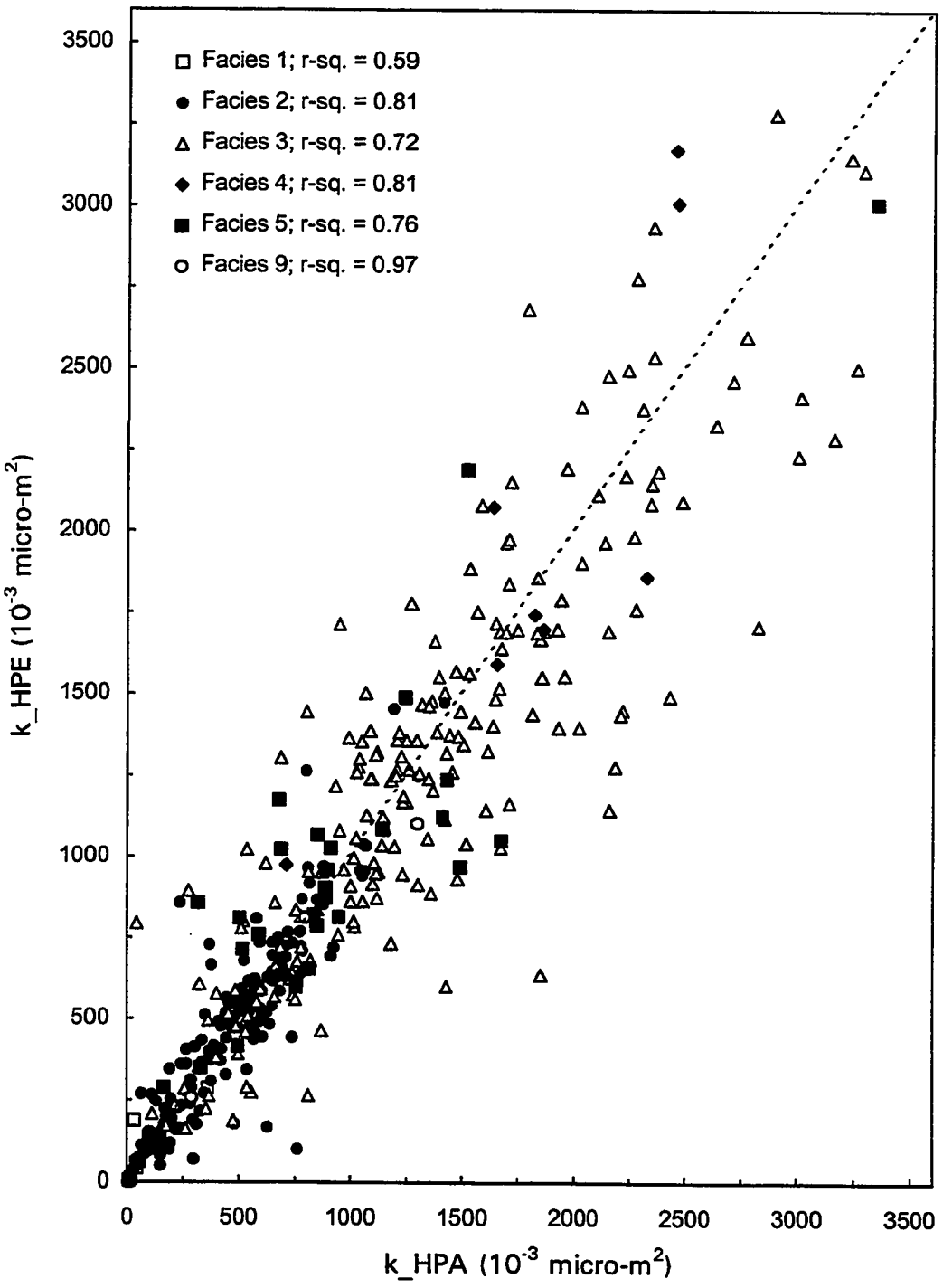

Figure 30 - Permeability cross-plot k_HPE vs. k_HPA for all data.

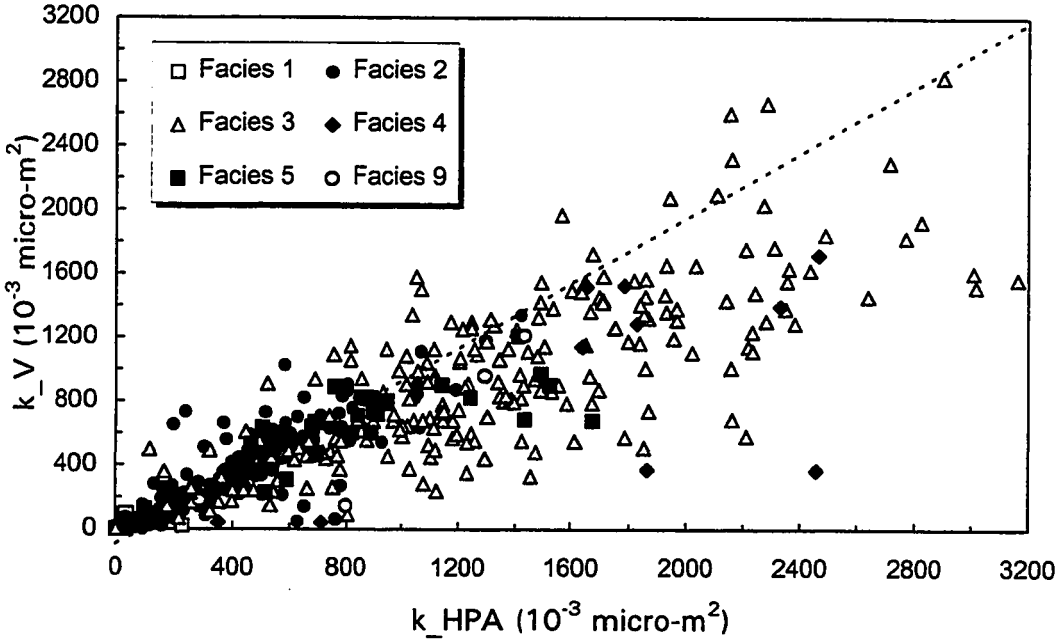

Figure 31a - Permeability cross-plot k_V vs. k_HPA for all data.

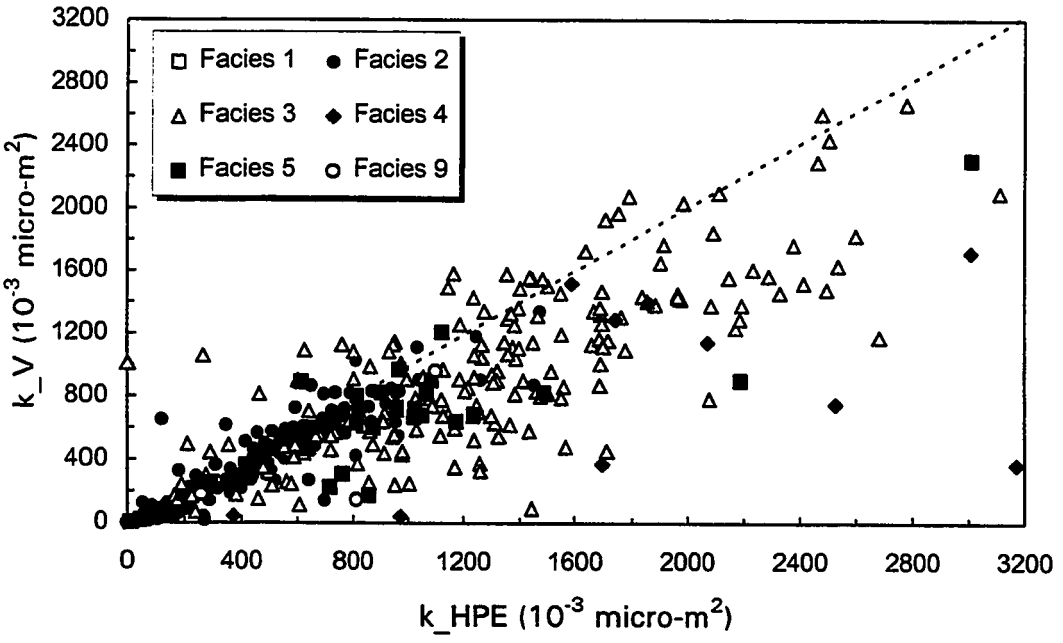

Figure 31b - Permeability cross-plot k_V vs. k_HPE for all data.

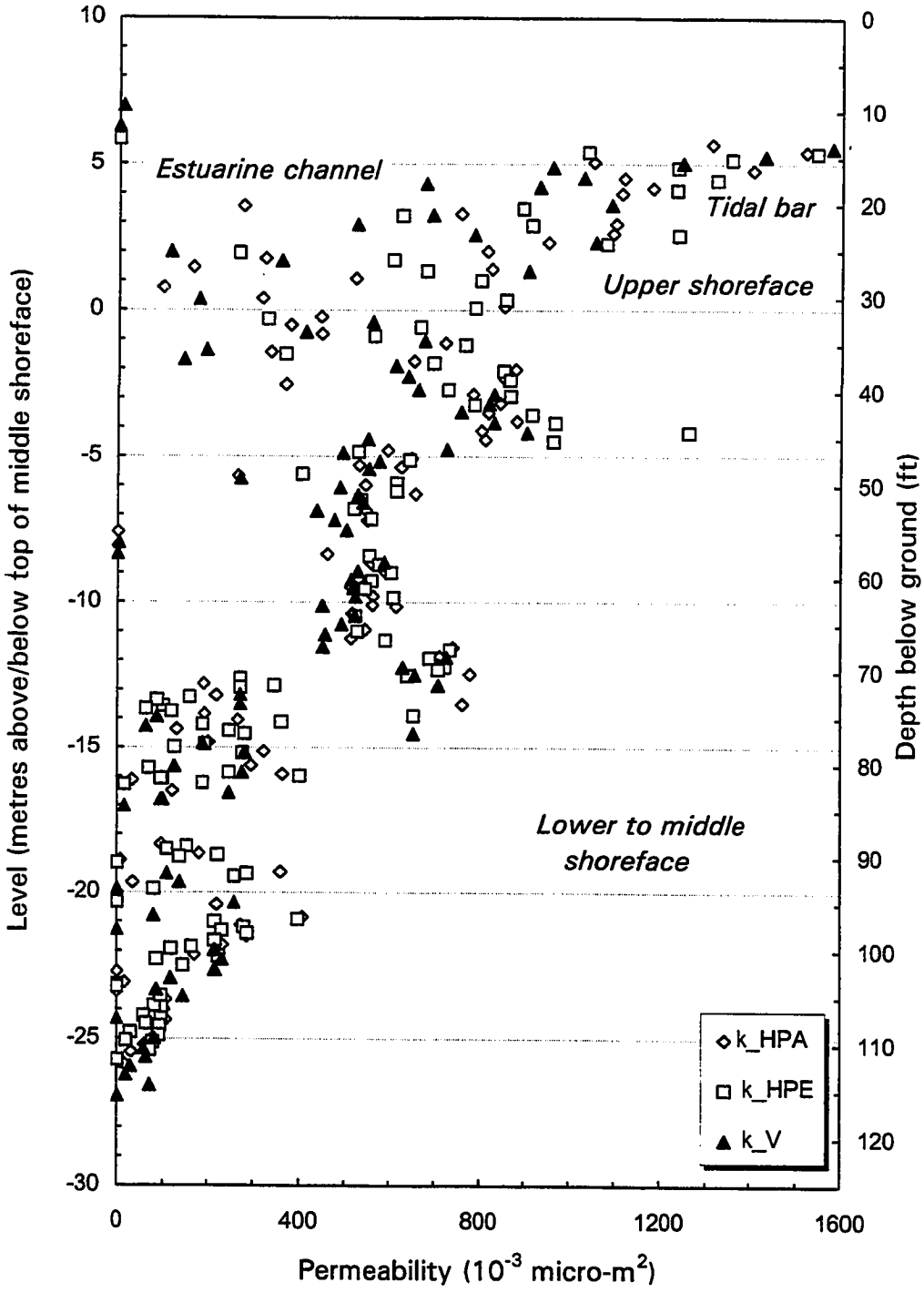

Figure 32 - Profile of k vs. depth (Well No. 1)

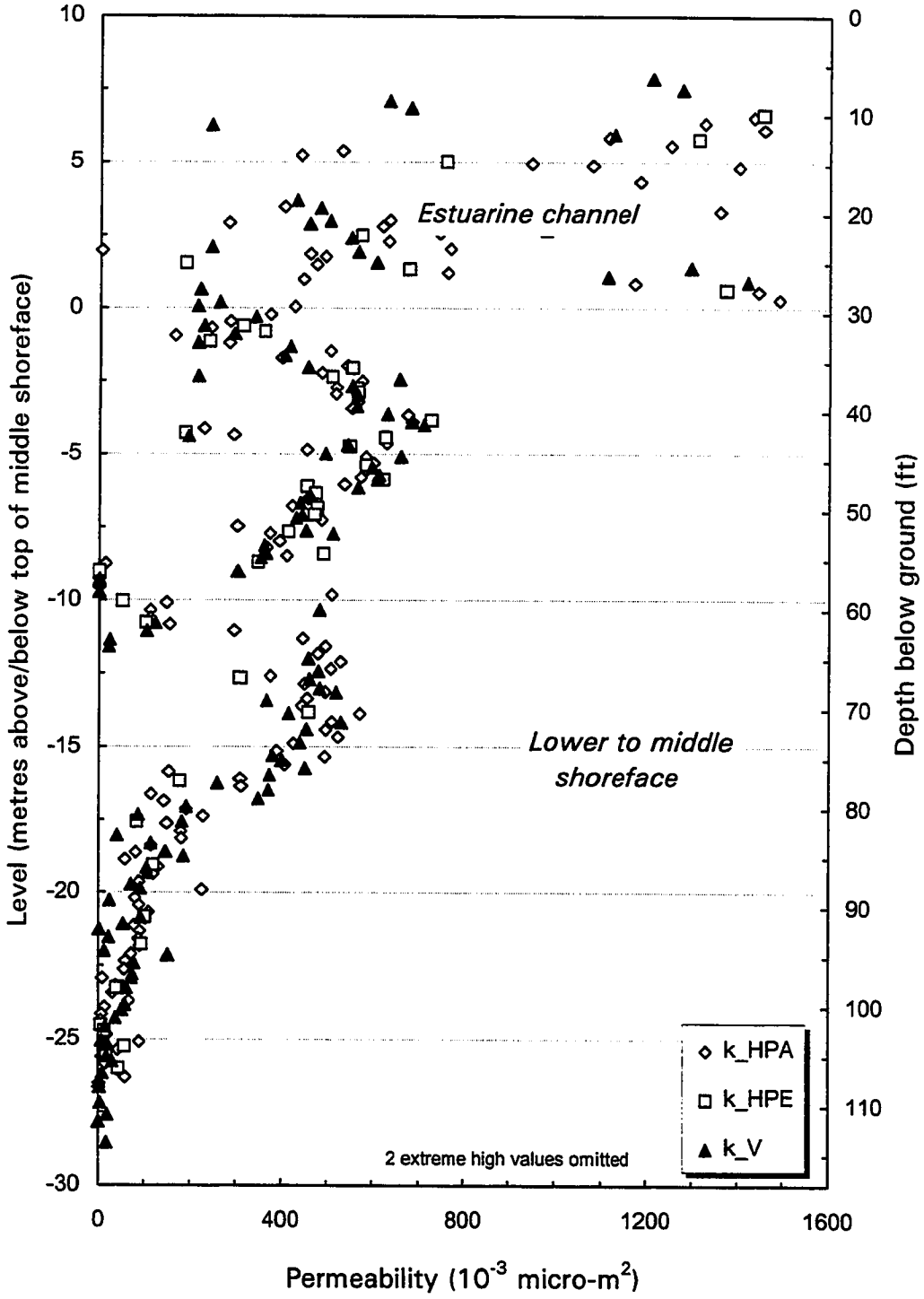

Figure 33 - Profile of k vs. depth (Well No. 3)

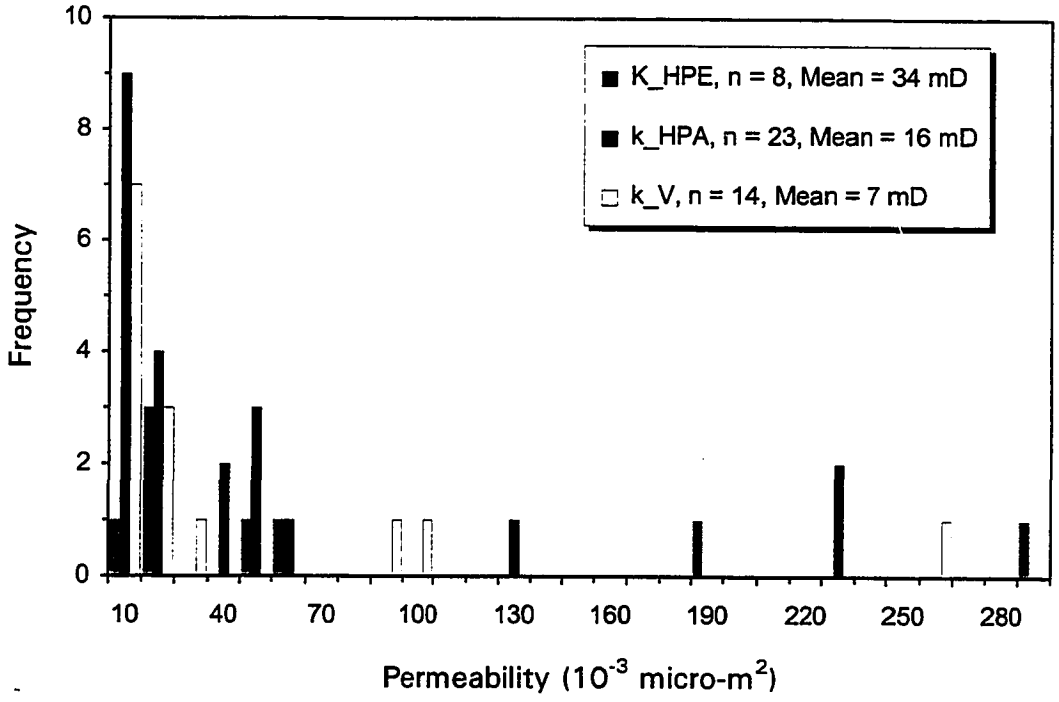

Figure 34 - Histogram of Lithofacies 1 permeabilities.

