TO DETERMINE MASS SUSCEPTIBILITY OF STINGAMIRES SM04 TRENCH 1
CENTRAL VERTICAL MONOBLOCK SAMPLES

Calibration samples	Mass g	Bridge reading	Total susceptibility $k_T \times 10^{-8}$ m^3	Mass susceptibility $\chi \times 10^{-8}$ m^3 kg^{-1}
Manganese sulphate	50.00	61.7	4.06	81.2
High alumina cement	50.00	528	35.80	716
Test samples				
A1	18.81	1032	70.11	3727
A2	9.20	1093	74.26	8072
A3	5.69	608	41.25	7249
A4	9.34	1280	86.99	9313
C1	10.31	399	27.02	2621
C2	10.11	319	21.57	2134
D1	11.49	330	22.32	1943
D2	15.22	332	22.46	1476
D3	16.89	463	31.38	1858
D4	14.46	533	36.14	2499
E1	12.46	21.1	1.39	111
E2	15.31	54.2	3.57	233
E3	13.99	4.7	0.31	22
E4	13.23	4.8	0.32	24
E5	22.98	3.6	0.24	10
E6	20.24	41.0	2.70	133

Mean	)		7090
Median	) A		7660
Standard Deviation	+/-)		2397
Mean	)		2377
Median	) C		2377
Standard Deviation	+/-)		344
Mean	)		1944
Median	) D		1900
Standard Deviation	+/-)		422
Mean	)		89
Median	) E		68
Standard Deviation	+/-)		87

Chart data

Total sus.	Meter	Total sus.	Meter
0	0		
4.06	61.7	4.06	61.7
		35.80	528

Slope & constant values as calculated by data trendline:

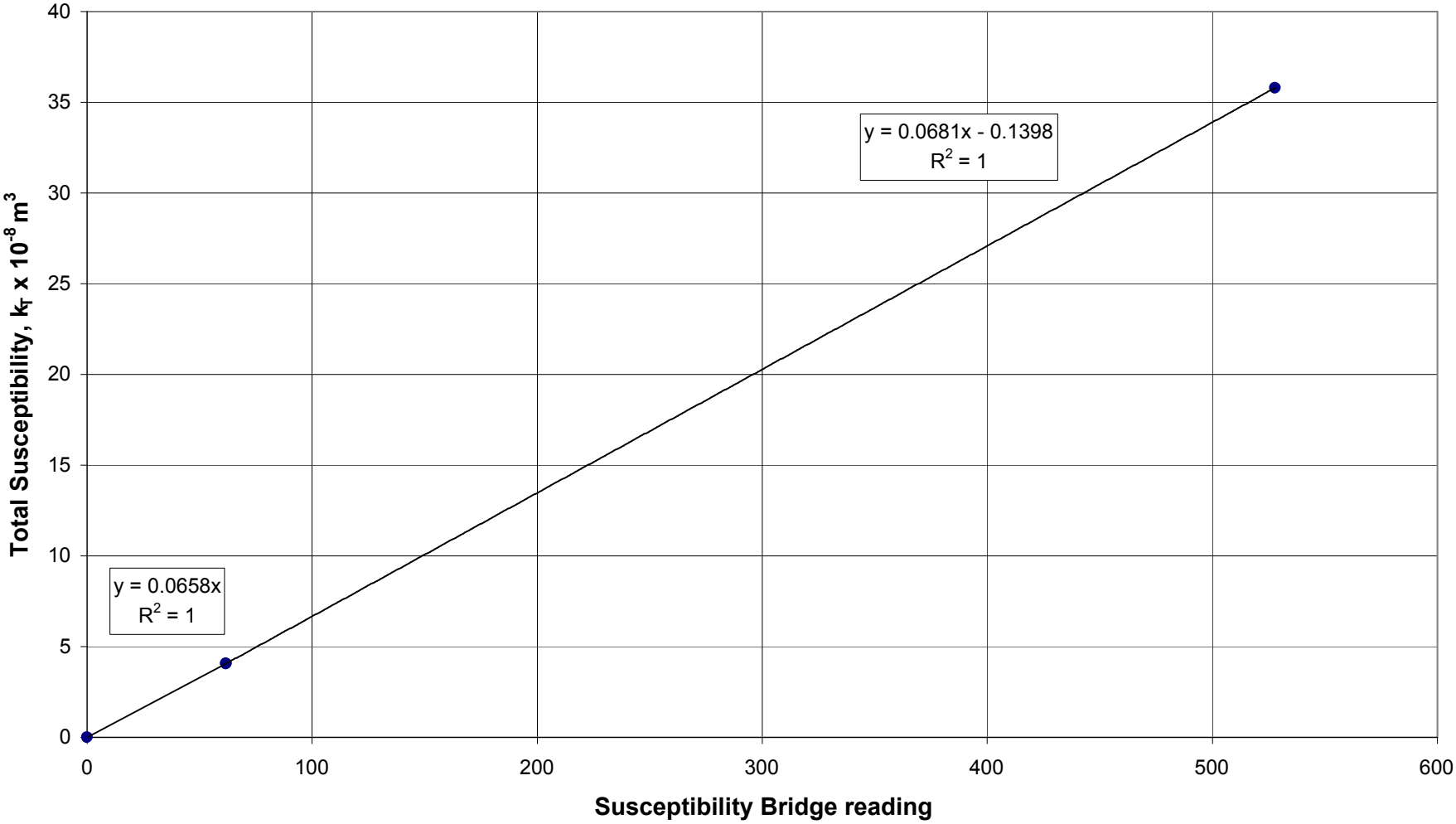
m	c	x	y
0.0658	0	61.7	4.0599
0.0681	-0.1398	61.7	4.0620
0.0681	-0.1398	528	35.8170

