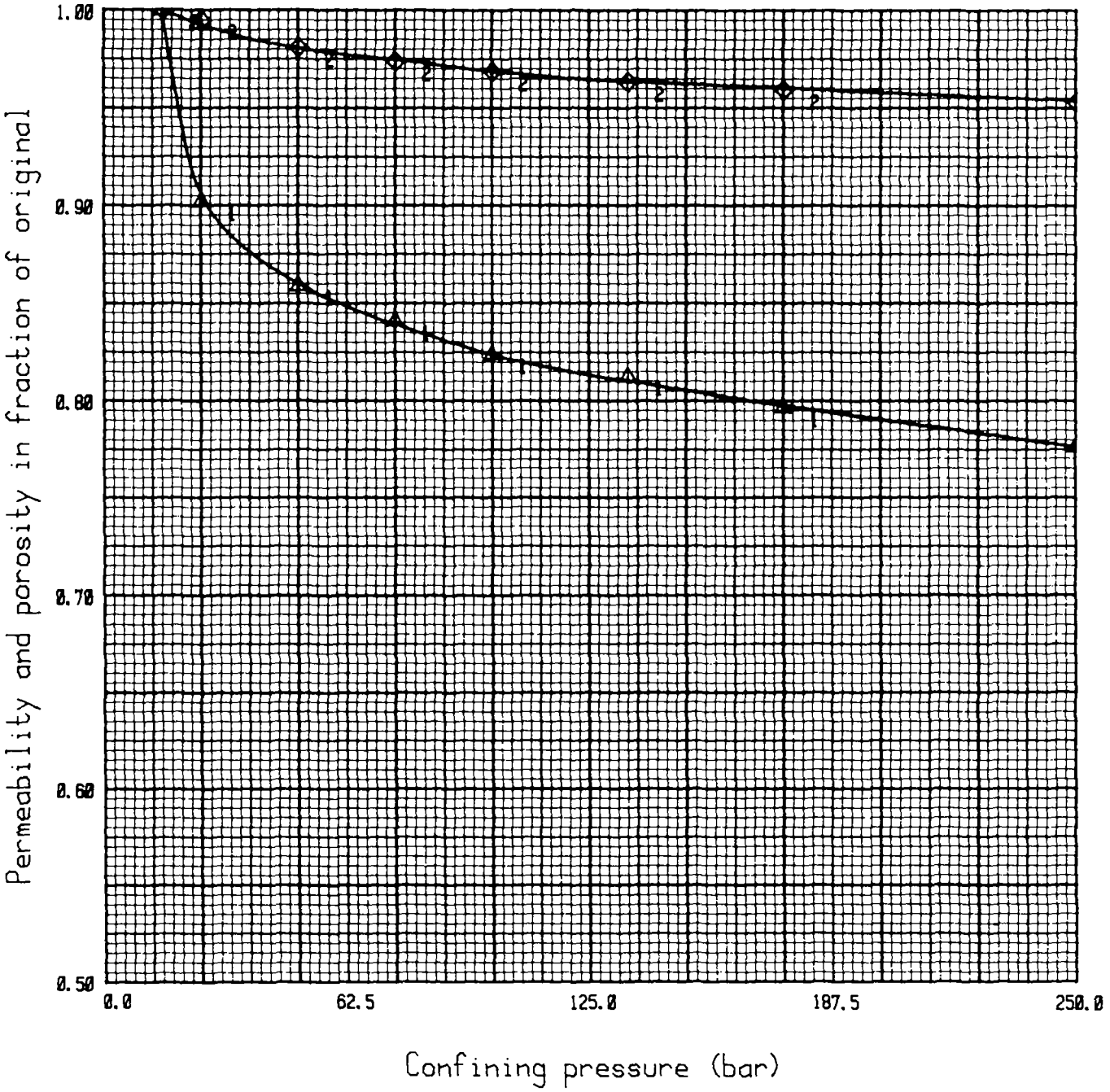
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Sample no: 45.1
Depth : 3237.05 m

Orig. permeability (curve 1): 150 mD
Orig. porosity (curve 2): 20.8 %



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CONFINING PRESSURE MEASUREMENTS

Sample no.: 48.1 Depth (m): 3238.05

Measurements	"Atmospheric" 15 bar	25 bar	50 bar	75 bar	100 bar	135 bar	175 bar	250 bar
Formation factor:	20.8	21.3	22.2	22.6	23.0	23.3	23.6	23.8
FF - increment:	1.00	1.03	1.07	1.09	1.11	1.12	1.13	1.15
(frac. of original)								
Porosity (%):	18.6	18.4	18.1	17.9	17.9	17.8	17.7	17.6
Porosity reduction:	1.000	0.989	0.973	0.965	0.960	0.955	0.951	0.947
(frac. of original)								
Pore volume (cm^3):	13.9	13.7	13.5	13.3	13.2	13.2	13.1	13.0
Pore volume reduction:	1.000	0.988	0.968	0.959	0.953	0.947	0.942	0.937
(frac. of original)								
Water permeability (mD):	108							
Permeability reduction:	1.000	0.875	0.824	0.800	0.789	0.774	0.762	0.751
(frac. of original)								