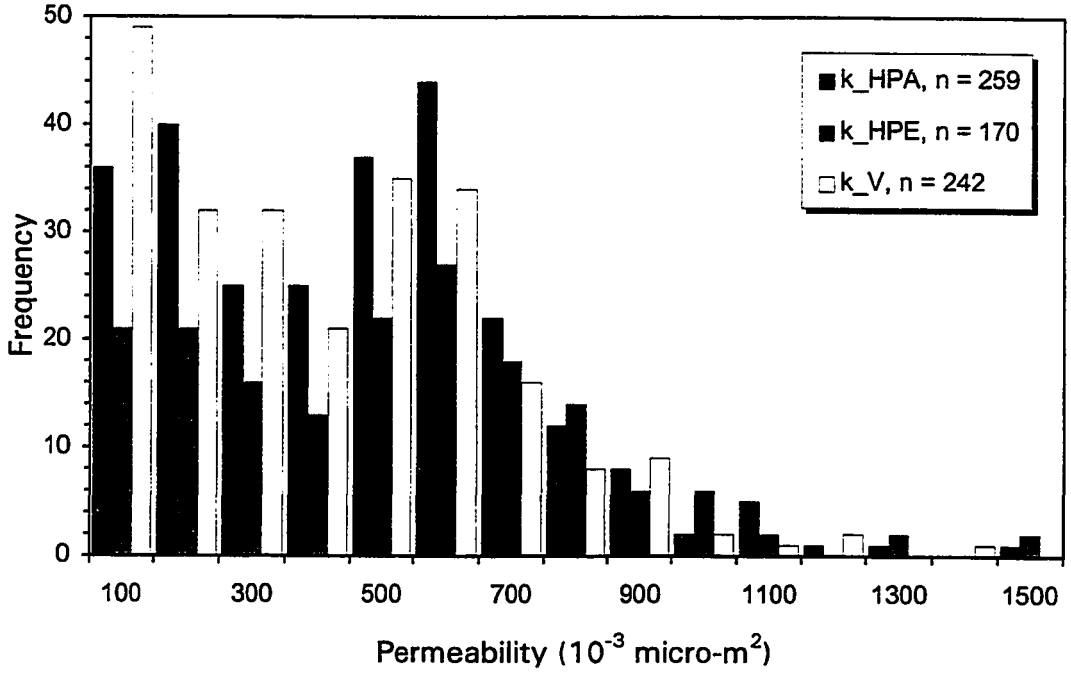

Figure 35 - Histogram of Lithofacies 2 permeabilities.

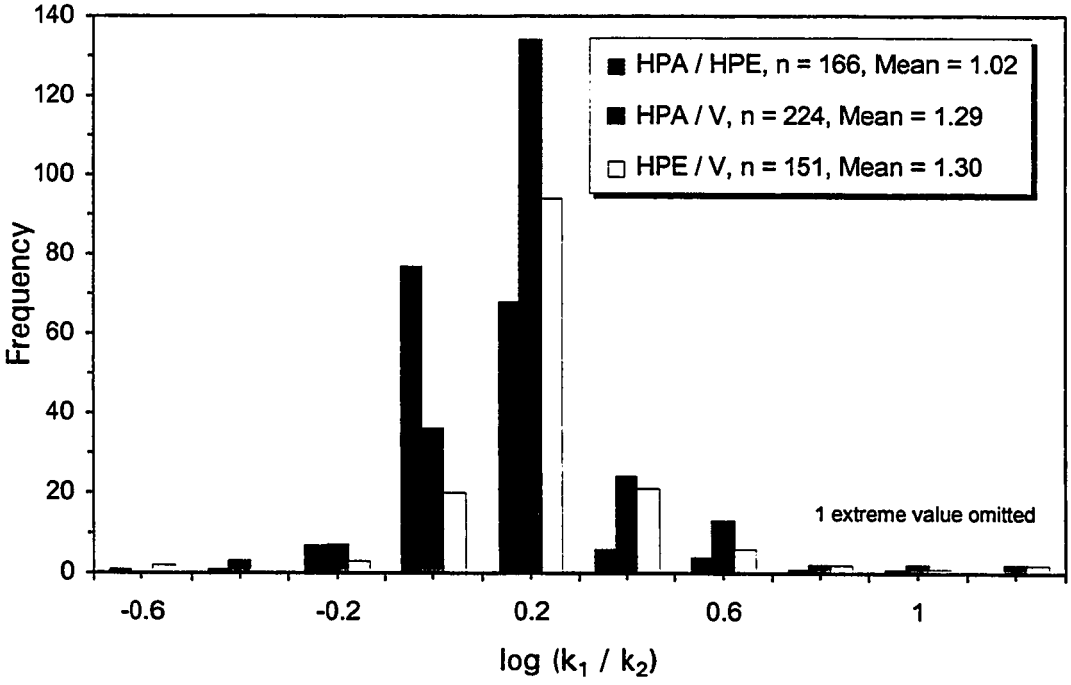

Figure 36 - Histogram of Lithofacies 2 permeability ratios (log-transformed)

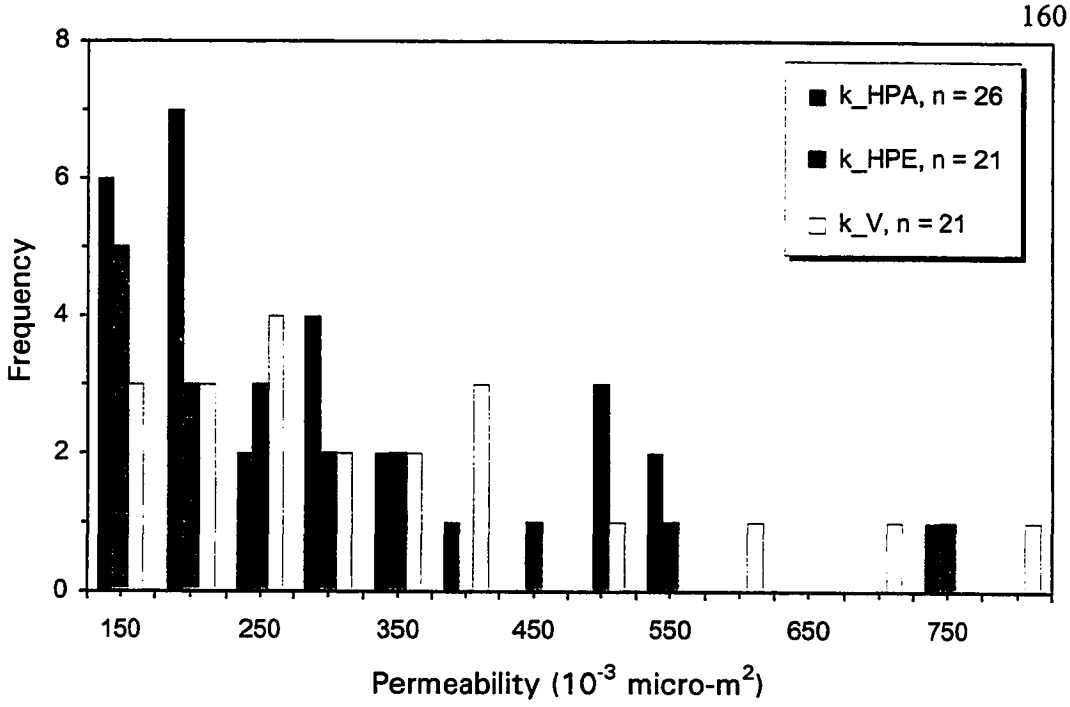

Figure 37 - Histogram of *burrowed* Lithofacies 2 permeabilities (raw).

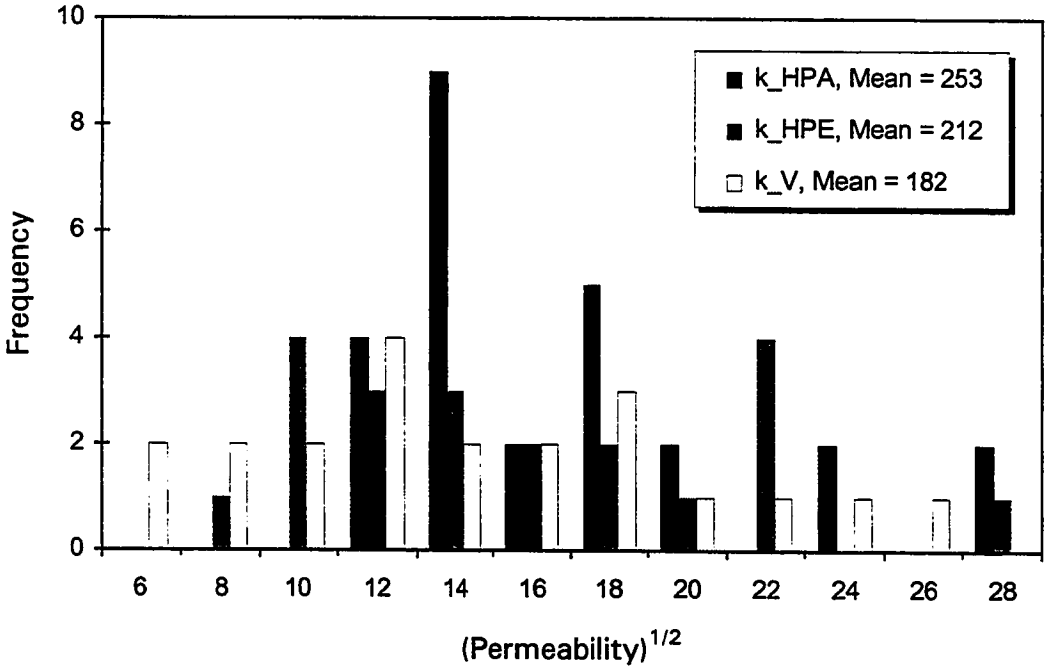

Figure 38 - Histogram of *burrowed* Lithofacies 2 permeabilities (square-root transformed).

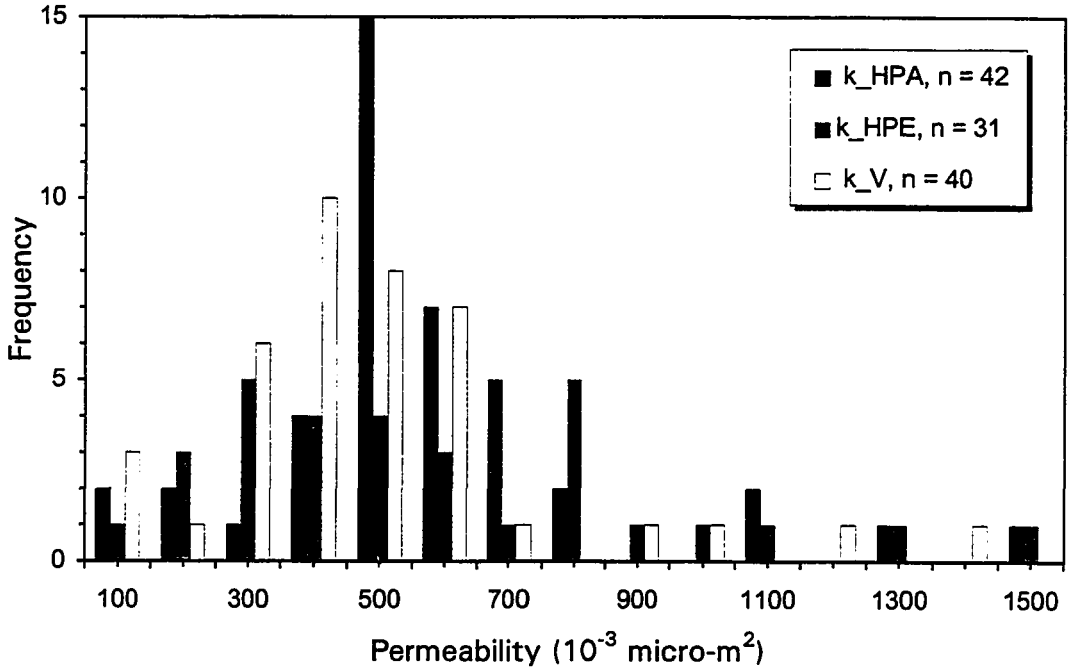

Figure 39 - Histogram of *bioturbated* Lithofacies 2 permeabilities (raw)

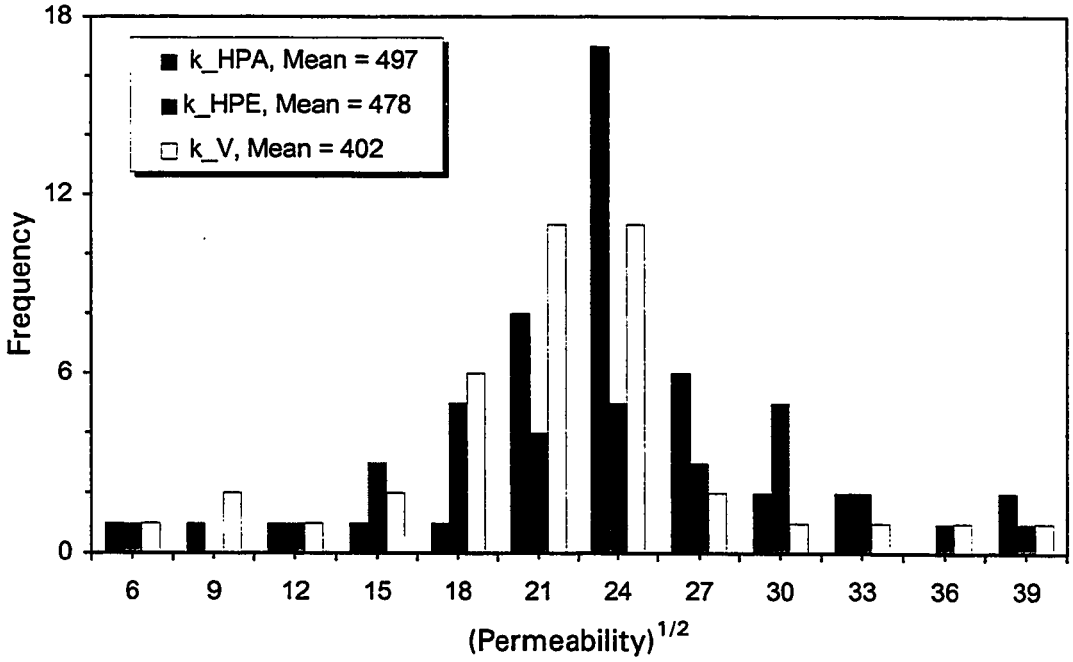

Figure 40 - Histogram of *bioturbated* Lithofacies 2 permeabilities (square-root transformed).