Slope & constant values as calculated from raw data:

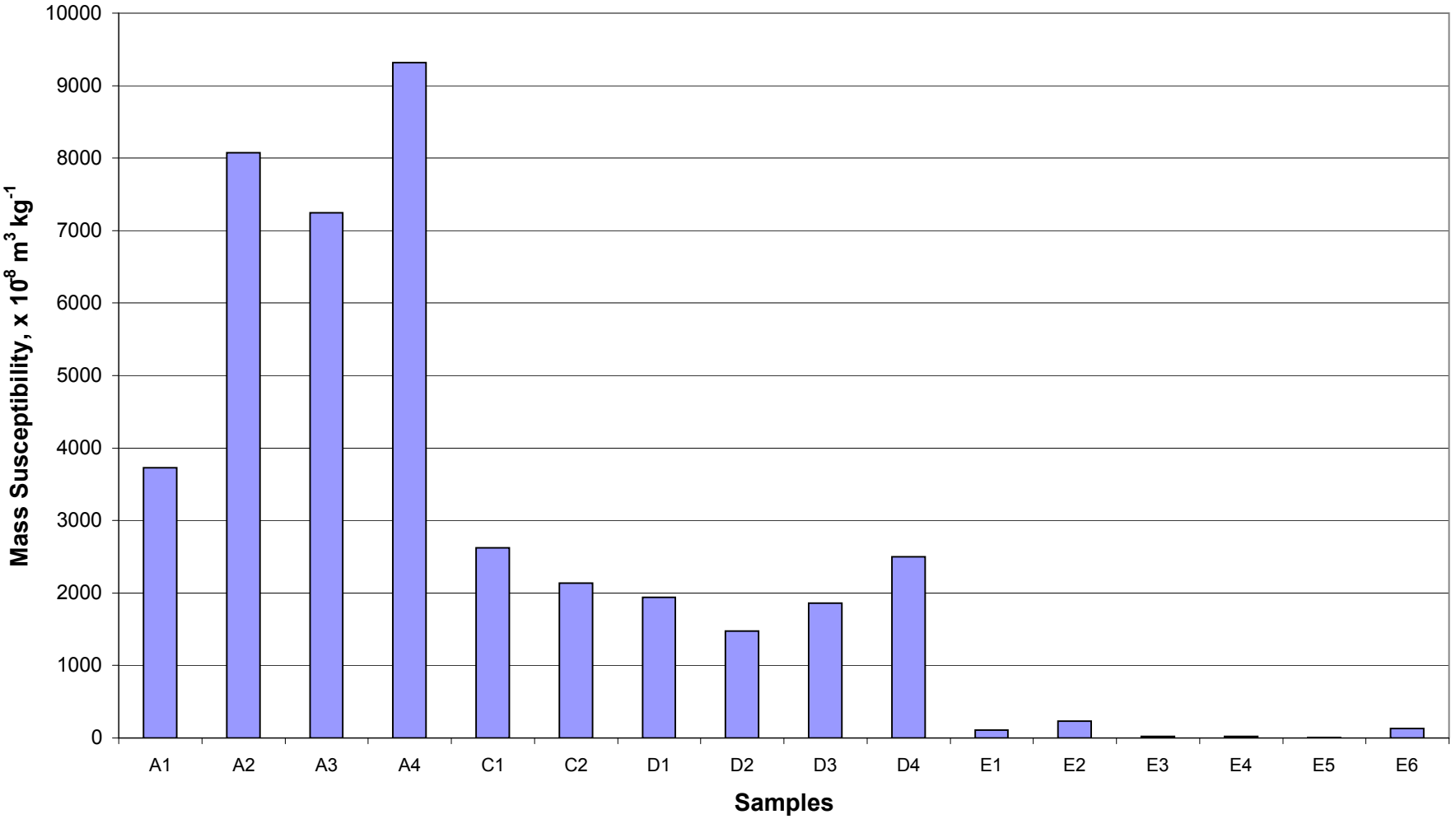
m	c	x	y
0.06580	0	61.7	4.06
0.06807	-0.139781	61.7	4.06
0.06807	-0.139781	528	35.80