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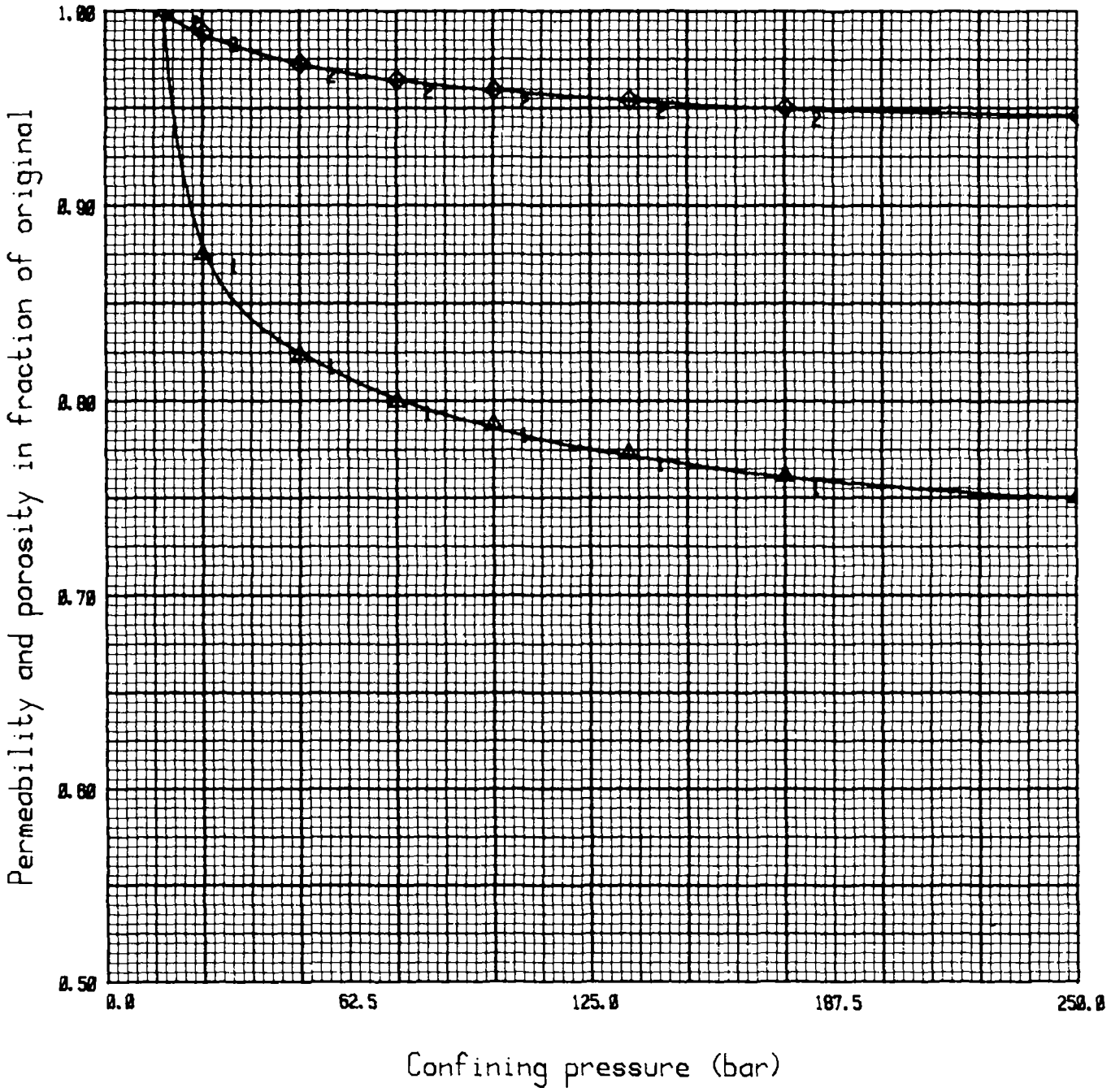
PERMEABILITY AND POROSITY VERSUS CONFINING PRESSURE

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Sample no: 48.1
Depth : 3238.05 m

Orig. permeability (curve 1): 108 mD
Orig. porosity (curve 2): 18.6 %



CONFINING PRESSURE MEASUREMENTS

Sample no.: 51.1 Depth (m): 3239.05

Measurements	"Atmospheric" 15 bar	25 bar	50 bar	75 bar	100 bar	135 bar	175 bar	250 bar
Formation factor:	16.1	16.6	17.0	17.3	17.5	17.7	17.8	18.0
FF - increment: (frac. of original)	1.00	1.03	1.06	1.07	1.09	1.10	1.10	1.12
Porosity (%):	21.2	20.9	20.6	20.4	20.3	20.2	20.1	19.9
Porosity reduction: (frac. of original)	1.000	0.986	0.971	0.962	0.957	0.951	0.946	0.938
Pore volume (cm^3):	15.9	15.6	15.3	15.1	15.0	14.9	14.8	14.7
Pore volume reduction: (frac. of original)	1.000	0.984	0.964	0.954	0.948	0.940	0.934	0.925
Water permeability (mD):	468							
Permeability reduction: (frac. of original)	1.000	0.914	0.870	0.851	0.838	0.824	0.812	0.786

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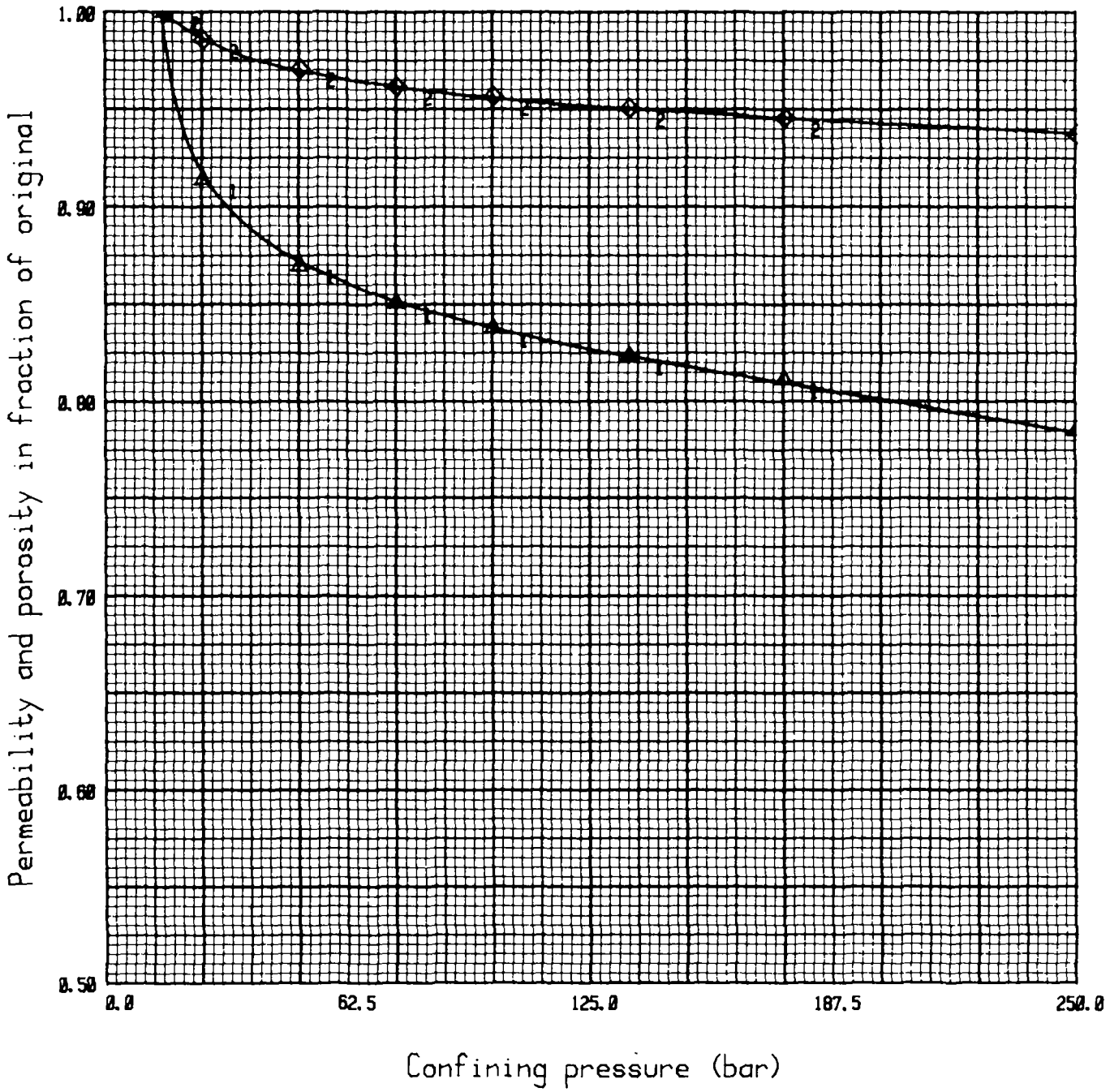
PERMEABILITY AND POROSITY VERSUS CONFINING PRESSURE