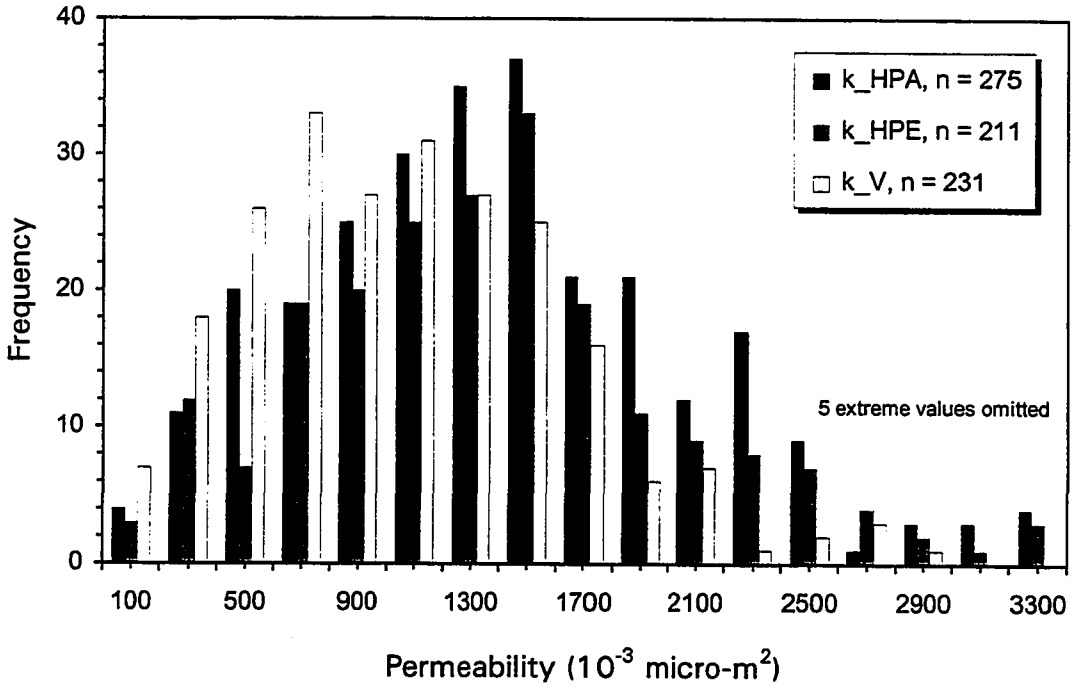

Figure 41 - Histogram of lithofacies 3 permeabilities (raw).

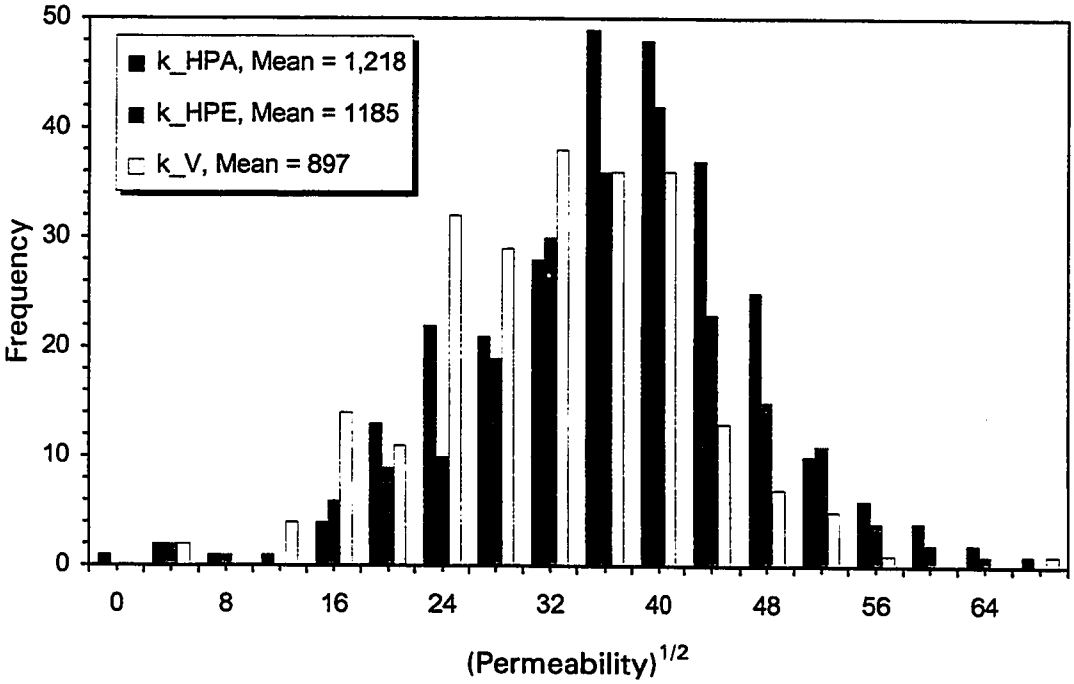

Figure 42 - Histogram of lithofacies 3 permeabilities (square-root transformed).

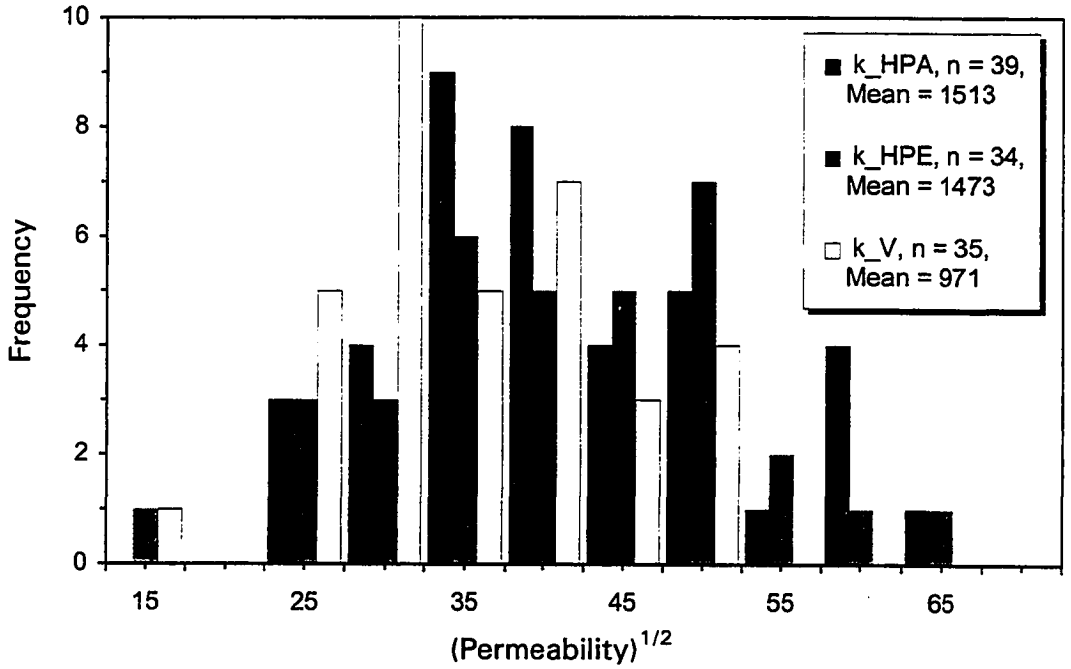

Figure 43 - Histogram of 2D-crossbedded lithofacies 3a permeabilities (square-root transformed).

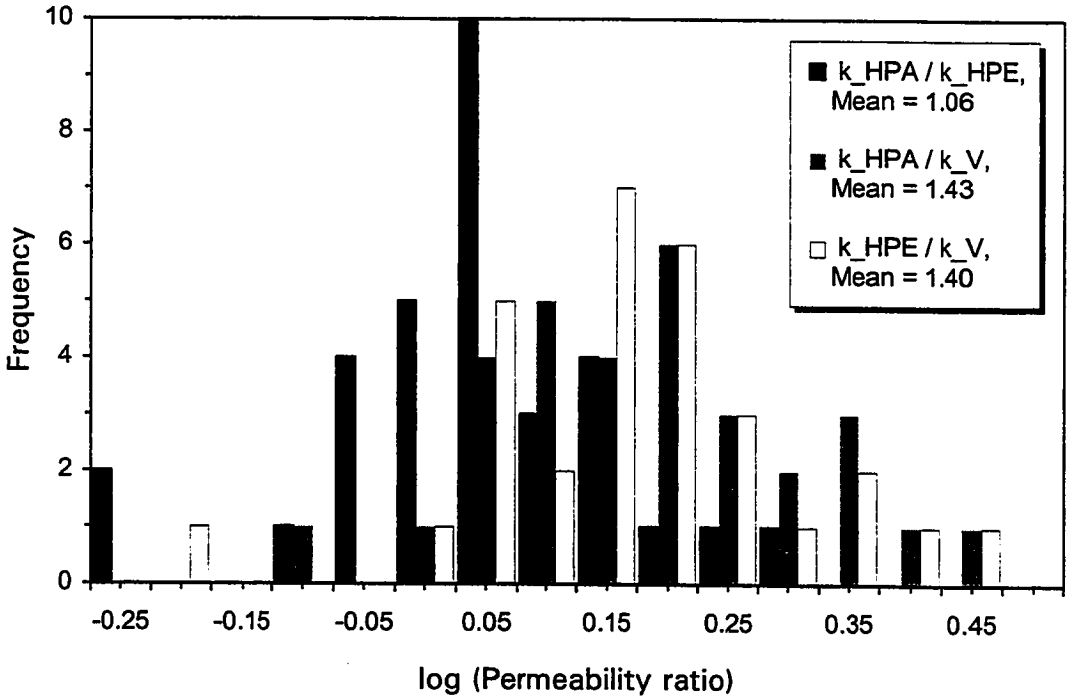

Figure 44 - Histogram of 2D-crossbedded lithofacies 3a permeability ratios (log transformed).

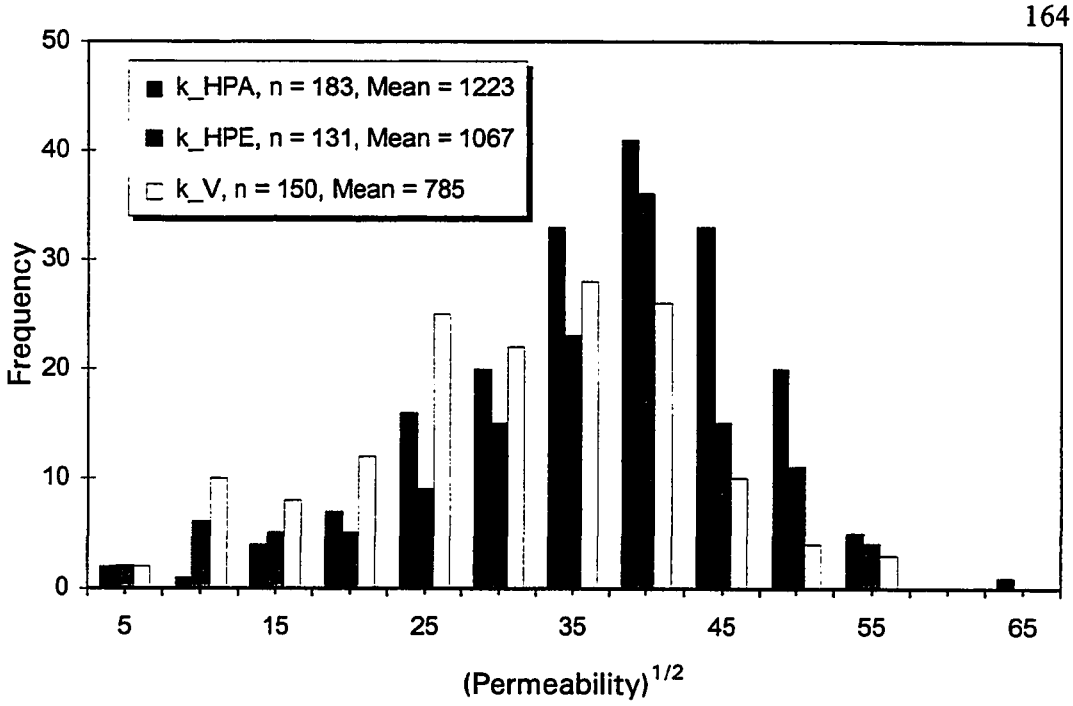

Figure 45 - Histogram of 3D-crossbedded lithofacies 3a permeabilities (square-root transformed).

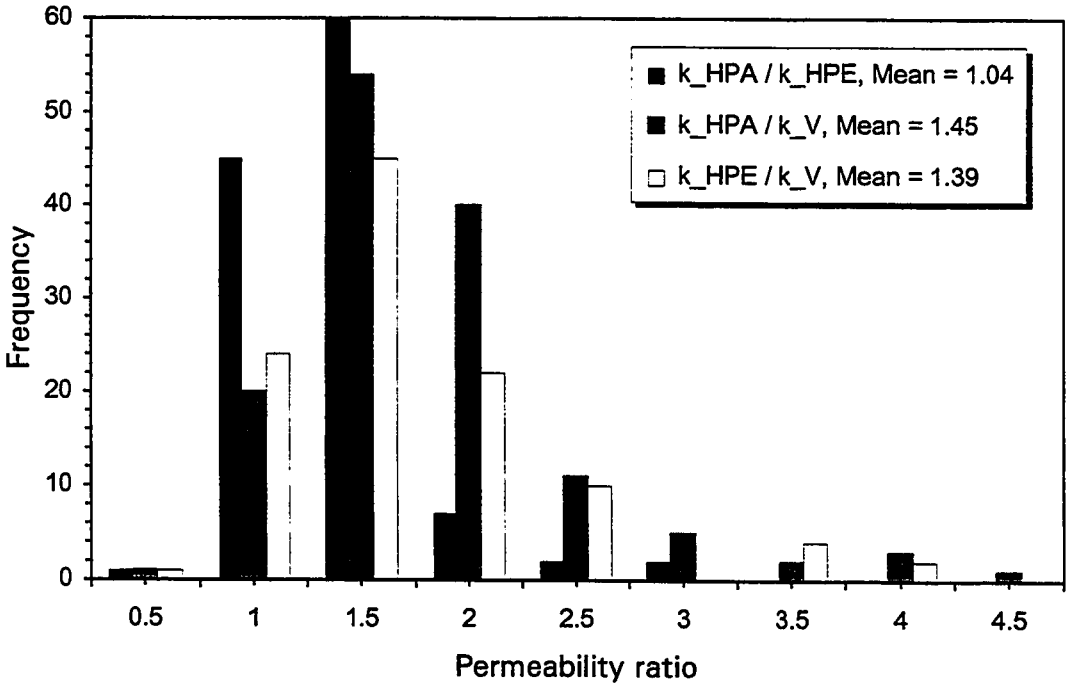

Figure 46 - Histogram of 3D-crossbedded lithofacies 3a permeability ratios (raw).

