

**TO DETERMINE MASS SUSCEPTIBILITY OF HAGG END HE03 TRENCH 1 FEATURE 135+
LINEAR SUSCEPTIBILITY SAMPLES**

<u>Calibration samples</u>	Mass g	Bridge reading	Total susceptibility $K_T \times 10^{-8} \text{ m}^3$	Mass susceptibility $\chi \times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$
Manganese sulphate	50.00	62.3	4.06	81.2
High alumina cement	50.00	532	35.80	716
<u>Test samples</u>				
N-10cm A	30.62	624	42.02	1372
N-10cm B	28.42	561	37.76	1329
N-20cm A	40.25	380	25.53	634
N-20cm B	37.00	566	38.10	1030
N-30cm A	39.22	794	53.50	1364
N-30cm B	40.21	569	38.30	953
N-40cm A	42.49	240	16.07	378
N-40cm B	42.41	279	18.70	441
N-50cm A	43.99	490	32.96	749
N-50cm B	41.56	472	31.75	764
N-60cm A	34.08	334	22.42	658
N-60cm B	33.20	248	16.61	500
N-70cm A	47.09	232	15.53	330
N-70cm B	46.20	226	15.12	327
SW-30cm A	18.74	594	39.99	2134
SW-30cm B	16.54	380	25.53	1543
SW-30cm C	14.79	314	21.07	1425
SW-40cm A	31.27	364	24.45	782
SW-40cm B	30.27	310	20.80	687
SW-50cm A	32.51	206	13.77	424
SW-50cm B	29.65	192	12.82	433
SW-60cm A	35.49	204	13.64	384
SW-60cm B	33.74	234	15.66	464
SW-70cm A	36.88	268	17.96	487
SW-70cm B	36.64	209	13.97	381
Mean	)			773
Median	) N line			704
Standard Deviation	+/-)			381
Mean	)			831
Median	) SW line			487
Standard Deviation	+/-)			597

Chart data

Total sus.	Meter	Total sus.	Meter
0	0		
4.06	62.3	4.06	62.3
		35.80	532

Slope & constant values as calculated by data trendline:

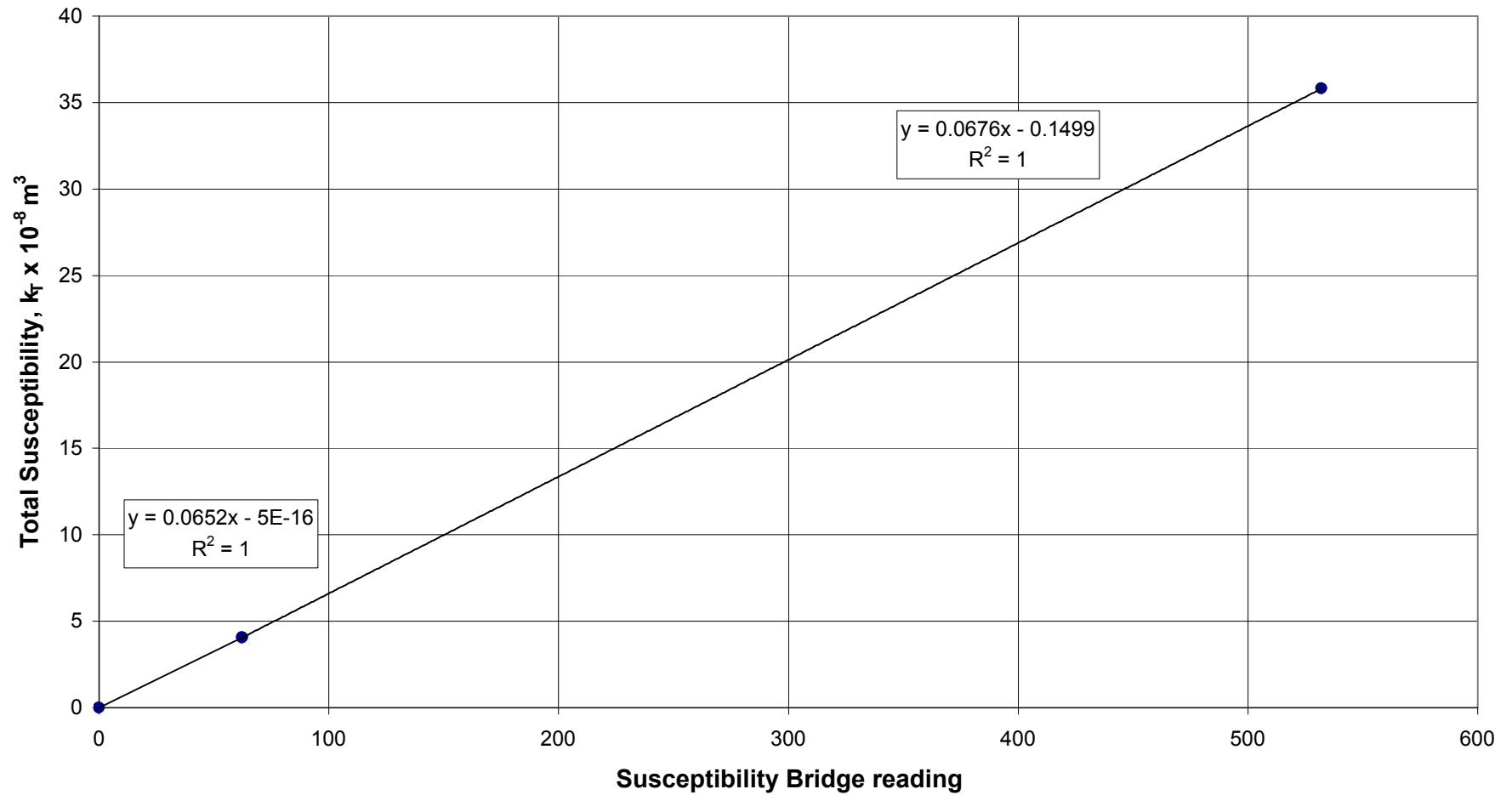
m	c	x	y
0.0652	0	62.3	4.0620
0.0676	-0.1499	62.3	4.0616
0.0676	-0.1499	532	35.8133