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

SM04 TRENCH 1 MONOBLOCK SUSCEPTIBILITY CALIBRATION CURVE



SM04 TRENCH 1 MONOBLOCK MASS SUSCEPTIBILITY



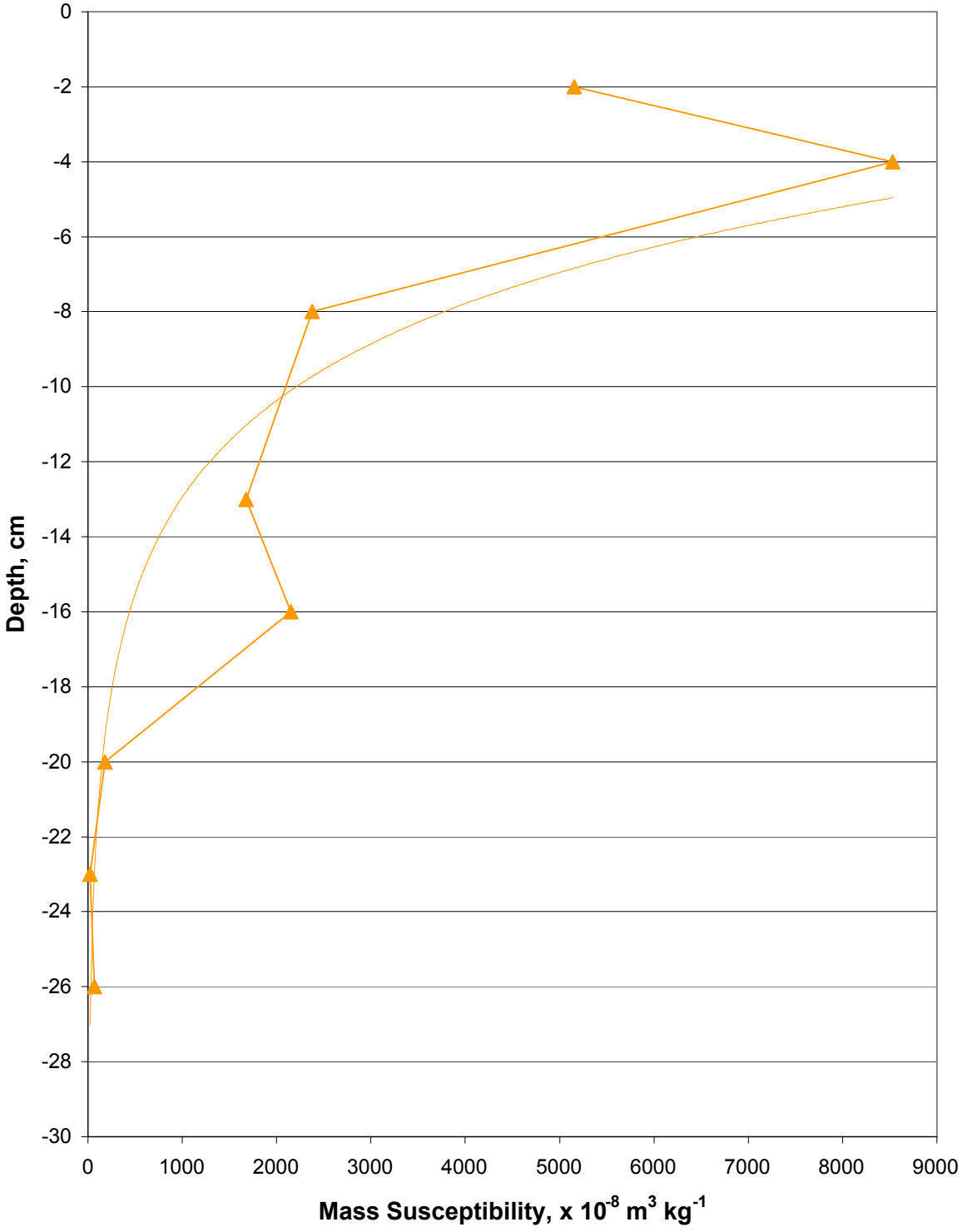
Original data

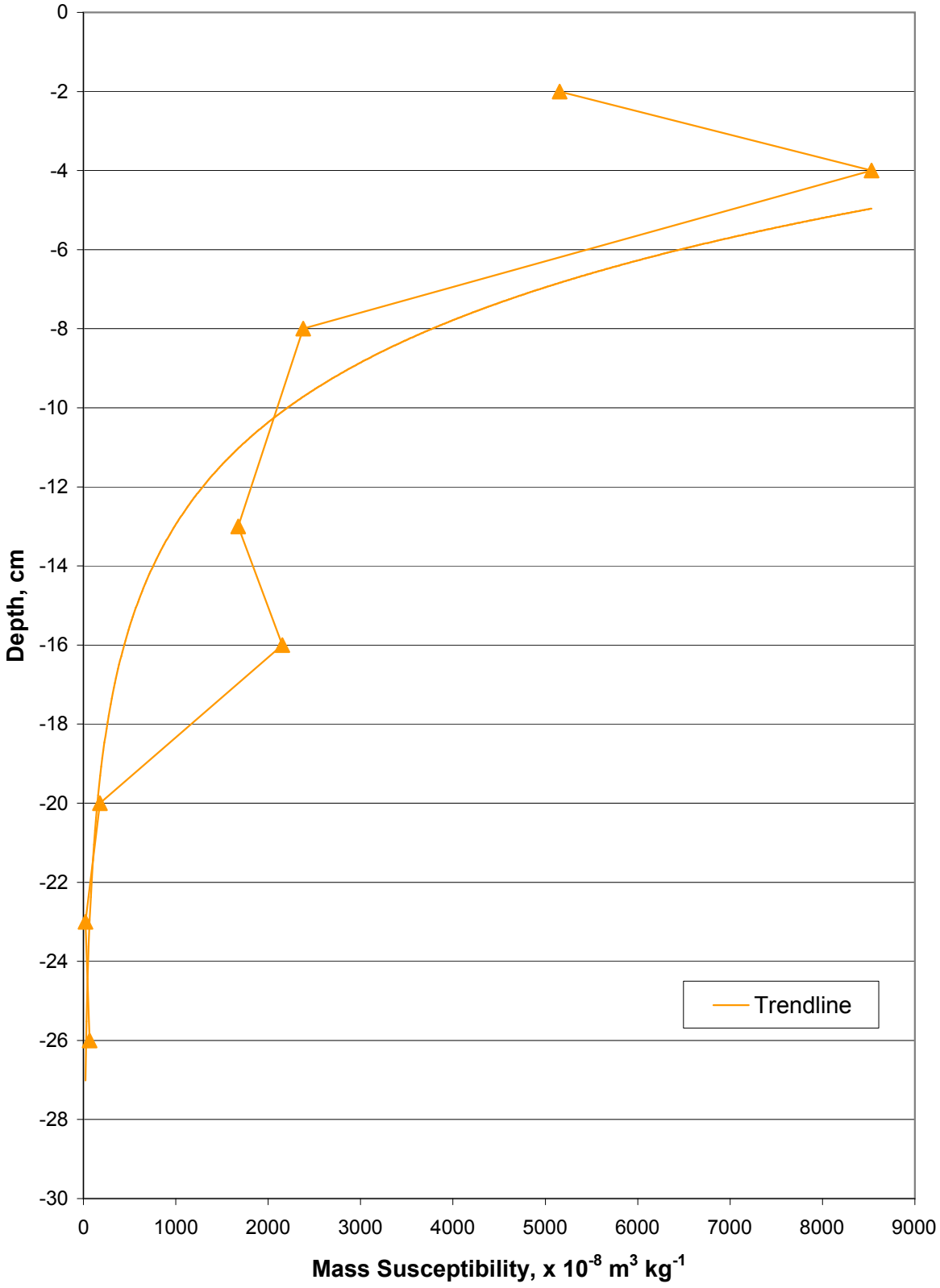
Depth cm	Samples	Mass susceptibility $\chi \times 10^{-8}$ m^3 kg^{-1}
2	A1	3727
2	A2	8072
4	A3	7249
4	A4	9313
8	C1	2621
8	C2	2134
13	D1	1943
13	D2	1476
16	D3	1858
16	D4	2499
20	E1	111
20	E2	233
23	E3	22
23	E4	24
26	E5	10
26	E6	133