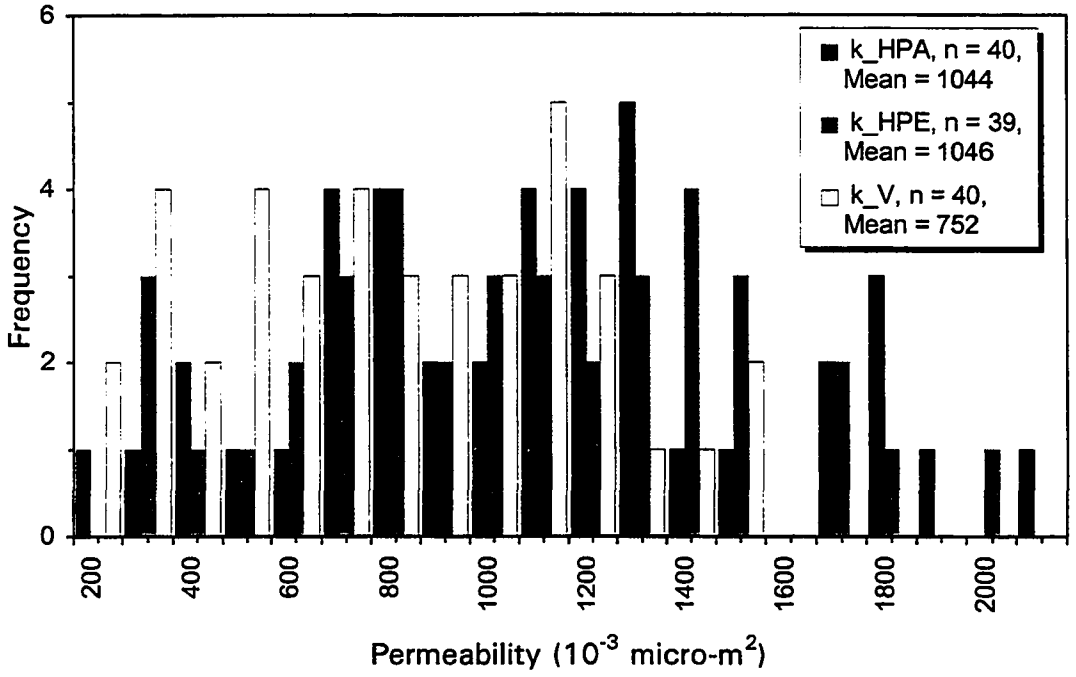

Figure 47 - Histogram of lithofacies 3b permeabilities (raw).

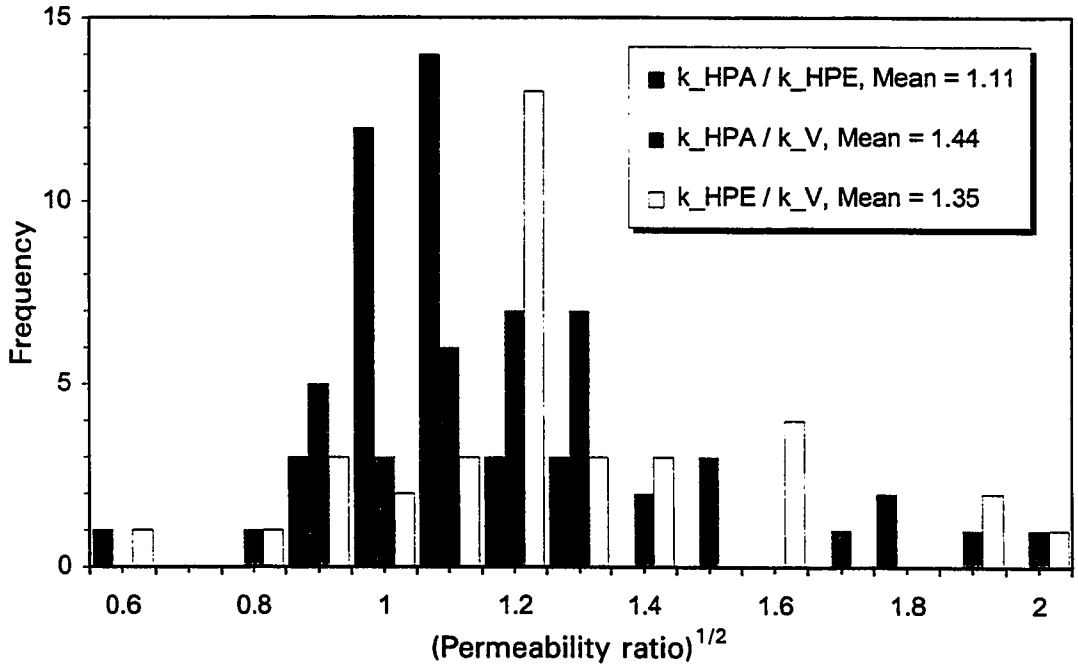

Figure 48 - Histogram of lithofacies 3b permeability ratios (square-root transformed).

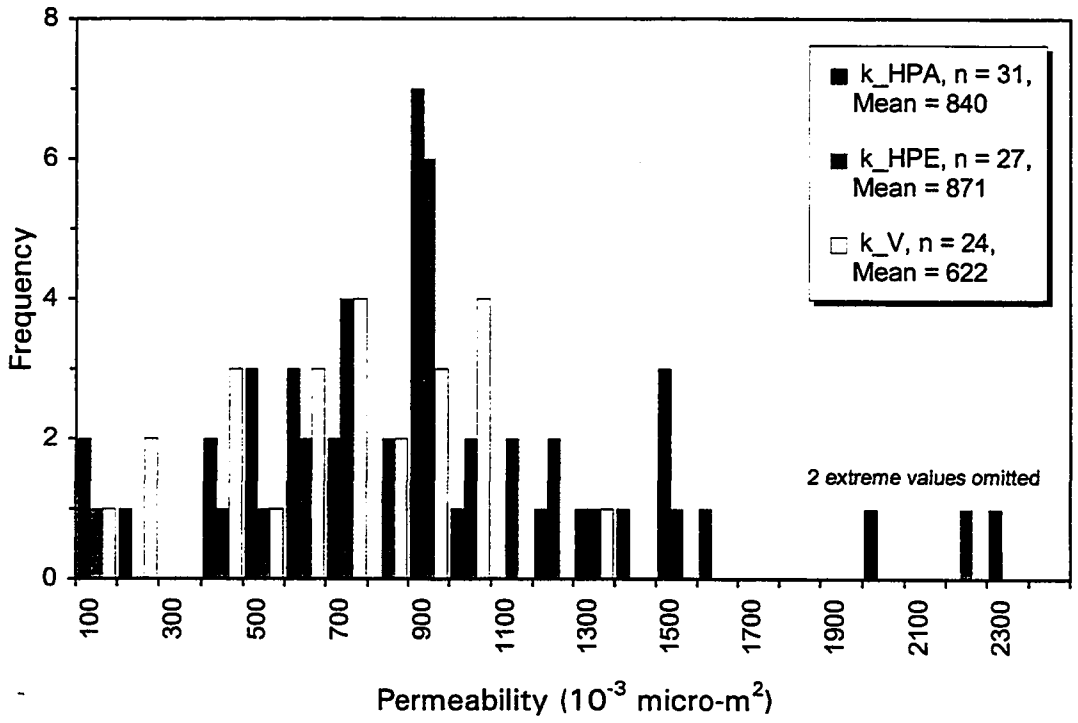

Figure 49 - Histogram of lithofacies 5 permeabilities (raw).

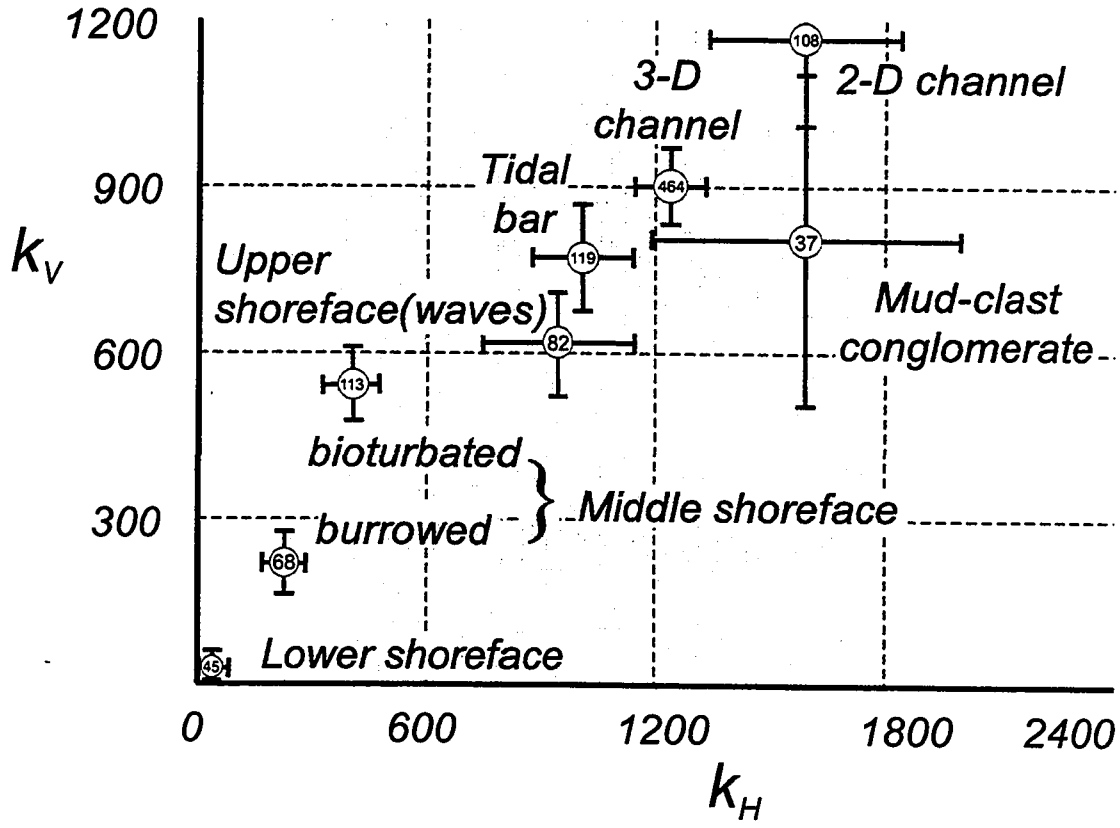

Figure 50 - Summary diagram of vertical vs. horizontal mean permeabilities of major lithofacies. Permeabilities are in 10^{-3} micro-m^2. Error bars around mean k correspond to untransformed 90 % confidence interval, and numbers in circles are the number of samples for each population.

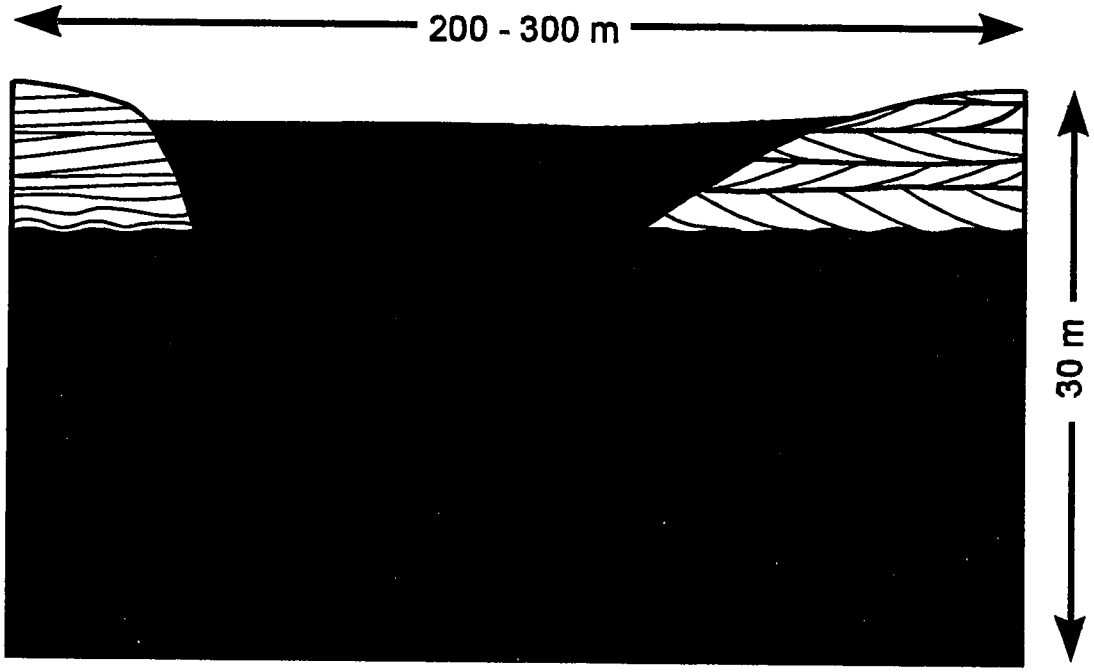

Figure 51 - Schematic cross-section of horizontal permeability distribution within the storm-dominated middle shoreface to estuarine depositional systems tract of the Virgelle Member at Writing-on-Stone Provincial Park. Low permeabilities are blue: the lower middle shoreface, burrowed intervals and the muddy/heterolithic abandoned channel fill. The zone of reduced permeability under the estuarine channel is due to mixing zone-enhanced dolomite cementation (discussed further in Chapter 4). Enhanced permeabilities in the shoreface are ascribed to microbioturbation. Progressively higher permeabilities are depicted in the upper shoreface (yellow), both tidal- and wave-dominated, and 2D and 3D estuarine channel dunes (red and orange, respectively).