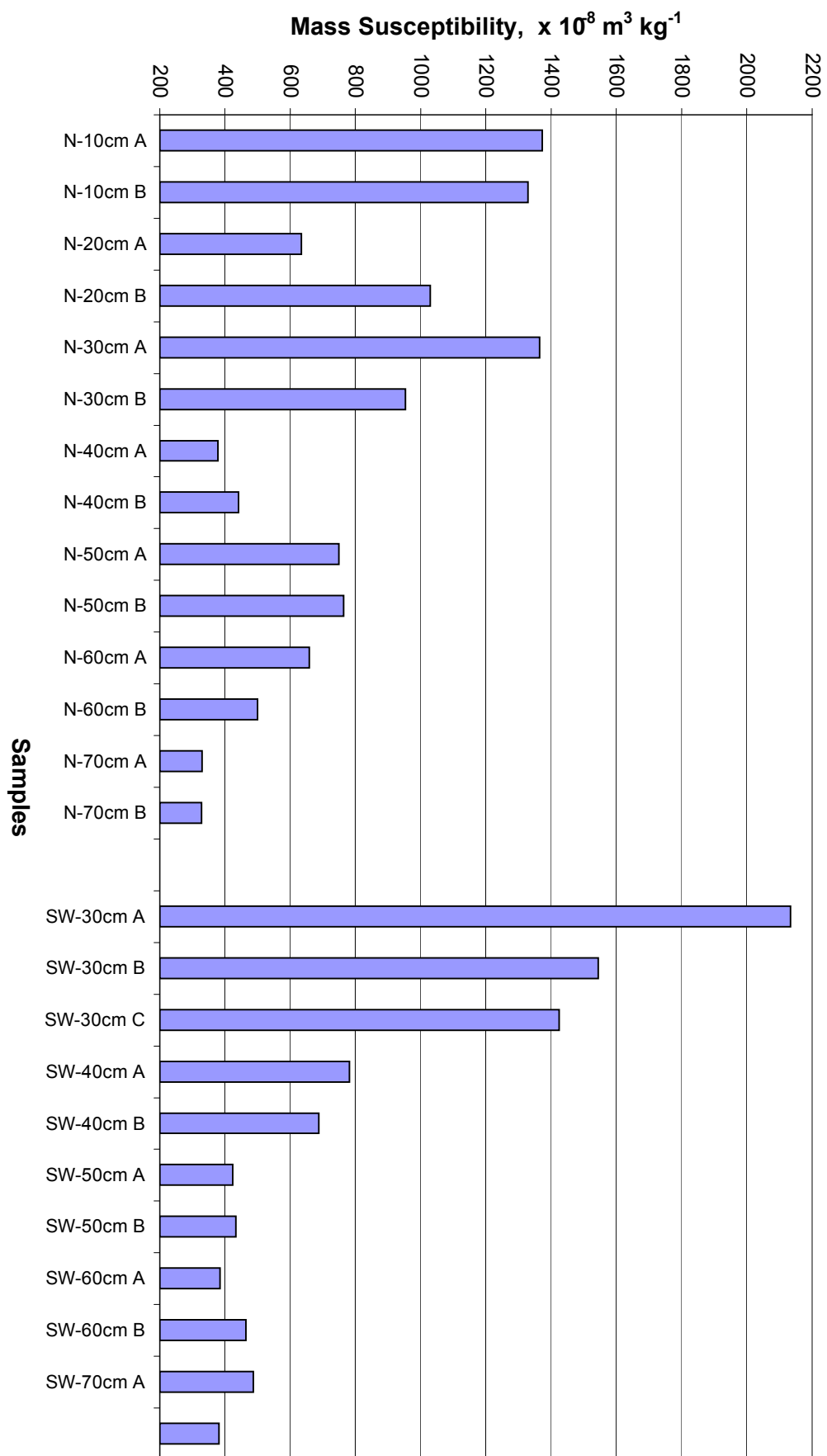
Slope & constant values as calculated from raw data:

m	c	x	y
0.06517	0	62.3	4.06
0.06758	-0.149925	62.3	4.06
0.06758	-0.149925	532	35.80

Above slope & constant values used in formula to calculate total susceptibility from the corresponding meter reading.