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Sample no: 51.1
Depth : 3239.05 m

Orig. permeability (curve 1): 468 mD
Orig. porosity (curve 2): 21.2 %



CONFINING PRESSURE: FORMATION FACTOR / POROSITY

Sample no.	"Atmospheric" 15 bar FF	frac.por.	25 bar FF	frac.por.	50 bar FF	frac.por.	75 bar FF	frac.por.
42.1	16.7	0.211	17.2	0.209	17.7	0.205	18.0	0.204
45.1	19.1	0.208	19.5	0.207	20.2	0.204	20.6	0.203
48.1	20.8	0.186	21.3	0.184	22.2	0.181	22.6	0.179
51.1	16.1	0.212	16.6	0.209	17.0	0.206	17.3	0.204

Forced fit:	$FF = \phi^{-1.821}$	$FF = \phi^{-1.826}$	$FF = \phi^{-1.827}$	$FF = \phi^{-1.830}$
Free fit :	$FF = 1.31 \cdot \phi^{-1.65}$	$FF = 1.55 \cdot \phi^{-1.55}$	$FF = 1.36 \cdot \phi^{-1.64}$	$FF = 1.56 \cdot \phi^{-1.56}$

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CONFINING PRESSURE: FORMATION FACTOR / POROSITY

Sample no.	100 bar FF	100 bar frac.por.	135 bar FF	135 bar frac.por.	175 bar FF	175 bar frac.por.	250 bar FF	250 bar frac.por.
42.1	18.0	0.203	18.1	0.202	18.2	0.201	18.4	0.200
45.1	20.9	0.202	21.2	0.201	21.4	0.200	21.7	0.198
48.1	23.0	0.179	23.3	0.178	23.6	0.177	23.8	0.176
51.1	17.5	0.203	17.7	0.202	17.8	0.201	18.0	0.199

Forced fit:	$FF = \phi^{-1.832}$	$FF = \phi^{-1.833}$	$FF = \phi^{-1.833}$	$FF = \phi^{-1.831}$
Free fit:	$FF = 1.26 \cdot \phi^{-1.69}$	$FF = 1.23 \cdot \phi^{-1.71}$	$FF = 1.15 \cdot \phi^{-1.75}$	$FF = 1.10 \cdot \phi^{-1.77}$