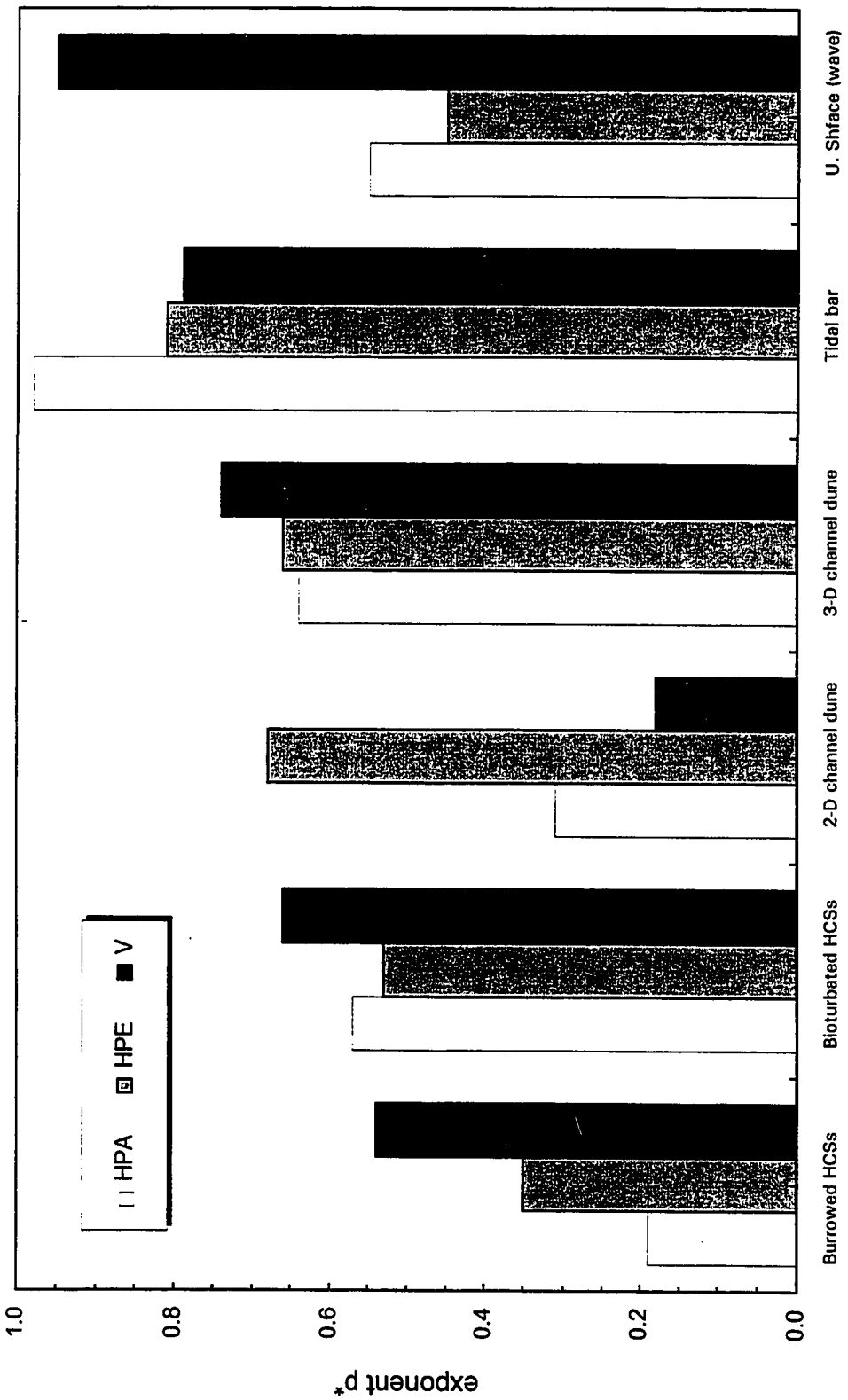

Figure 52 - Comparison of distribution types for different lithofacies

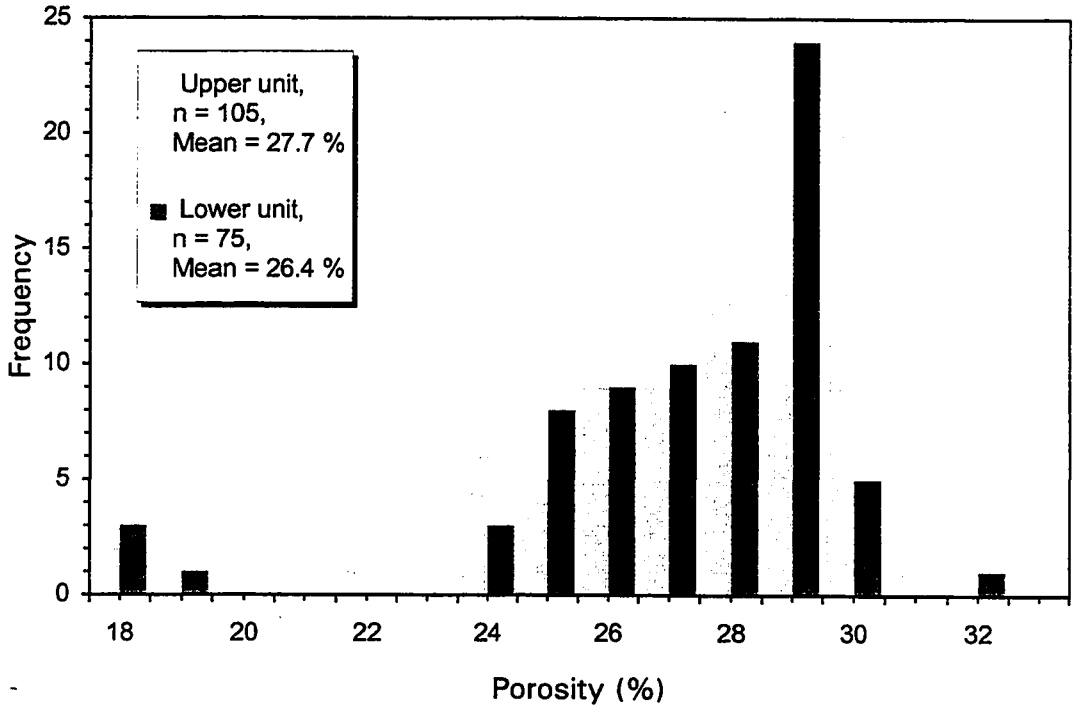

Figure 53 - Histogram of overall distribution of porosity.

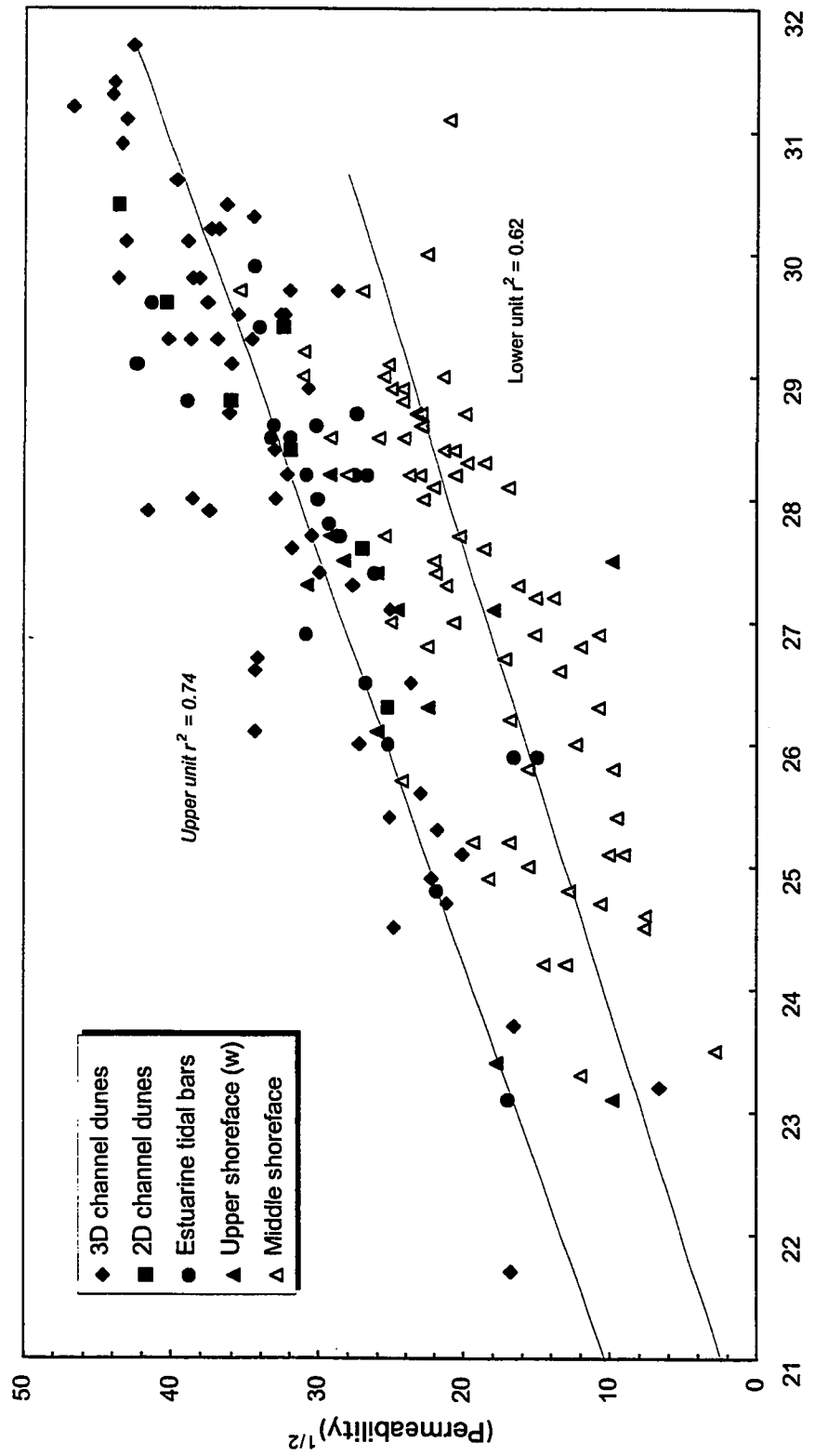

Figure 54 - Scatter-plot of lithofacies permeabilities (square-root transformed) against porosity

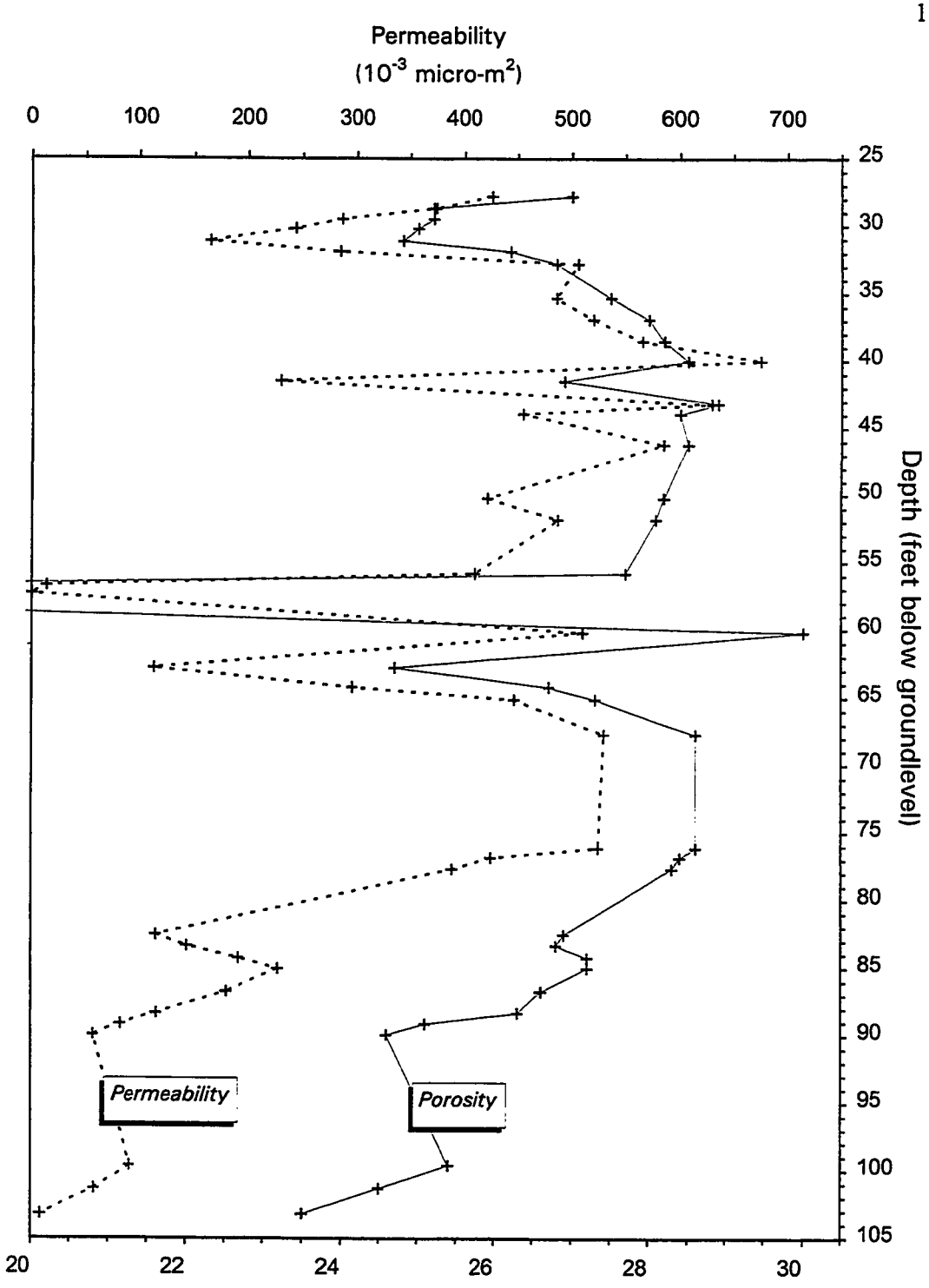

Figure 55 - Permeability and porosity vs. depth, middle to lower shoreface, Well 3.

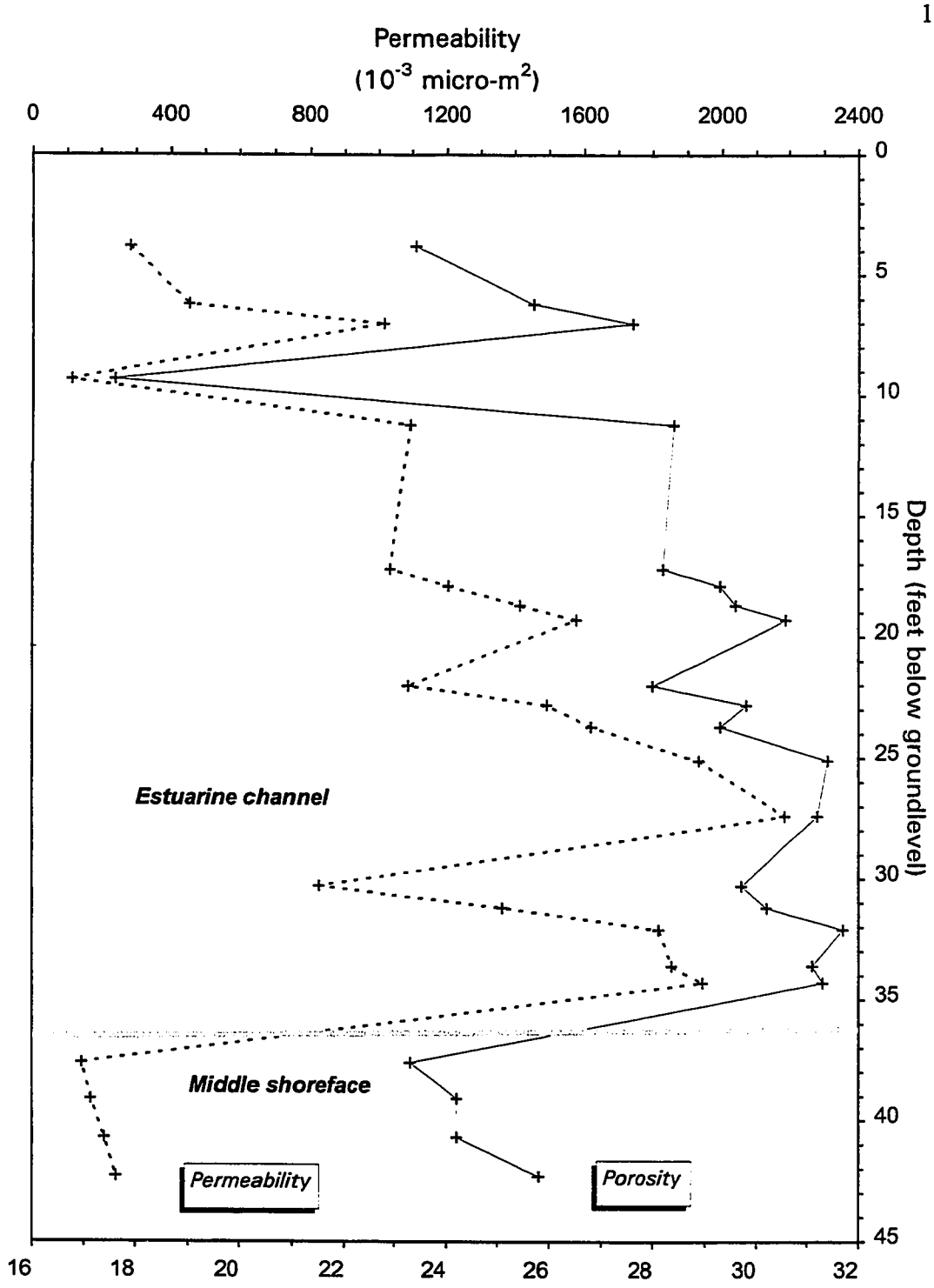

Figure 56 - Permeability and porosity vs. depth, estuarine channel, Well 4.