HE03 TRENCH 1 LINEAR SAMPLES SUSCEPTIBILITY CALIBRATION CURVE





HE03 TRENCH 1 LINEAR SAMPLES MASS SUSCEPTIBILITY

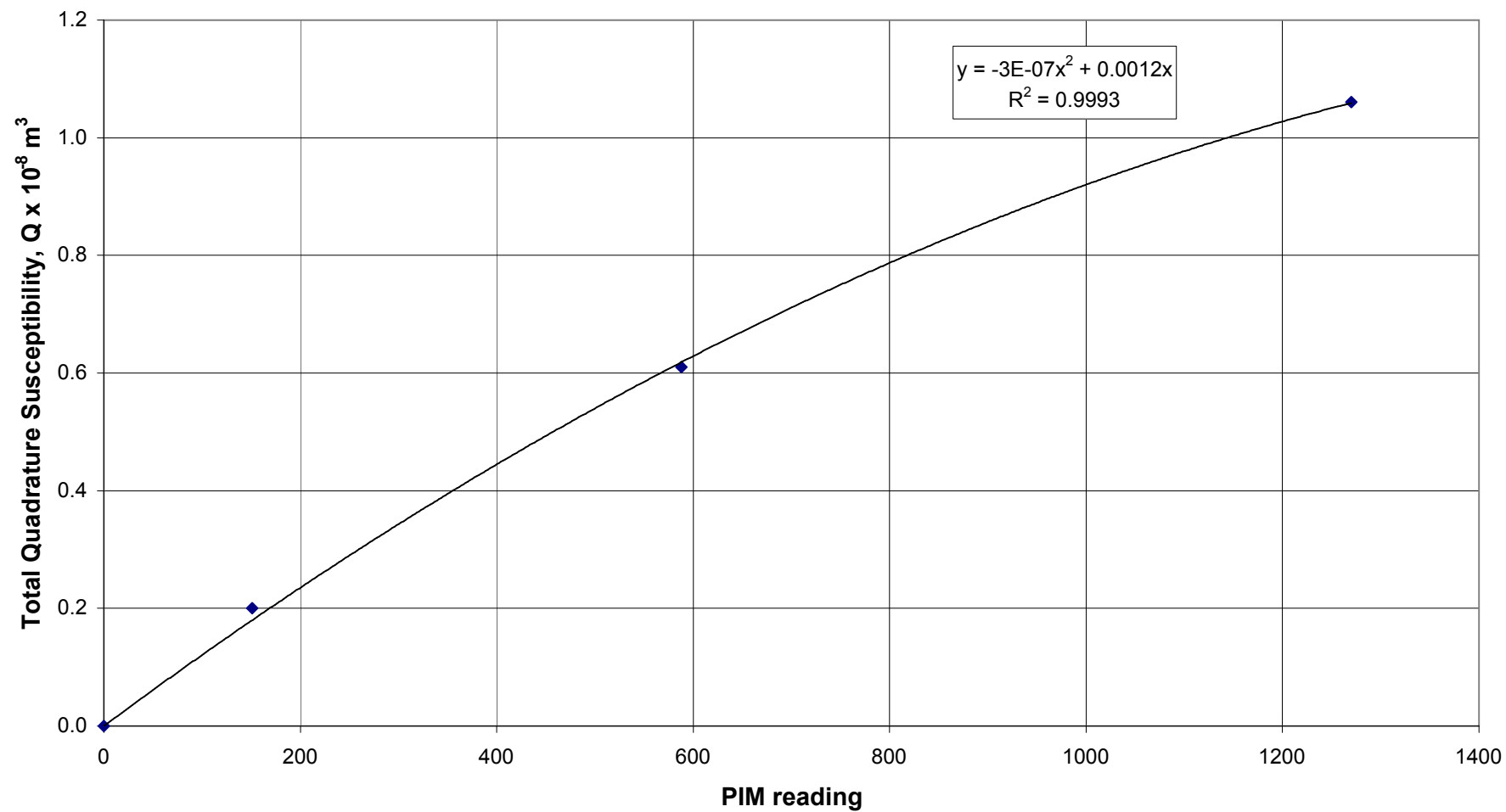
**TO DETERMINE MASS QUADRATURE SUSCEPTIBILITY AND MAGNETIC VISCOSITY
OF HAGG END HE03 TRENCH 1 FEATURE 135+ LINEAR SUSCEPTIBILITY SAMPLES**

<u>Calibration samples</u>	Mass g	PIM reading	Total quad. sus. $Q \times 10^{-8} \text{ m}^3$	Mass quad. sus. $q \times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$	Magnetic viscosity %
High alumina cement	50.00	151	0.20	4.0	
BS87	50.00	588	0.61	12.2	
BS62	40.64	1270	1.06	26.1	
<u>Test samples</u>					
N-10cm A	30.62	1738	1.18	39	2.8
N-10cm B	28.42	1618	1.16	41	3.1
N-20cm A	40.25	1380	1.08	27	4.2
N-20cm B	37.00	1810	1.19	32	3.1
N-30cm A	39.22	1790	1.19	30	2.2
N-30cm B	40.21	1509	1.13	28	2.9
N-40cm A	42.49	585	0.60	14	3.7
N-40cm B	42.41	626	0.63	15	3.4
N-50cm A	43.99	1002	0.90	20	2.7
N-50cm B	41.56	1144	0.98	24	3.1
N-60cm A	34.08	646	0.65	19	2.9
N-60cm B	33.20	778	0.75	23	4.5
N-70cm A	47.09	544	0.56	12	3.6
N-70cm B	46.20	504	0.53	11	3.5
SW-30cm A	18.74	1960	1.20	64	3.0
SW-30cm B	16.54	1326	1.06	64	4.2
SW-30cm C	14.79	1060	0.93	63	4.4
SW-40cm A	31.27	1508	1.13	36	4.6
SW-40cm B	30.27	1270	1.04	34	5.0
SW-50cm A	32.51	668	0.67	21	4.8
SW-50cm B	29.65	620	0.63	21	4.9
SW-60cm A	35.49	600	0.61	17	4.5
SW-60cm B	33.74	550	0.57	17	3.6
SW-70cm A	36.88	610	0.62	17	3.5
SW-70cm B	36.64	488	0.51	14	3.7
Mean	)			24	3.3
Median	) N line			23	3.1
Standard Deviation	+/-)			9	0.6
Mean	)			34	4.2
Median	) SW line			21	4.4
Standard Deviation	+/-)			21	0.7