Combined data

Depth cm	Samples	Mass susceptibility $\chi \times 10^{-8}$ m^3 kg^{-1}
0		
-2	A1 + A2	5154
-4	A3 + A4	8532
-8	C1 + C2	2380
-13	D1 + D2	1677
-16	D3 + D4	2154
-20	E1 + E2	178
-23	E3 + E4	23
-26	E5 + E6	68
-30		

SM04 TRENCH 1 MONOBLOCK VARIATION OF MASS SUSCEPTIBILITY WITH DEPTH




0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
Depth, cm
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
Mass Susceptibility, x 10-8 m3 kg-1
Trendline

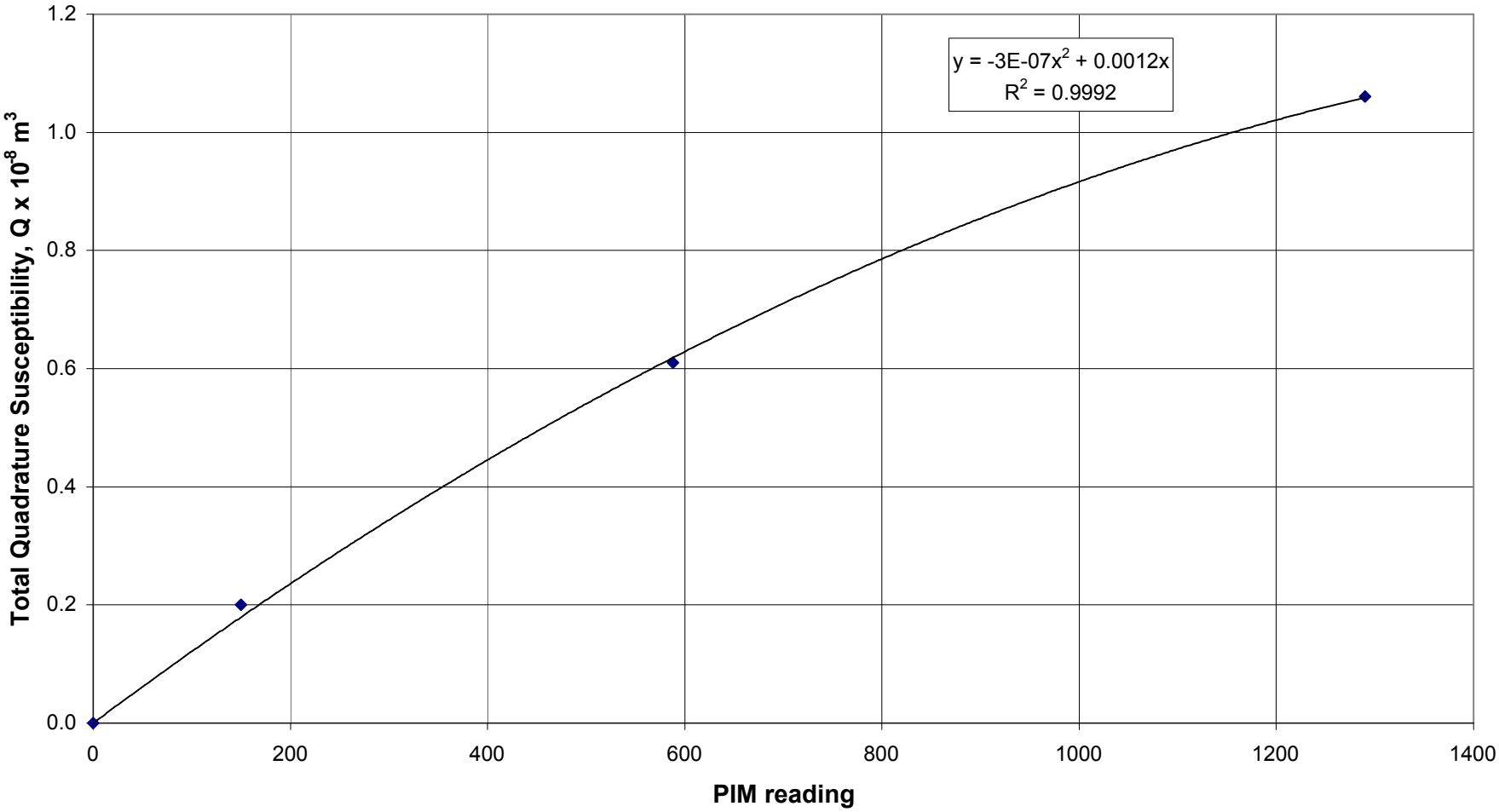
TO DETERMINE MASS QUADRATURE SUSCEPTIBILITY AND MAGNETIC VISCOSITY OF STINGAMIRES SM04 TRENCH 1 CENTRAL VERTICAL MONOBLOCK SAMPLES

Calibration samples	Mass g	PIM reading	Total quad. sus. Q x 10^{-8} m^3	Mass quad. sus. q x 10^{-8} m^3 kg^{-1}	Magnetic viscosity %