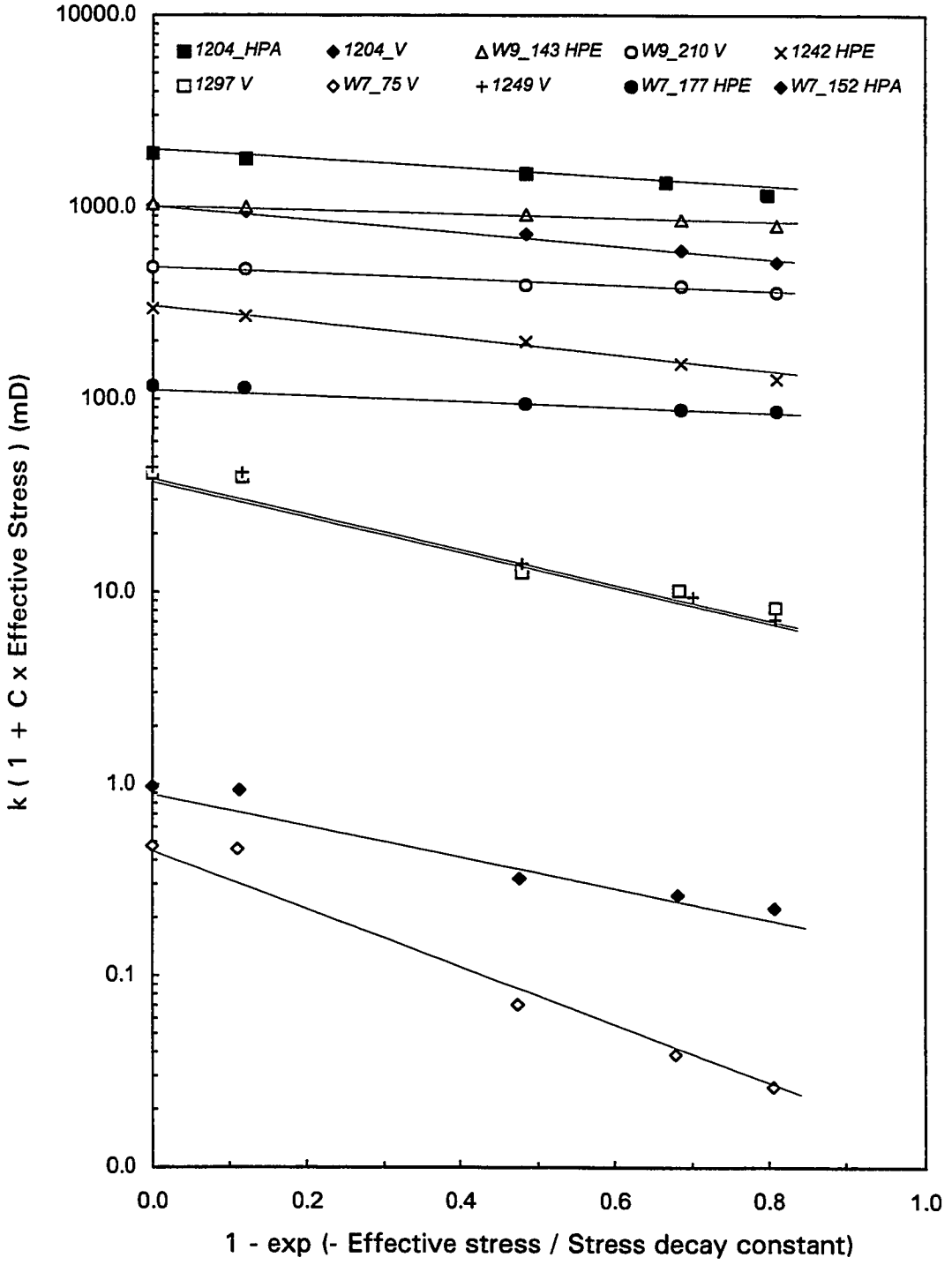

Figure 57 - Stress correction for plug permeabilities.

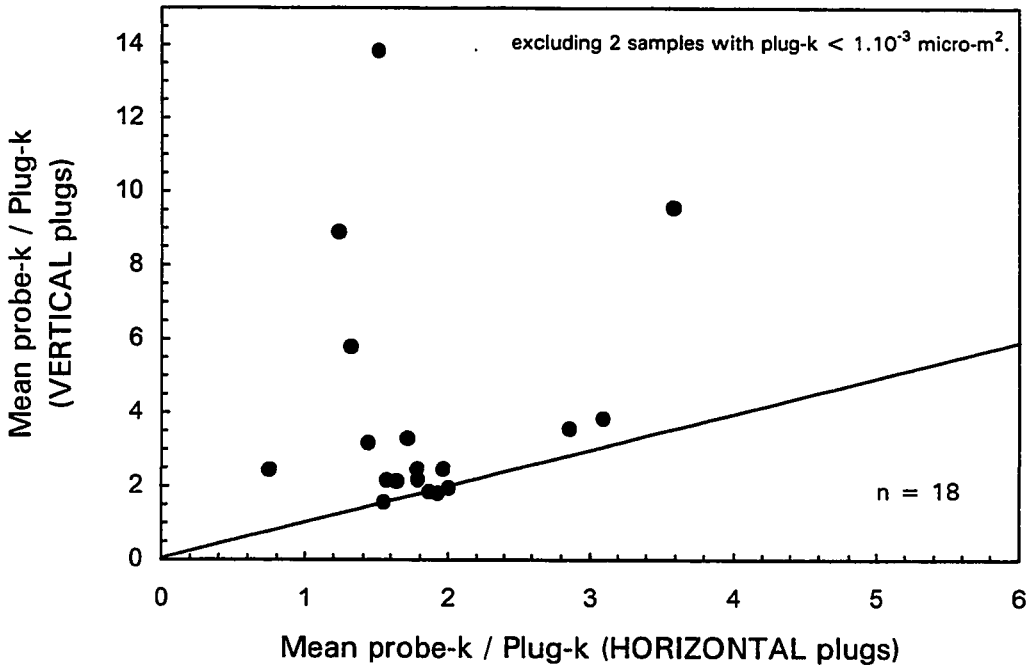

Figure 58 - Mean probe-k / Plug-k ratios compared between horizontal and vertical pairs of plugs.

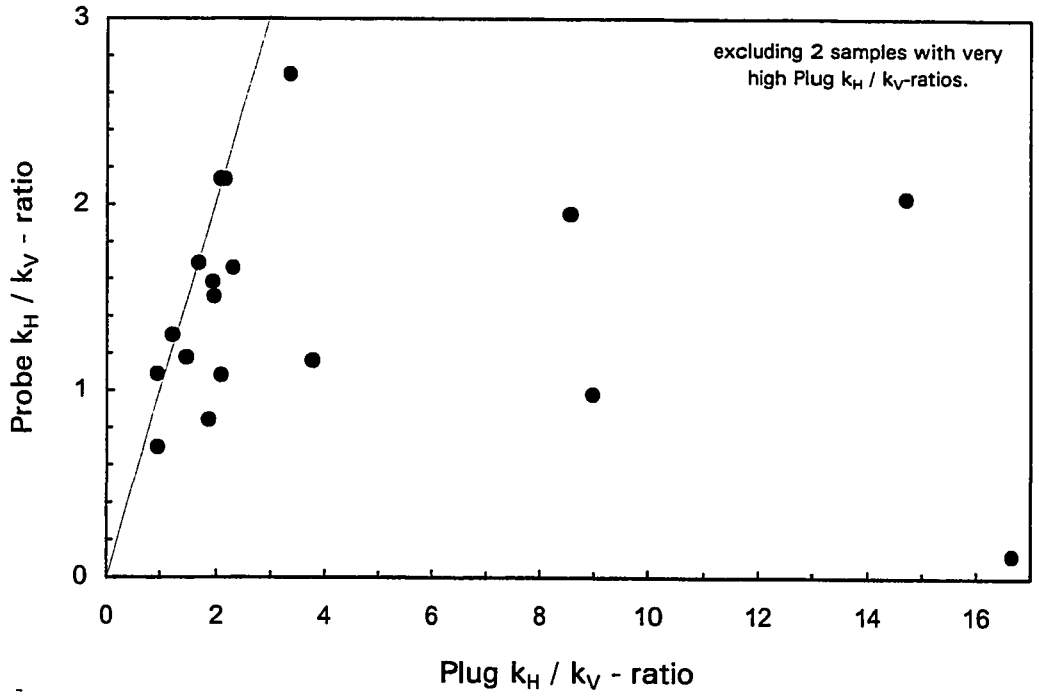

Figure 59 - Comparison between k_H / k_V - ratios for pairs of plugs and the corresponding probe k_H and k_V measurements.

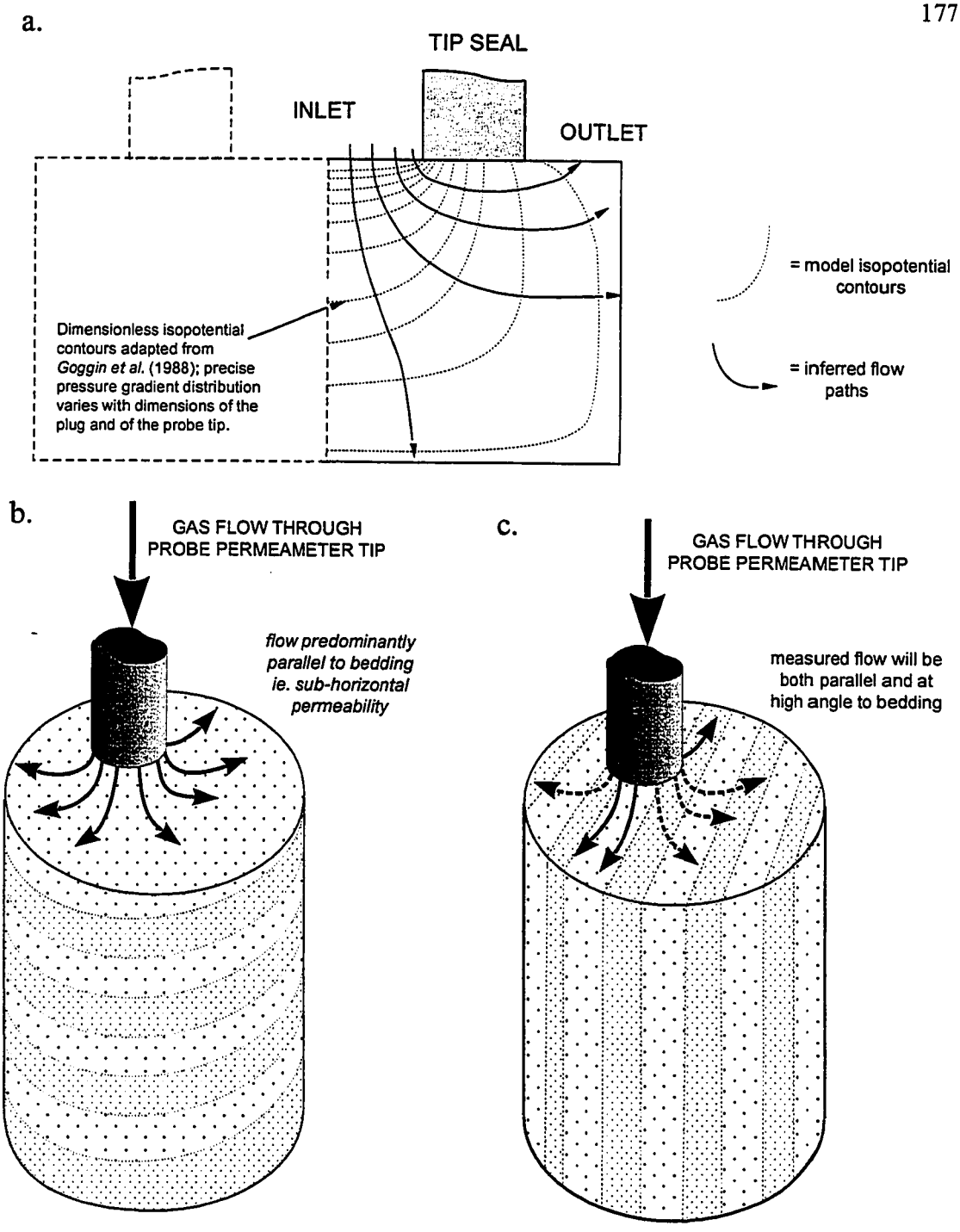

Figure 60 - Flow geometry for probe permeability measurements. a. Flow model derived by Goggin *et al.* (1988); potential gradients are greatest parallel to the sample surface. b. Vertical plug: probe measurements on the endfaces will largely reflect sub-horizontal permeability. c. Horizontal plug: probe measurements will respond to a mixture of flow paths, both parallel and perpendicular to bedding.

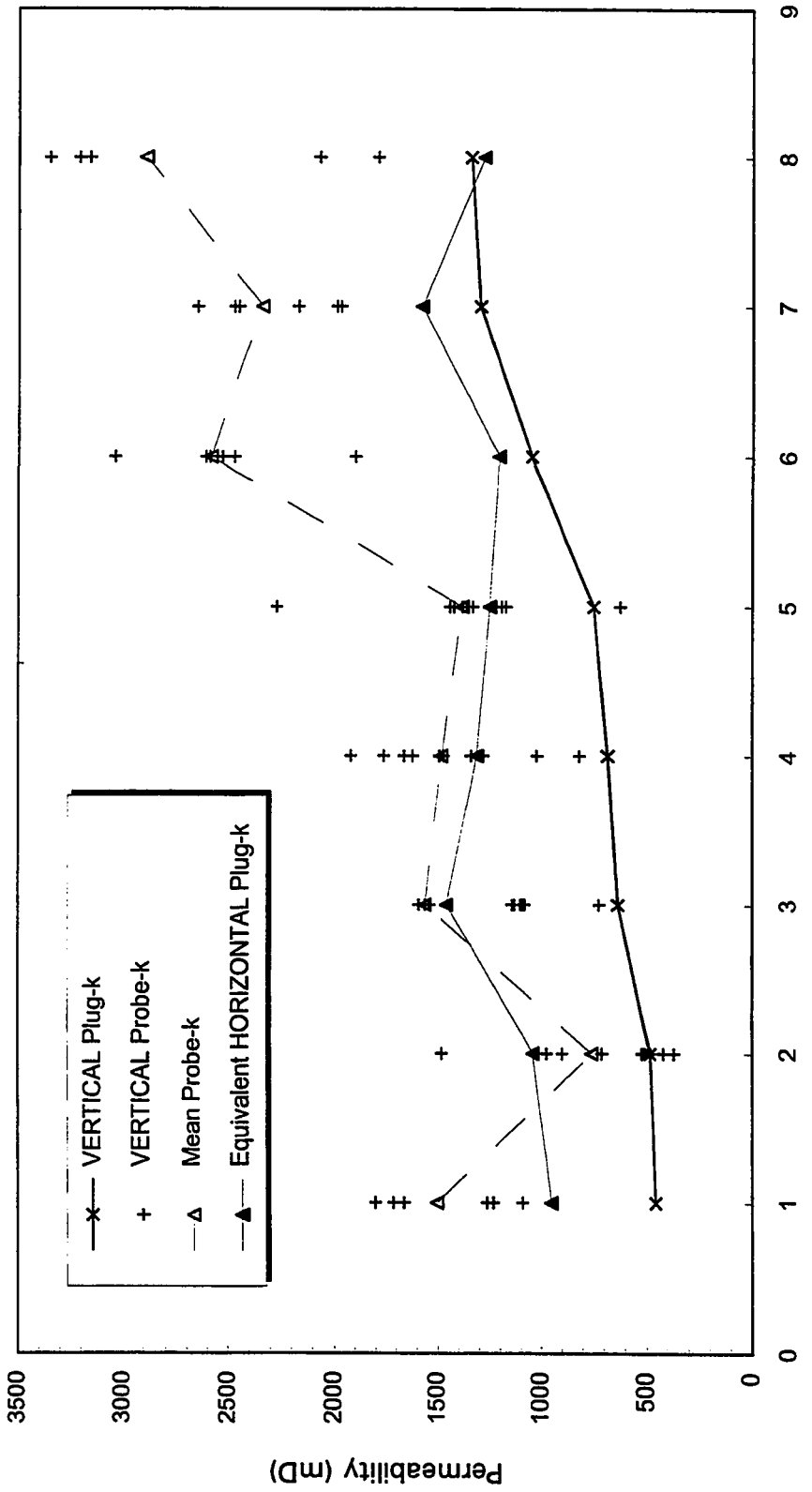

Figure 61 - Comparison of plug- and probe permeabilities for samples of lithofacies 3a-3D.