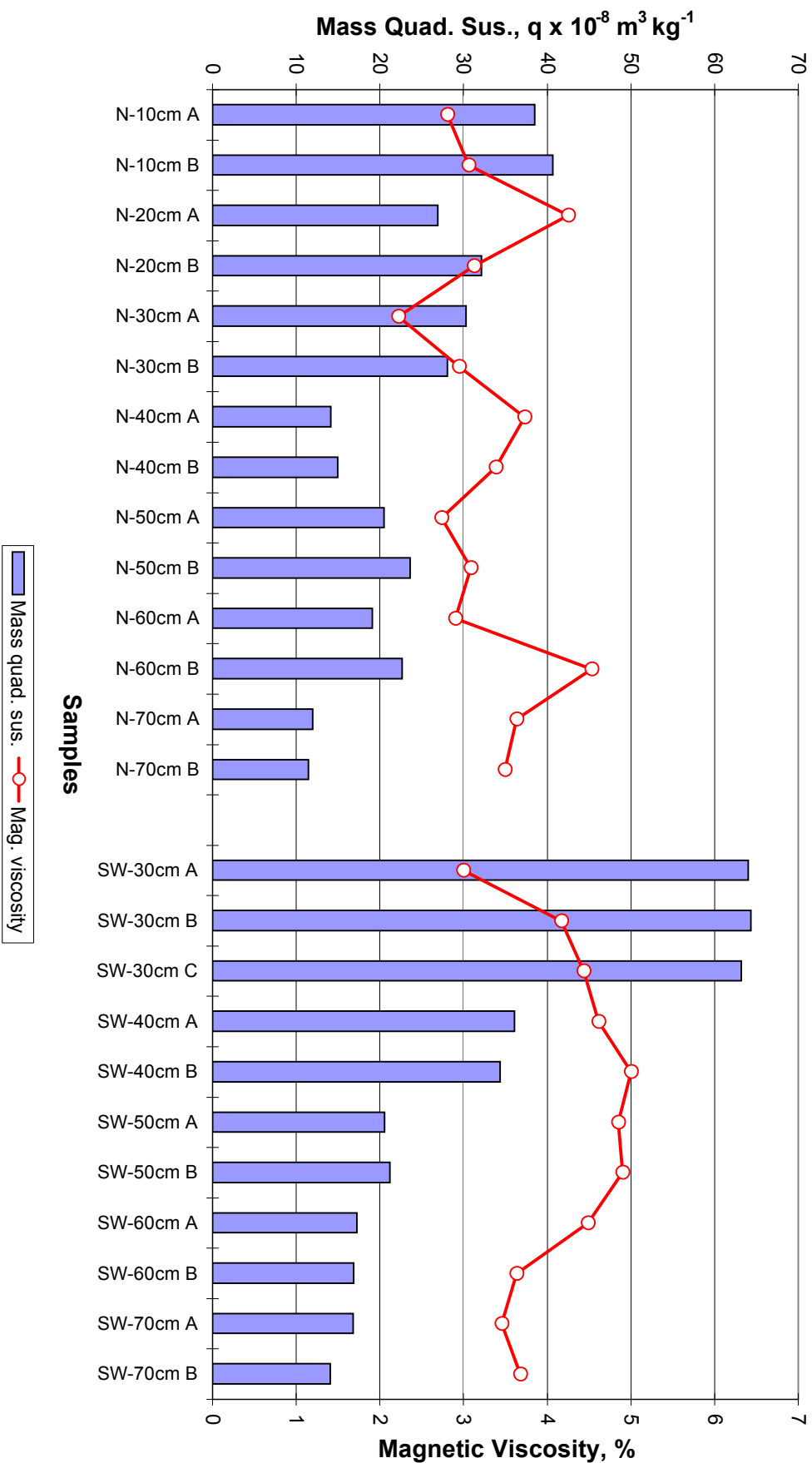
Chart data

Total quad.	PIM
0	0
0.20	151
0.61	588
1.06	1270

HE03 TRENCH 1 LINEAR SAMPLES QUADRATURE SUSCEPTIBILITY CALIBRATION CURVE



HE03 TRENCH 1 LINEAR SAMPLES MASS QUADRATURE SUSCEPTIBILITY & MAGNETIC VISCOSITY



As-measured results

	Mass g	Total susceptibility $k_T \times 10^{-8} \text{ m}^3$	Total quad. sus. $Q \times 10^{-6} \text{ m}^3$
N-10cm A	30.62	42.02	1.18
N-10cm B	28.42	37.76	1.16
N-20cm A	40.25	25.53	1.08
N-20cm B	37.00	38.10	1.19
N-30cm A	39.22	53.50	1.19
N-30cm B	40.21	38.30	1.13
N-40cm A	42.49	16.07	0.60
N-40cm B	42.41	18.70	0.63
N-50cm A	43.99	32.96	0.90
N-50cm B	41.56	31.75	0.98
N-60cm A	34.08	22.42	0.65
N-60cm B	33.20	16.61	0.75
N-70cm A	47.09	15.53	0.56
N-70cm B	46.20	15.12	0.53
SW-30cm A	18.74	39.99	1.20
SW-30cm B	16.54	25.53	1.06
SW-30cm C	14.79	21.07	0.93
SW-40cm A	31.27	24.45	1.13
SW-40cm B	30.27	20.80	1.04
SW-50cm A	32.51	13.77	0.67
SW-50cm B	29.65	12.82	0.63