High alumina cement	50.00	150	0.20	4.0	
BS87	50.00	588	0.61	12.2	
BS62	40.64	1290	1.06	26.1	
Test samples					
A1	18.81	1870	1.19	64	1.7
A2	9.20	1915	1.20	130	1.6
A3	5.69	1080	0.95	166	2.3
A4	9.34	1999	1.20	128	1.4
C1	10.31	1125	0.97	94	3.6
C2	10.11	1048	0.93	92	4.3
D1	11.49	1440	1.11	96	5.0
D2	15.22	1615	1.16	76	5.1
D3	16.89	1958	1.20	71	3.8
D4	14.46	1999	1.20	83	3.3
E1	12.46	110	0.13	10	9.2
E2	15.31	252	0.28	19	7.9
E3	13.99	20	0.02	2	7.7
E4	13.23	15	0.02	1	5.7
E5	22.98	10	0.01	1	5.1
E6	20.24	190	0.22	11	8.0
Mean	)			122	1.7
Median	) A			129	1.7
Standard Deviation +/-	)			43	0.4
Mean	)			93	3.9
Median	) C			93	3.9
Standard Deviation +/-	)			2	0.5
Mean	)			82	4.3
Median	) D			79	4.4
Standard Deviation +/-	)			11	0.9
Mean	)			7	7.3
Median	) E			6	7.8
Standard Deviation +/-	)			7	1.6