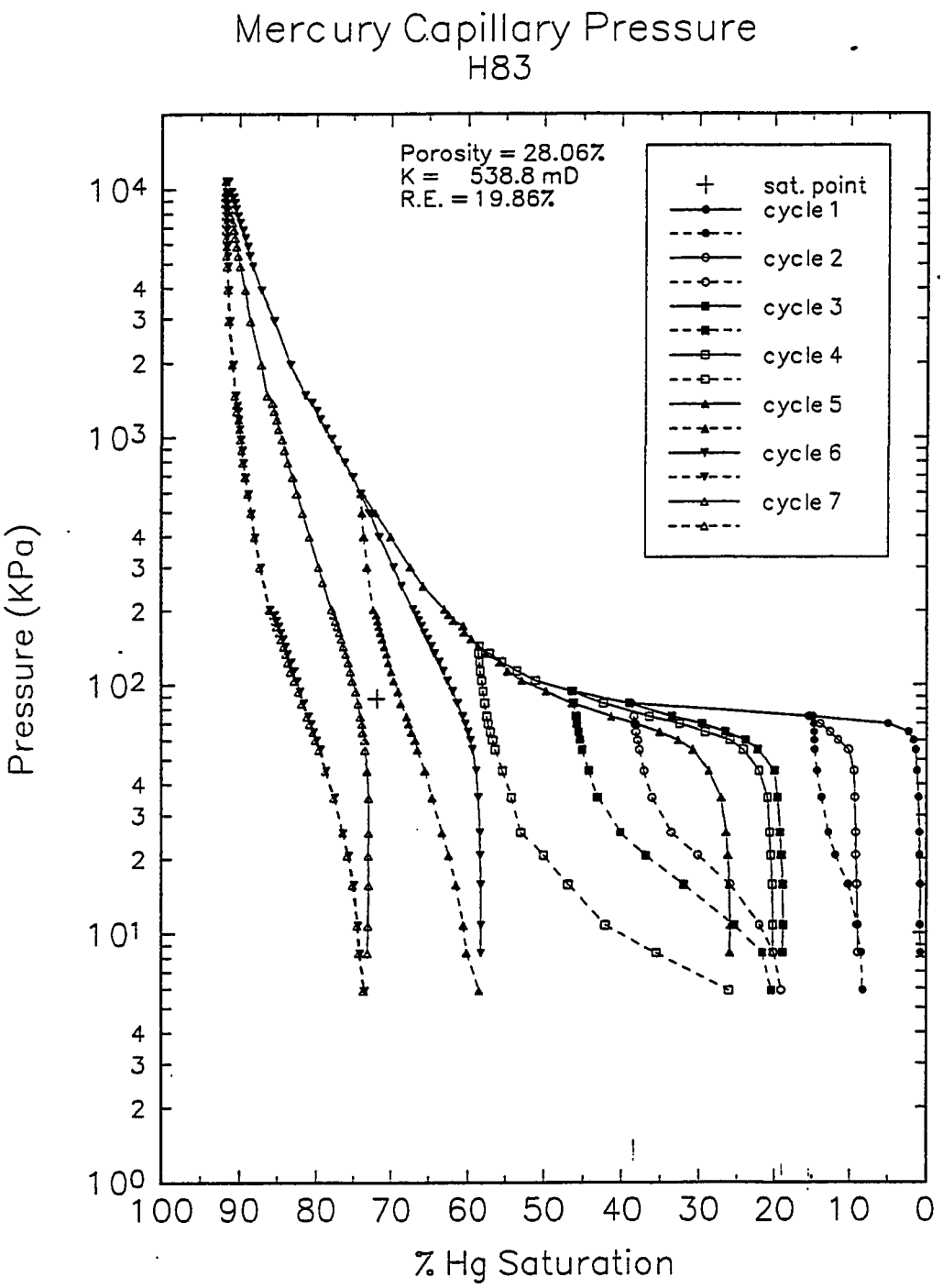

Figure 62a. Mercury capillary pressure curves for sample W9_83HPA.

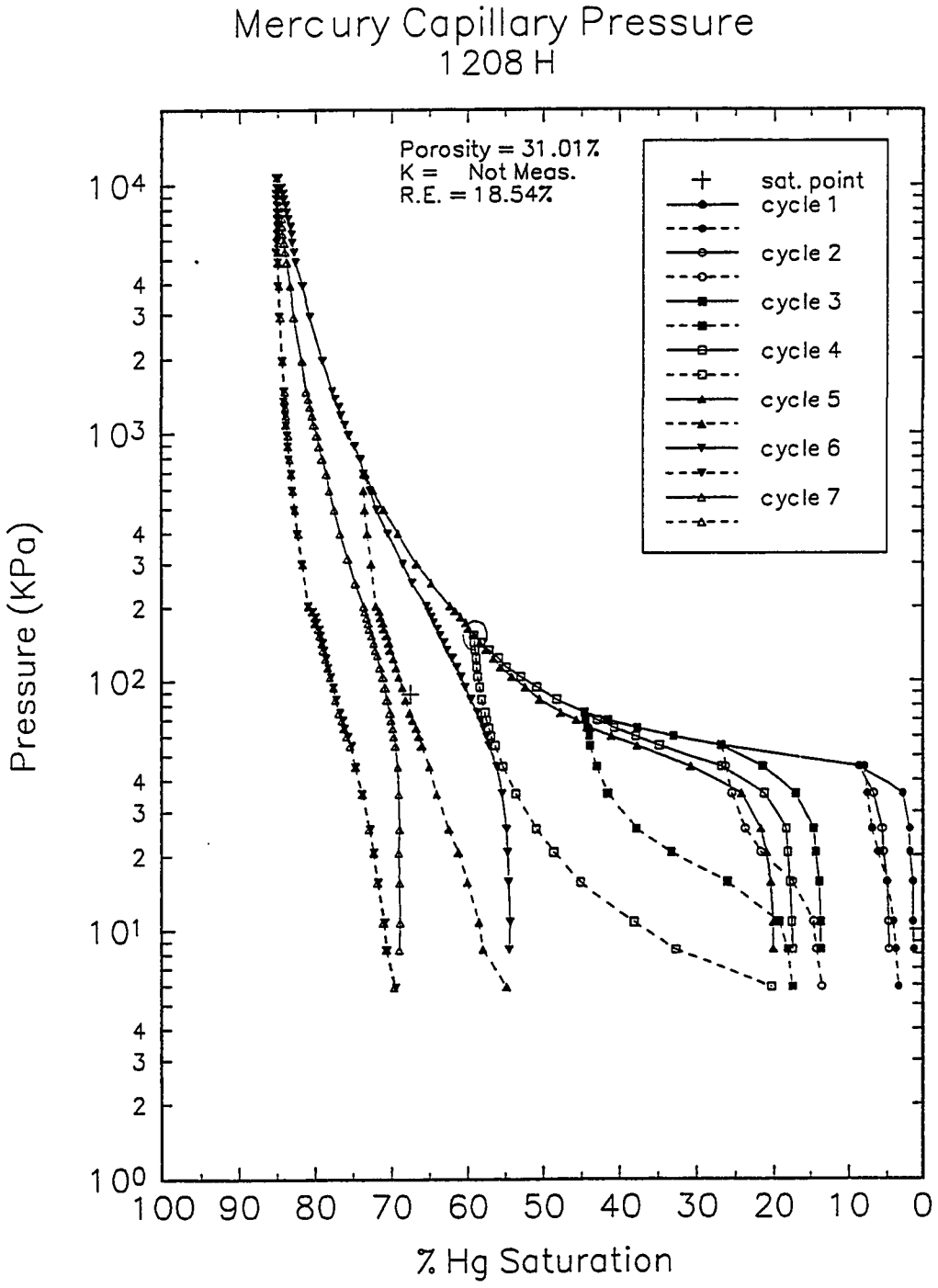

Figure 62b. Mercury capillary pressure curves for sample 1208HPA.

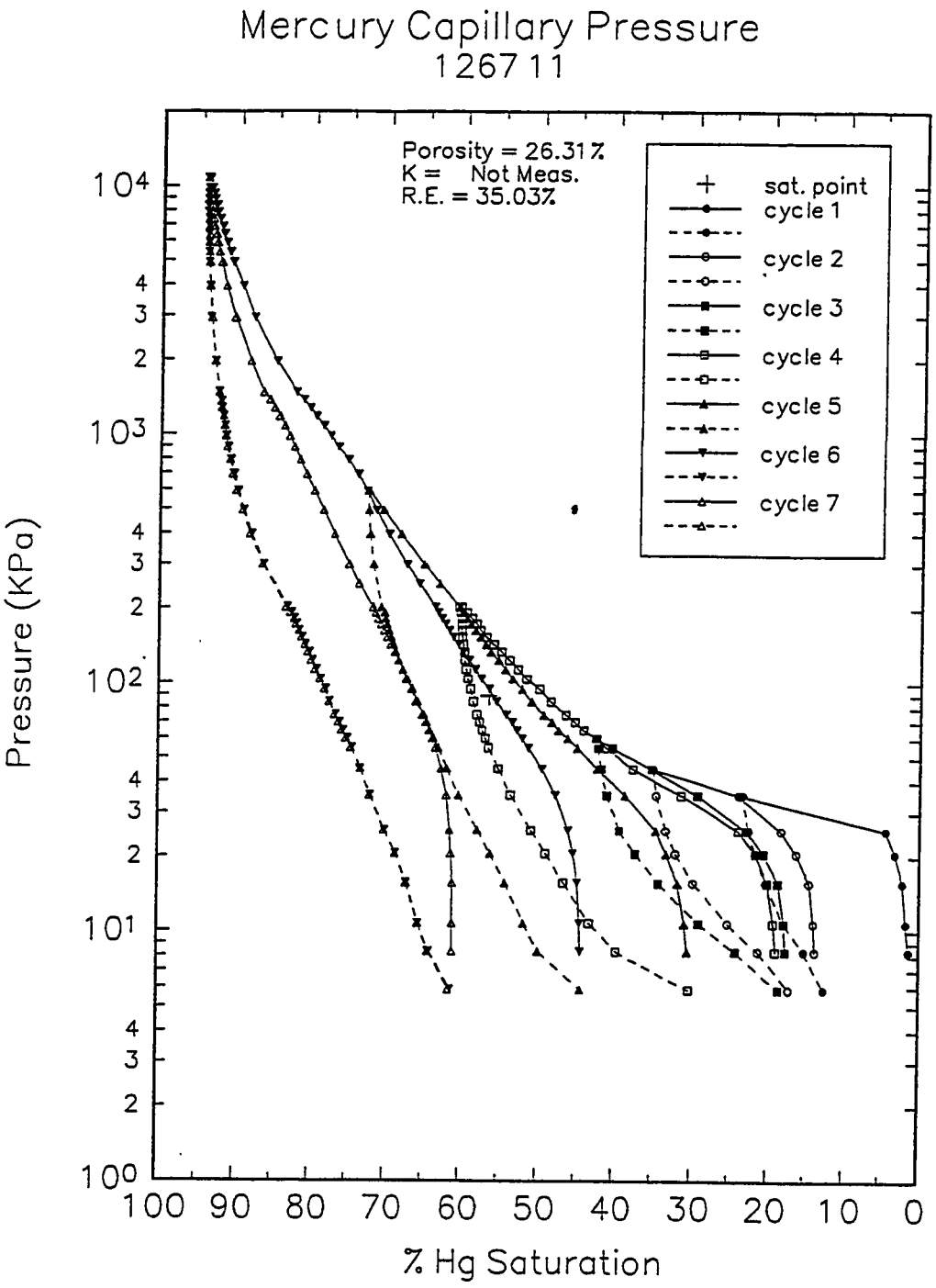

Figure 62c. Mercury capillary pressure curves for sample 1267HPA.

Table 3 - List of plug permeability samples by lithofacies and subsets.

Lithofacies (Subsets)	Horizontal (HPA)	Horizontal (HPE)	Vertical (V)
1	23	8	14
2	259	170	242
(2-BIOT)	42	31	40
(2-BUR)	26	21	21
3	262	204	225
(3a-2D)	39	34	35
(3a-3D)	183	131	150
3b	40	39	40
(3-LAM)	67	55	61
4	12	12	13
5	31	27	24
6	1	1	1
9	14	14	16

Table 4 - Statistical parameters of lithofacies permeability distributions

Legend

HPA = horizontal permeability, parallel to strike of bedding.
HPE = horizontal permeability, perpendicular to strike of bedding.
V = vertical permeability.

n = number of plugs in sample.
#1 / #2 = when there are two(2) values for the mean, the confidence interval (CI) or the coefficient of variation (C_v), #1 is the untransformed value and #2 is the transformed result; single values for the above variables are untransformed unless another transformation is specified.
p = power estimated to symmetrize the distribution.
Type = type of distribution inferred from p.

Classification	*Subsample*	*n*	*Mean*	*CI (90%)*	*Cv*	*p*	*Type*
Lithofacies 1	HPA	23	56 / 16	31 / 2.2	1.6 / 0.4	*	log
	HPE	8	78 / 35	60 / 2.5	1.3 / 0.1	*	log
	V	14	38 / 7	31 / 4.4	1.9 / 1.1	*	log
Lithofacies 2	HPA	259	404.4	27.2	0.66	0.80	normal**
	HPE	170	459.6	36.9	0.64	0.78	normal**
	V	242	357 / 297	27 / 6	0.7 / 0.2	0.69	square-root**
Ratios	HPA / HPE	166	1.11 / 1.02	0.07	0.60	0.01	log
	HPA / V	224	1.57 / 1.29	0.15	1.10	0.22	log
	HPE / V	151	1.55 / 1.30	0.16	1	0.13	log
BUR	HPA	26	275 / 253	58 / 3	0.60	0.19	log
	HPE	21	239 / 212	60 / 4	0.70	0.35	square-root
	V	21	214 / 182	62 / 4	0.80	0.54	square-root
BUR ratios	HPA / V	21	2.3				log
	HPE / V	17	1.9				log
BIOT	HPA	26	535 / 497	71 / 4	0.5	0.57	square-root
	HPE	21	533 / 478	100 / 5	0.6	0.53	square-root
	V	21	441 / 402	69 / 4	0.6	0.66	square-root
BIOT ratios	HPA / V	39	1.2				log
	HPE / V	25	1.3				log
Lithofacies 3	HPA	275	1330 / 1218	86 / 4	0.5	0.67	square-root
	HPE	211	1286 / 1185	91 / 4	0.5	0.66	square-root
	V	229	981 / 897	78 / 4	0.6	0.61	square-root
3a-2D	HPA	39	1618 / 1513	228 / 7	0.5	0.31	square-root
	HPE	34	1596 / 1473	239 / 8	0.5	0.68	square-root
	V	35	1133 / 971	165 / 1	0.5	0.18	log

Classification	*Subsample*	*n*	*Mean*	*CI (90%)*	*Cv*	*p*	*Type*
3a-2D ratios	HPA/HPE	32	1.07 / 1.06	0.08 / 0.09	0.26	0.35	square-root
	HPA / V	31	1.49 / 1.43	0.13 / 0.8	0.29	0.05	log
	HPE / V	30	1.46 / 1.40	0.13 / 0.8	0.30	0.03	log
3a-3D	HPA	183	1325 / 1223	81 / 4	0.5	0.64	square-root
	HPE	131	1186 / 1067	94 / 5	0.5	0.66	square-root
	V	150	902 / 785	80 / 5	0.7	0.74	square-root (nor)
3a-3D ratios	HPA/HPE	117	1.04	0.15	0.34		log
	HPA / V	138	1.45	0.14	0.55		log
	HPE / V	109	1.39	0.17	0.93		log
3b	HPA	40	1044	123	0.5	0.98	normal
	HPE	39	1046	134	0.5	0.81	normal
	V	40	752	96	0.5	0.79	normal
3b ratios	HPA/HPE	38	1.16 / 1.11	0.14 / 0.14	0.46	0.29	square-root
	HPA / V	38	1.53 / 1.44	0.23 / 0.20	0.56	0.40	square-root
	HPE / V	36	1.54 / 1.35	0.22 / 0.87	0.52	0.24	log (sq.rt.)
3-LAM	HPA	67	1491 / 1389	157 / 6	0.5	0.59	square-root
	HPE	55	1362 / 1266	143 / 6	0.5	0.74	square-root (nor)
	V	61	924 / 819	130 / 6	0.7	0.50	square-root
	HPA / V	58	2	0.2	0.6		
	HPE / V	52	2	0.5	1		

Lithofacies 4	HPA	12	1571	351	0.47		
	HPE	12	1594	502	0.66		
	V	13	791	301	0.83		
	Hmean / V	12	5.5	2.6	1		

Lithofacies 5	HPA	31	948 / 840	199 / 7	0.7	0.55	square-root
	HPE	27	944 / 871	187 / 6	0.6	0.45	square-root
	V	24	622	96.0	0.5	0.95	normal
	HPA/HPE	25	0.96	0.1	0.3		
	HPA / V	22	1.26	0.1	0.3		
	HPE / V	20	1.56	0.3	0.6		

Lithofacies 9	HPA	14	1143	566	1.1		
	HPE	14	603	470	1.8		
	V	16	584	513	2.1		
	HPA/HPE	13	8.2	3.9	1.1		
	HPA / V	13	8.6	1.0	1		
	HPE / V	14	1.3	0.4	0.4		

Notes:

* = the test for a power transformation is not accurate with very high coefficients of variation.

** = the raw distribution is polymodal, case in which the test is misleading.

Table 5 - Results of t-tests.

Legend

DIFF = calculated t-statistic is higher than the critical 2-tail statistic and therefore the null hypothesis is rejected i.e. the two samples come from populations with different means.

NOT DIFF = calculated t-statistic is lower than the critical 2-tail statistic and therefore the null hypothesis cannot be rejected and there is no evidence from this test that the two samples come from populations with different means.