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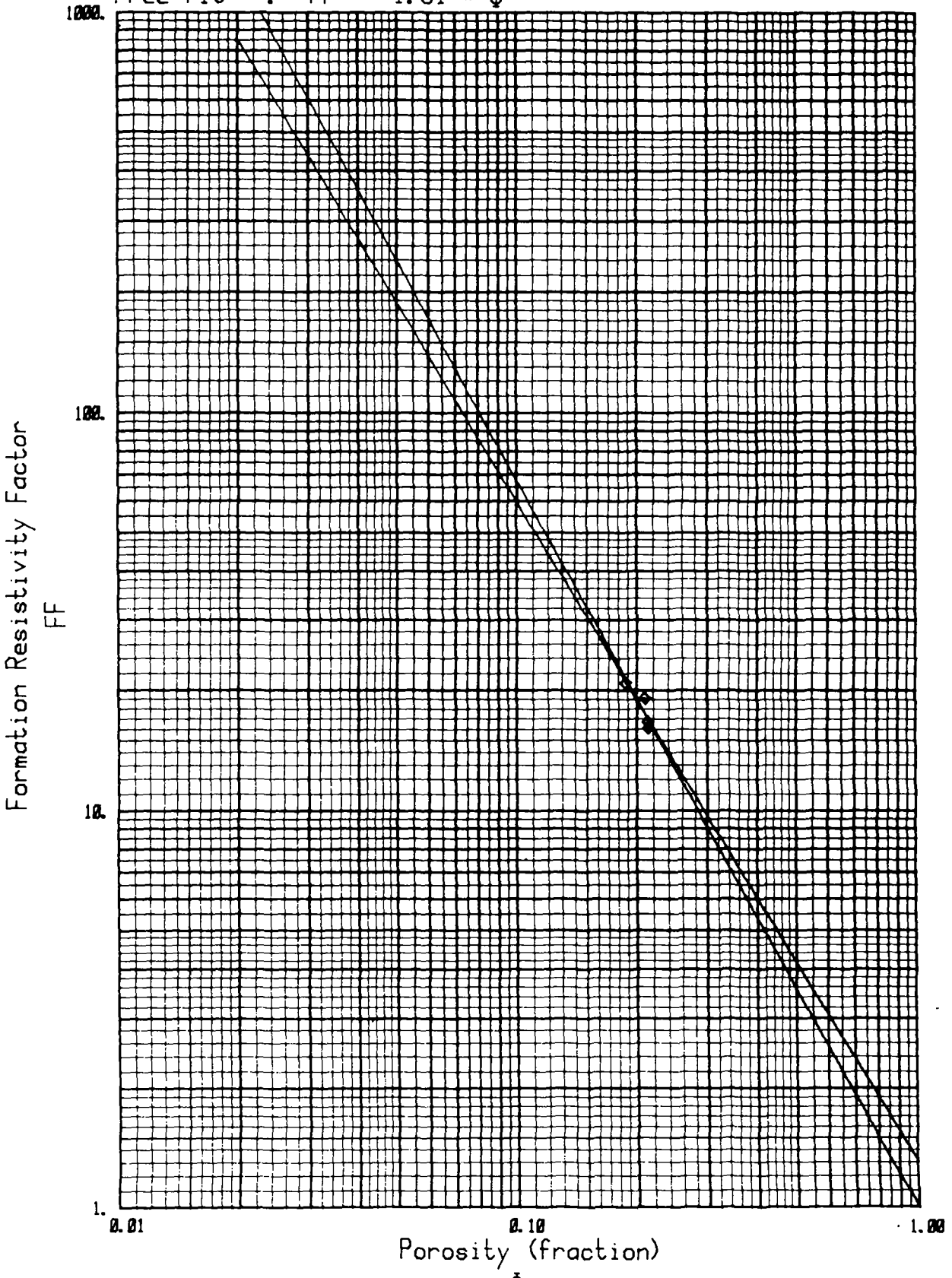
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : Atmospheric condition. (15 bar)
Forced fit : $FF = 1.00 * \Phi^{-1.82}$
Free fit : $FF = 1.31 * \Phi^{-1.85}$



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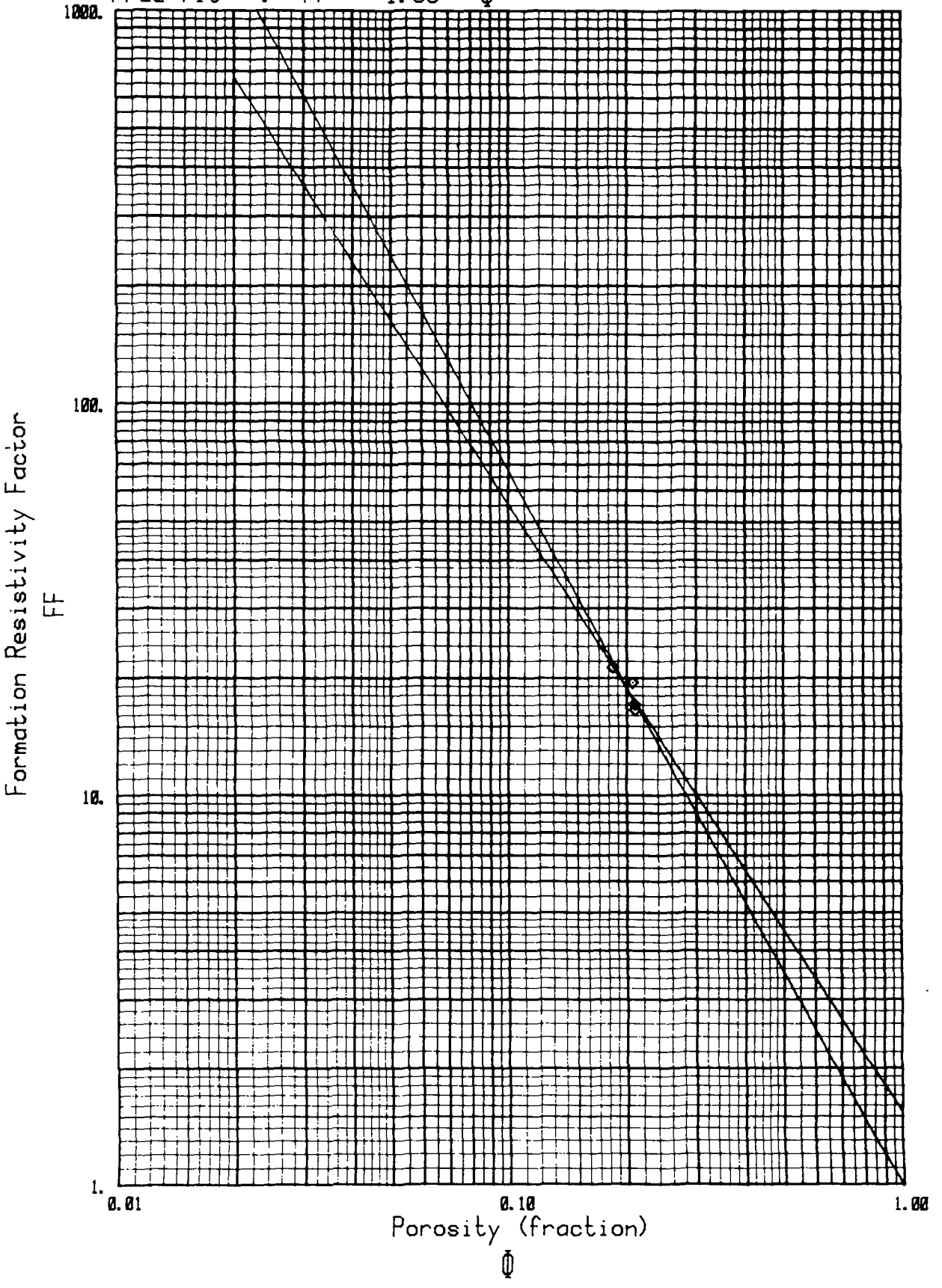
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : 25 bar
Forced fit : $FF = 1.00 * \Phi^{-1.83}$
Free fit : $FF = 1.55 * \Phi^{-1.55}$