SW-60cm A	35.49	13.64	0.61
SW-60cm B	33.74	15.66	0.57
SW-70cm A	36.88	17.96	0.62
SW-70cm B	36.64	13.97	0.51

Recalculated results

	Mass g	Total susceptibility $k_T \times 10^{-8} \text{ m}^3$	Mass susceptibility $\chi \times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$	Total quad. sus. $Q \times 10^{-6} \text{ m}^3$	Mass quad. sus. $q \times 10^{-6} \text{ m}^3 \text{ kg}^{-1}$	Magnetic viscosity %
N-10cm	59.04	79.78	1351	2.34	40	2.9
N-20cm	77.25	63.63	824	2.27	29	3.6
N-30cm	79.43	91.80	1156	2.31	29	2.5
N-40cm	84.90	34.77	410	1.23	15	3.5
N-50cm	85.55	64.71	756	1.88	22	2.9
N-60cm	67.28	39.03	580	1.40	21	3.6
N-70cm	93.29	30.65	329	1.09	12	3.6
SW-30cm	50.07	86.59	1729	3.20	64	3.7
SW-40cm	61.54	45.25	735	2.17	35	4.8
SW-50cm	62.16	26.60	428	1.30	21	4.9
SW-60cm	69.23	29.30	423	1.18	17	4.0
SW-70cm	73.52	31.93	434	1.13	15	3.6
Mean N line			772		24	3.2
Mean SW line			750		30	4.2

HE03 TRENCH 1 SUSCEPTIBILITY VARIATION WITH DISTANCE