Lithofacies 3 (horizontal)	3a-3D_HPA	3a-3D_HPE	3b_HPA	3b_HPE
3a-2D_HPA	DIFF	DIFF	DIFF	DIFF
3a-2D_HPE	DIFF	DIFF	DIFF	DIFF
3b_HPA	DIFF	*NOT DIFF*		
3b_HPE	DIFF	*NOT DIFF*		

Lithofacies 3 (vertical)	3a-3D_V	3a-2D_V
3a-2D_V	DIFF	
3b_V	DIFF	DIFF

Lithofacies 4 and 3a-2D	4_HPA	4_HPE	4_V
3a-2D_HPA	*NOT DIFF*	*NOT DIFF*	
3a-2D_HPE	*NOT DIFF*	*NOT DIFF*	
3a-2D_V			*NOT DIFF*

Lithofacies 5 and 3b	5_HPA	5_HPE	5_V
3b_HPA	*NOT DIFF*	*NOT DIFF*	
3b_HPE	*NOT DIFF*	*NOT DIFF*	
3b_V			*NOT DIFF*

Lithofacies 5 and 2	5_HPA	5_V
2_HPA	DIFF	
2_HPE	DIFF	
2_V		DIFF

Table 6 - Statistical parameters of lithofacies porosity and porosity-permeability correlations.

Legend

n = number of plugs in sample.
PHI_{mean} = mean porosity of sample (%)
s = standard deviation of porosity sample mean (%).
k_{mean} = mean permeability of sample (10^{-3} micro-m^2)
r = porosity-permeability correlation coefficient (dimensionless).

Classification	*Sample*	*n*	PHI_{mean}	*s*	k_{mean}	*r*
Upper unit	all	105	27.7	2.7	1009	0.81
	3a-3D	59	27.9	3.2	1138	0.84
	3a-2D	7	28.6	1.4	1184	0.90
	3b	24	27.7	1.6	898	0.79
	5	12	26.6	1.7	563	0.60
Lower unit	all	75	26.3	4.0	381	0.60
	2	73	26.4	4.1	357	0.60
	1	2	25.4			

Table 7 - Stress corrections for selected plug permeability samples and comparison with probe permeameter permeabilities.

Legend

Stress = effective stress (MPa).

k_{gas} = measured plug gas permeability (10^{-3} micro-m^2).

$1\text{-}exp^{(-stress/stress^*)}$ = stress decay (dimensionless).

k (1+C x Stress) = stress-corrected plug permeability (10^{-3} micro-m^2).

k_{PROBE} = probe permeability measurements at zero stress;

median, maximum and minimum values are listed (10^{-3} micro-m^2).

Diff = difference between probe and plug permeability at zero stress (%).

Scatter = measure of sample scatter = (Max / Min) x Mean

SAMPLE	Stress	k_{gas}	$1\text{-}exp^{(-s/s^*)}$	k (1+C x Stress)	k_{PROBE}	Diff.
1204	0.00		0.00	*1898.0*	2510	32
HPA	2.7	1773.22	0.12	1775.3	2520	33
	13.7	1482.95	0.48	1491.8	2700	42
	22.7	1330.24	0.67	1343.4	2720	43
	33.1	1139.90	0.80	1156.3	2880	52
					2980	57
Comments: discontinuous carbonaceous laminae. Lithofacies 3b.				Median =	2710	43
				Maximum =	2980	57
				Minimum =	2510	32

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
W9_143	0.00		0.00	*1039.27*	1110	7
HPE	3	999.52	0.12	1000.68	1130	9
	14	906.42	0.48	911.82	1530	47
	24	849.17	0.69	858.05	1540	48
	34	790.70	0.81	802.52	1590	53
					1610	55
					1680	62
					1730	66
					1920	85
					2280	119
Comments: indistinct lamination; sideritic. Lithofacies 3a-3D.				Median =	1600	54
				Maximum =	2280	119
				Minimum =	1110	7

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
1242	0.00		0.00	*294.13*	103	-65
HPE	2.64	267.74	0.12	268.05	111	-62
	13.66	196.85	0.48	198.02	266	-10
	23.99	151.08	0.69	152.66	282	-4
	34.33	124.64	0.81	126.50	347	18
					472	60
					500	70
					500	70
					505	72
					539	83
Comments: micaceous-carbonaceous laminae. Lithofacies 5.				Median =	410	39
				Maximum =	539	83
				Minimum =	103	-65

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
W7_177	0.00		0.00	*116.52*	55	-52
HPE	2.62	113.12	0.12	113.24	62	-46
	13.65	93.15	0.48	93.70	89	-24
	23.99	86.64	0.69	87.54	89	-23
	34.34	84.45	0.81	85.71	91	-22
					92	-21
					97	-17
					102	-12
				Median =	90	-22
				Maximum =	102	-12
				Minimum =	55	-52

Comments: thin laminae; cemented.
Lithofacies 2.

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
W7_152	0.00		0.00	*0.98*	1.4	44
HPA	2.48	0.94	0.11	0.94	1.6	60
	13.38	0.32	0.48	0.32	3.1	215
	23.73	0.26	0.68	0.26	3.2	228
	34.05	0.22	0.81	0.22	4.0	311
					21.8	2131
				Median =	3.1	221
				Maximum =	21.8	2131
				Minimum =	1.4	44

Comments: bioturbated, burrowed; muddy.
Lithofacies 2.

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
1204	0.00		0.00	*1019.60*	1510	48
V	2.66	941.96	0.12	943.05	3010	195
	13.69	717.53	0.48	721.80	3200	214
	24.03	586.42	0.69	592.55	3410	234
	34.37	506.53	0.81	514.10	4030	295
					4210	313
				Median =	3305	224
				Maximum =	4210	313
				Minimum =	1510	48

Comments: carbonaceous laminae.
Lithofacies 3b.

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
W9_210	0.00		0.00	*483.35*	386	-20
V	2.65	470.79	0.12	471.33	438	-9
	13.68	386.25	0.48	388.55	503	4
	24.03	380.13	0.69	384.10	531	10
	34.37	352.11	0.81	357.37	543	12
					736	52
					930	92
					949	96
					1010	109
					1520	214
				Median =	640	32
				Maximum =	1520	214
				Minimum =	386	-20

Comments: indistinct lamination; siderittic.
Lithofacies 3a-3D.

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
1297	0.00		0.00	*41.32*	8	-81
V	2.57	39.29	0.12	39.33	12	-70
	13.50	12.49	0.48	12.56	17	-59
	23.85	10.03	0.68	10.13	193	367
	34.21	8.11	0.81	8.23	197	377
					653	1480
					973	2255
					1030	2393
					1160	2707
					1470	3458

Comments: small mudstone clasts.
Lithofacies 4.

Median =	425	929
Maximum =	1470	3458
Minimum =	8	-81

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
W7_75	0.00		0.00	*0.48*	1.4	193
V	2.43	0.46	0.11	0.46	2.0	315
	13.29	0.07	0.47	0.07	2.6	443
	23.56	0.04	0.68	0.04	4.5	845
	33.87	0.03	0.81	0.03	575.0	120416
				Median =	2.6	443
				Maximum =	575.0	120416
				Minimum =	1.4	193

Comments: laminated and microbioturbated.
Lithofacies 1.

SAMPLE	Stress	K-gas	1-e(-stress/	k(1+C*Stress)	PROBE	Diff.
1249	0.00		0.00	*44.16*	29	-34
V	2.57	41.30	0.12	41.35	33	-25
	13.51	13.88	0.48	13.96	37	-16
	25.01	9.28	0.70	9.38	89	102
	34.17	7.06	0.81	7.17	173	292
					177	301
					212	380
					217	391
					249	464
					279	532
					1440	3161
					2130	4723
				Median =	195	340
				Maximum =	2130	4723
				Minimum =	29	-34

Comments: very fine-grained sandstone clasts.
Lithofacies 4.

SUMMARY:
(samples sorted
by increasing k)

SAMPLE	Plug-$k_{stress=0}$	Median %-Diff.
W7_75V	0.48	443
W7_152HPA	0.98	221
1297V	41.3	929
1249 V	44.2	340
W7_177HPE	116.5	-22
1242HPE	294.1	39
W9_210V	483.4	32
1204V	1020	224
W9_143HPE	1039	54
1204HPA	1898	43

Table 8 - List of probe permeameter samples

Legend

k = plug permeability (10^{-3} micro-m^2).
MEAN = mean probe permeability (10^{-3} micro-m^2).
MEAN / k = mean probe / plug permeability (10^{-3} micro-m^2).
MAX, MIN = extreme values of probe permeability (10^{-3} micro-m^2).

SAMPLE	k	MEAN	MEAN / k	MAX	MIN	COMMENT
W8_19HPA	1180	2366	2.0	2820	1740	fL to mD; discont. laminae.
W8_114V	569	1107	1.9	1530	660	Lithofacies 3a-2D.
W7_177HPE	113	85	0.7	102	55	Thin lam.; cemented.
W7_90V	30	73	2.4	97.3	40	Lithofacies 2.
W7_148HPA	8	14	1.8	38.5	1.4	Lam., biot., burr., muddy.
W7_75V	0.48	117	244.0	575	1.4	Lithofacies 1.
W7_152HPA	0.98	5.8	6.0	21.8	1.4	Disc. carb. lam.; calc.
W7_78V	0.01	7	654.9	16.9	0.2	Lithofacies 1.
1204HPA	1898	2718	1.4	2980	2510	Carb. lam.
1204V	1020	3228	3.2	4210	1510	Lithofacies 3b.
W9_143HPE	1039	1612	1.6	2280	1110	Indistinct lam.; sid.
W9_210V	483	755	1.6	1520	386	Lithofacies 3a-3D.
W9_4HPA	1457	2590	1.8	3070	1600	Patchy cement.
W9_204V	633	1561	2.5	4310	751	Lithofacies 3a-3D.
1208 HPE	1169	1917	1.6	2360	1610	Thin, carb. lam.
1208V	598	1273	2.1	2150	696	Lithofacies 3b.
1224 HPE	2528	7215	2.9	5700	3170	Crs.; mudst chips.
1224 V	751	2670	3.6	4750	969	Lithofacies 4.
1242HPE	294	363	1.2	539	103	Mica-carb. lam.
1242 V	20	178	8.9	526	54	Lithofacies 5.
299 HPE	1249	2328	1.9	3850	1460	Thin, discont. lam.
299 V	746	1381	1.9	2330	649	Lithofacies 3a-3D.
1249HPE	974	3493	3.6	4250	200	Lg. ss clasts; cem.
1249V	44	422	9.6	2130	29	Lithofacies 4.

SAMPLE	k	MEAN	MEAN / k	MAX	MIN	COMMENT
1246HPE	3172	4171	1.3	5720	2670	Carb./mudst. lam, chips.
1246V	370	2139	5.8	4270	329	Fract. Lithofacies 4.
W9_137HPE	1313	2343	1.8	3090	1750	Disc. carb. lam.; patchy calc.
W9 205V	680	1481	2.2	1970	847	Lithofacies 3a-3D.
1297HPE	371	560	1.5	1210	20	Small mudst. clasts.
1297V	41	571	13.8	1470	8	Lithofacies 4.
W9a_57HPA	870	1603	1.8	2420	1060	Interval of fine gr. ss
W9a_13HPA	1037	1683	1.6	2590	1360	Well 4.
W9a_58HPE	1277	2007	1.6	2240	1780	1.2 m interval.
W9a_107V	1341	2892	2.2	3430	1840	Lithofacies 3a-3D.
W9a_108V	1048	2587	2.5	3110	1950	
W9a_14HPA	1205	2368	2.0	3620	1610	
W9a_59HPE	1268	2177	1.7	3430	1320	
W9a_15HPA	1418	2278	1.6	2900	1780	
W9a_16 HPA	1578	3040	1.9	3630	2320	
W9a_109V	1296	2342	1.8	2710	2020	
1229HPE	2288	7069	3.1	8370	5760	fU-crsU; diff., sid/oxide lam.
1229V	1566	6005	3.8	8200	4960	Lithofacies 3a-2D.
217HPA	951	1625	1.7	3090	629	Thin lam.
217V	456	1502	3.3	1850	1130	Lithofacies 3a-3D.
305V	219	392	1.8	467	284	fL;biot.;burr.Lith. 2.
1270V	180	286	1.6	746	34	Gr-purp-ocre palsol; Li. 9.

SAMPLE	k	MEAN	MEAN / k	MAX	MIN	COMMENT
HORIZONTAL	1194	2318	2.0			AVERAGE
VERTICAL*	605	1642	3.8			AVERAGE

* = excluding two very low-permeability samples ($k < 0.5\ 10^{-3}$ micro-m^2).

Table 9 - Results of the comparison of plug and probe permeabilities for pairs of equivalent horizontal and vertical plugs from lithofacies 3a-3D.

Legend

k = plug permeability (10^{-3} micro-m^2).

MEAN = mean probe permeability (10^{-3} micro-m^2).

MEAN / k = mean probe / plug permeability (10^{-3} micro-m^2).

MAX, MIN = extreme values of probe permeability (10^{-3} micro-m^2).

SAMPLE	k	MEAN	MEAN / k	MAX	MIN	COMMENT
W9_143HPE	1039	1612	1.6	2280	1110	Indistinct lam.; sid.
W9_210V	483	755	1.6	1520	386	Lithofacies 3a-3D.
W9_4HPA	1457	2590	1.8	3070	1600	Patchy cement.
W9_204V	633	1561	2.5	4310	751	Lithofacies 3a-3D.
299 HPE	1249	2328	1.9	3850	1460	Thin, discont. lam.
299 V	746	1381	1.9	2330	649	Lithofacies 3a-3D.
W9_137HPE	1313	2343	1.8	3090	1750	Disc. carb. lam.; patchy calc.
W9 205V	680	1481	2.2	1970	847	Lithofacies 3a-3D.
W9a_58HPE	1277	2007	1.6	2240	1780	Well 4.
W9a_107V	1341	2892	2.2	3430	1840	Lithofacies 3a-3D.
W9a_14HPA	1205	2368	2.0	3620	1610	Well 4.
W9a_108V	1048	2587	2.5	3110	1950	Lithofacies 3a-3D.
W9a_16 HPA	1578	3040	1.9	3630	2320	Well 4.
W9a_109V	1296	2342	1.8	2710	2020	Lithofacies 3a-3D.
217HPA	951	1625	1.7	3090	629	Thin lam.
217V	456	1502	3.3	1850	1130	Lithofacies 3a-3D.

SAMPLE	k	MEAN	MEAN / k	MAX	MIN	COMMENT
HORIZONTAL	1259	2239	1.8	3850	629	MEAN
VERTICAL*	835	1812	2.2	4310	386	MEAN

Table 10 - Basic parameters of capillary pressure test plug samples.

Legend

k_1 = plug permeability (10^{-3} micro-m^2).

k_2 = permeability of test sample measured by PRI (10^{-3} micro-m^2).

k_3 = permeability derived by PRI from capillary pressure test (10^{-3} micro-m^2).

PHI = porosity (%).

SAMPLE	k_1	k_2	k_3	PHI	LITHOFACIES	COMMENT
W9_83HPA	571	539	-	28.0	2	Vfine-fine gr.; bioturbated.
W9_144HPE	573	600	-	25.5	3a-3D	Fine-med. gr.; sid (oxide?) cement.
W9_215V	566	500	-	24.7	3a-3D	Fine-med gr.; thick laminae.
1208HPA	1260	-	641	31.0	3b	Med. gr.; carb. lam; ripples.
1239HPA	1247	-	854	29.5	3a-3D	Med. grained; thin laminae.
1267HPA	1236	-	1913	26.3	3a-3D	Med-crs. grained.; thick laminae.

Table 11 - Basic parameters derived from capillary pressure tests.

Legend

WE1...6 = withdrawal efficiency for each test cycle (%).
PT-peak = radius of dominant pore throat size contributing to flow derived by PRI (micron).
PT-peak range = range of dominant pore throat size radii contributing to flow derived by PRI (micron)

	W9_83HPA	W9_144HPE	W9_215V	1208HPA	1239HPA	1267HPA
WE1	47	54	39	33	67	43
WE2	53	44	43	52	55	50
WE3	57	56	54	61	57	57
WE4	55	48	34	65	62	50
WE5	23	24	24	25	61	39
WE6	22	24	24	21	22	36
PT-peak	9	11	12	14	14	20
PT-peak range	6 - 11	8 - 20	4 - 20	4 - 20	7 - 23	9 - 27