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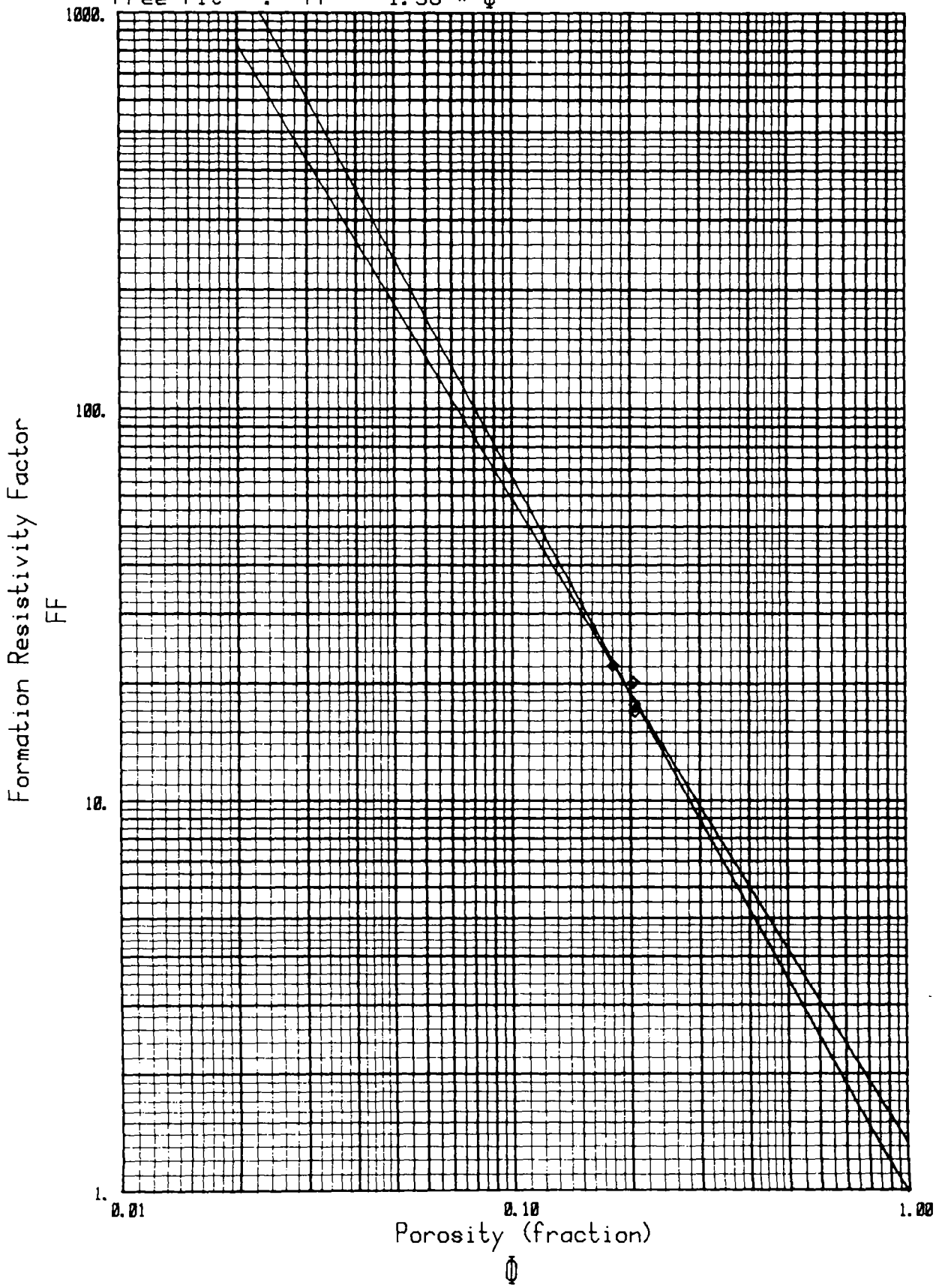
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : 50 bar
Forced fit : $FF = 1.00 * \Phi^{-1.83}$
Free fit : $FF = 1.36 * \Phi^{-1.64}$



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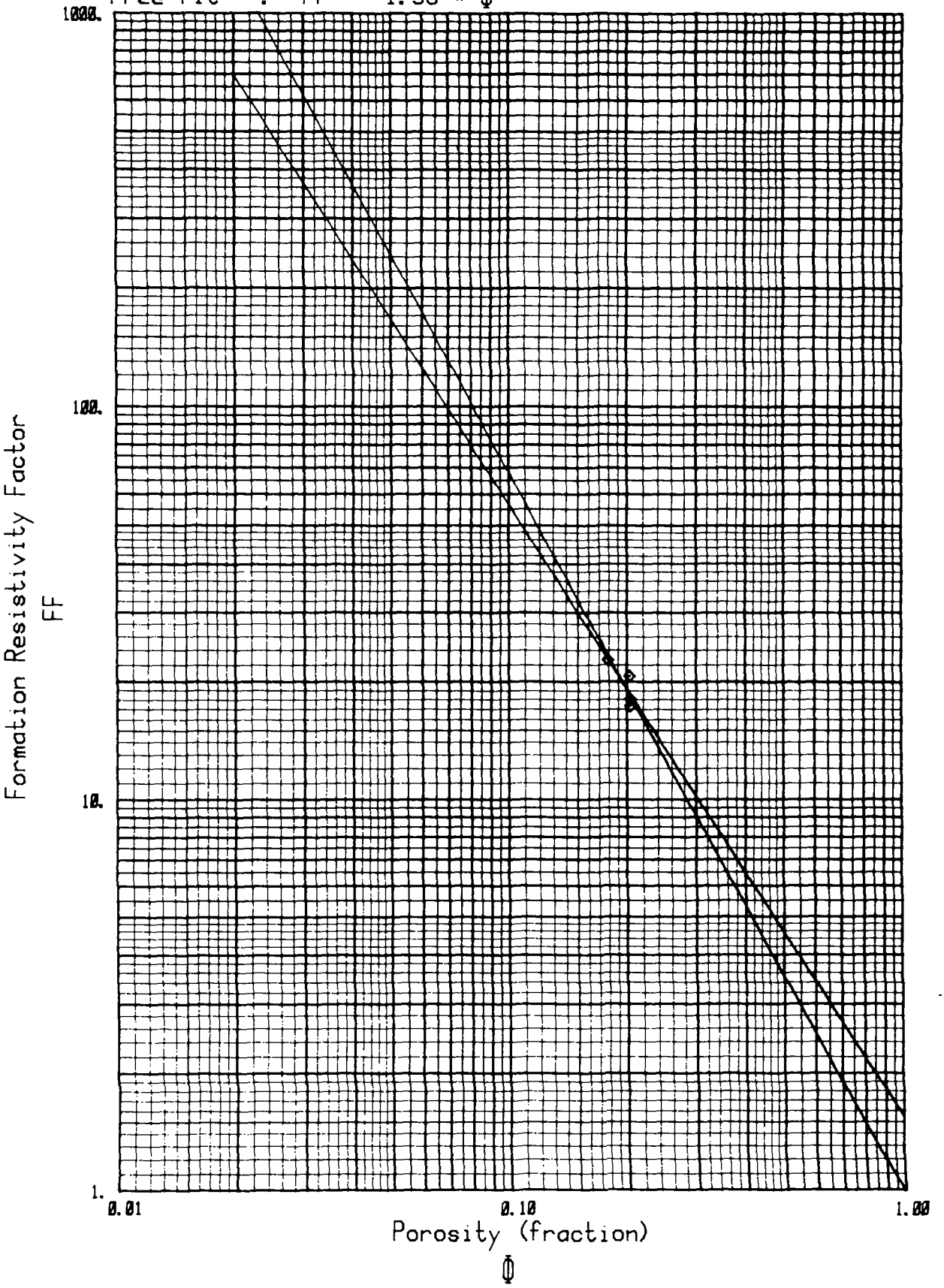
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : 75 bar
Forced fit : $FF = 1.00 * \phi^{-1.83}$
Free fit : $FF = 1.56 * \phi^{-1.58}$



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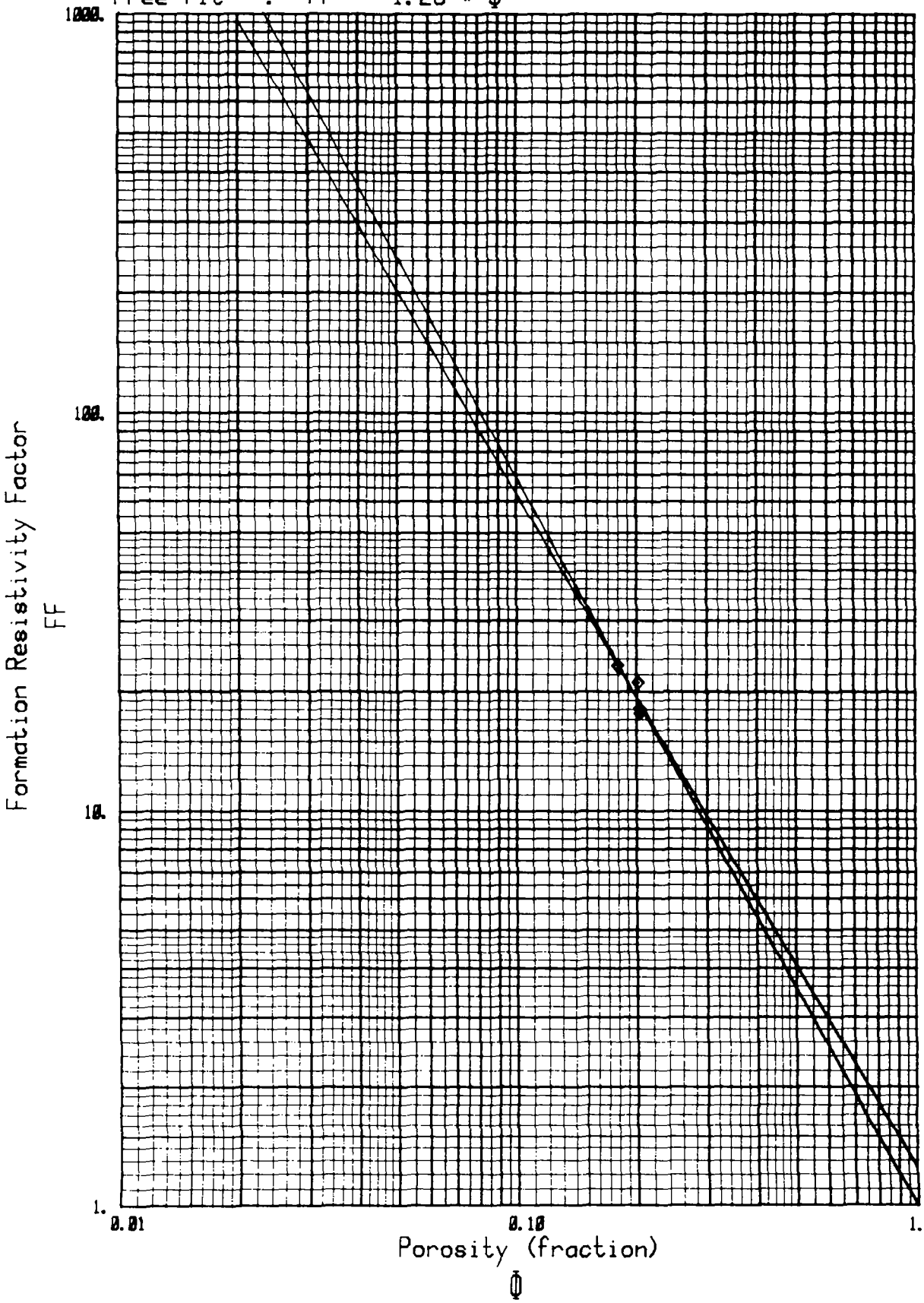
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : 100 bar
Forced fit : $FF = 1.00 * \phi^{-1.83}$
Free fit : $FF = 1.26 * \phi^{-1.60}$



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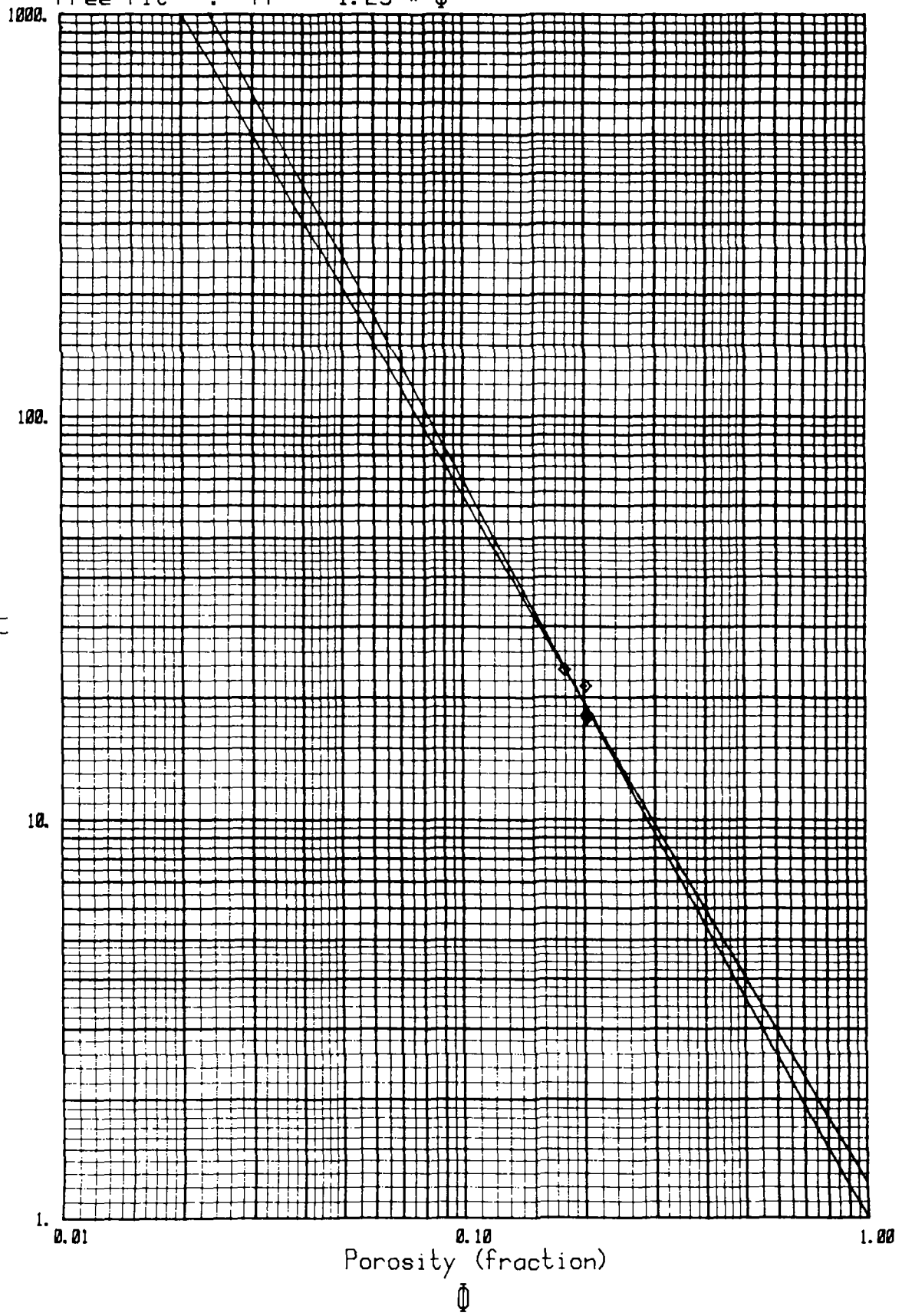
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : 135 bar
Forced fit : $FF = 1.00 * \Phi^{-1.83}$
Free fit : $FF = 1.23 * \Phi^{-1.71}$



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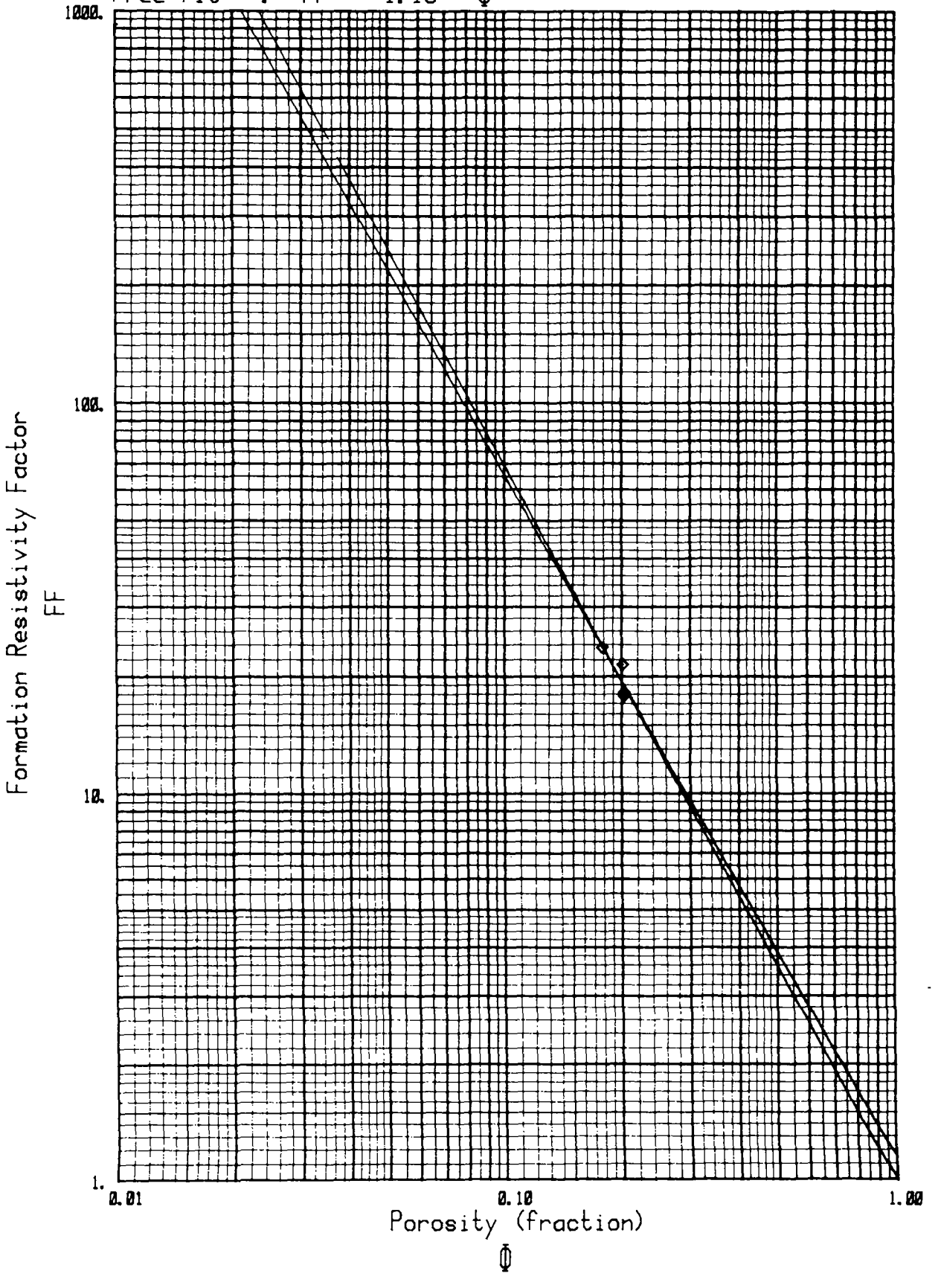
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : 175 bar
Forced fit : $FF = 1.00 * \Phi^{-1.83}$
Free fit : $FF = 1.15 * \Phi^{-1.75}$



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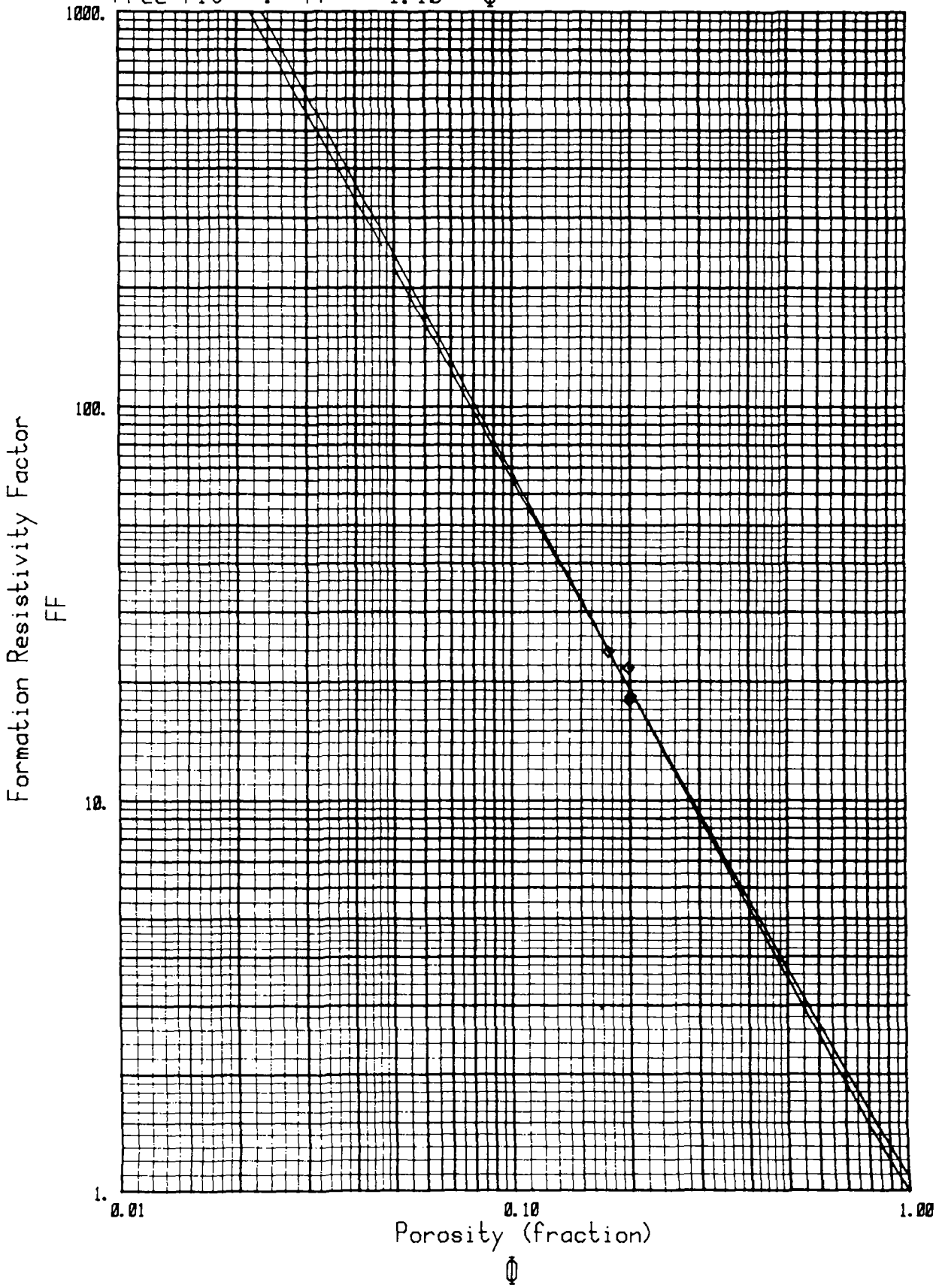
FORMATION RESISTIVITY FACTOR VERSUS POROSITY

GECO
GEOPHYSICAL COMPANY OF NORWAY A.S
Petroleum laboratory

Company : STATOIL A/S
Well : 15/9-18
Confining pressure : 250 bar
Forced fit : $FF = 1.00 * \phi^{-1.83}$
Free fit : $FF = 1.10 * \phi^{-1.77}$



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