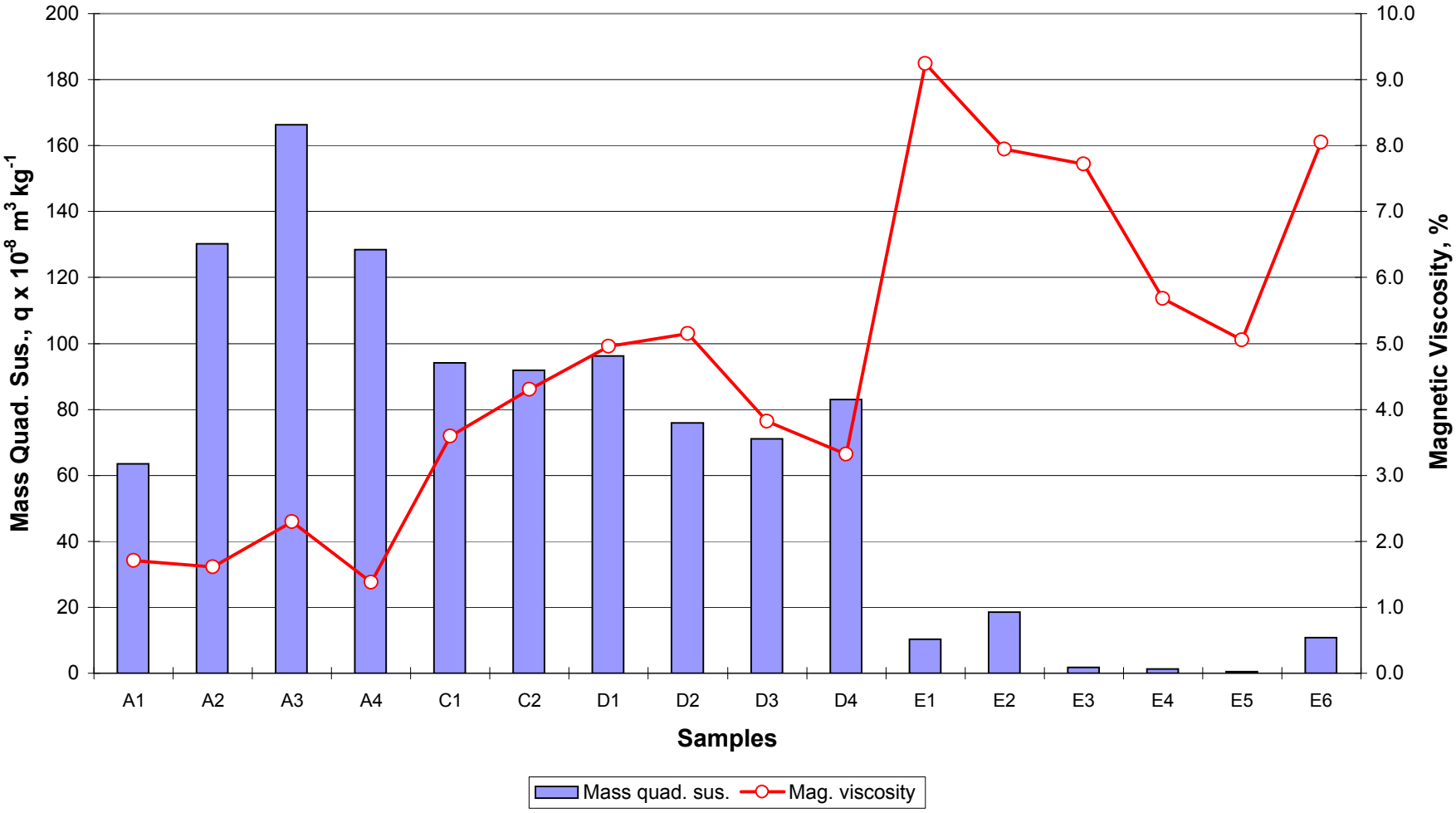
Chart data

Total quad.	PIM
0	0
0.20	150
0.61	588
1.06	1290

SM04 TRENCH 1 MONOBLOCK QUADRATURE SUSCEPTIBILITY CALIBRATION CURVE



SM04 TRENCH 1 MONOBLOCK
MASS QUADRATURE SUSCEPTIBILITY & MAGNETIC VISCOSITY



STINGAMIRES SM04 TRENCH 1 MONOBLOCK SUSCEPTIBILITY MEASUREMENTS USING EXPLORANIUM KAPPAMETER KT-9

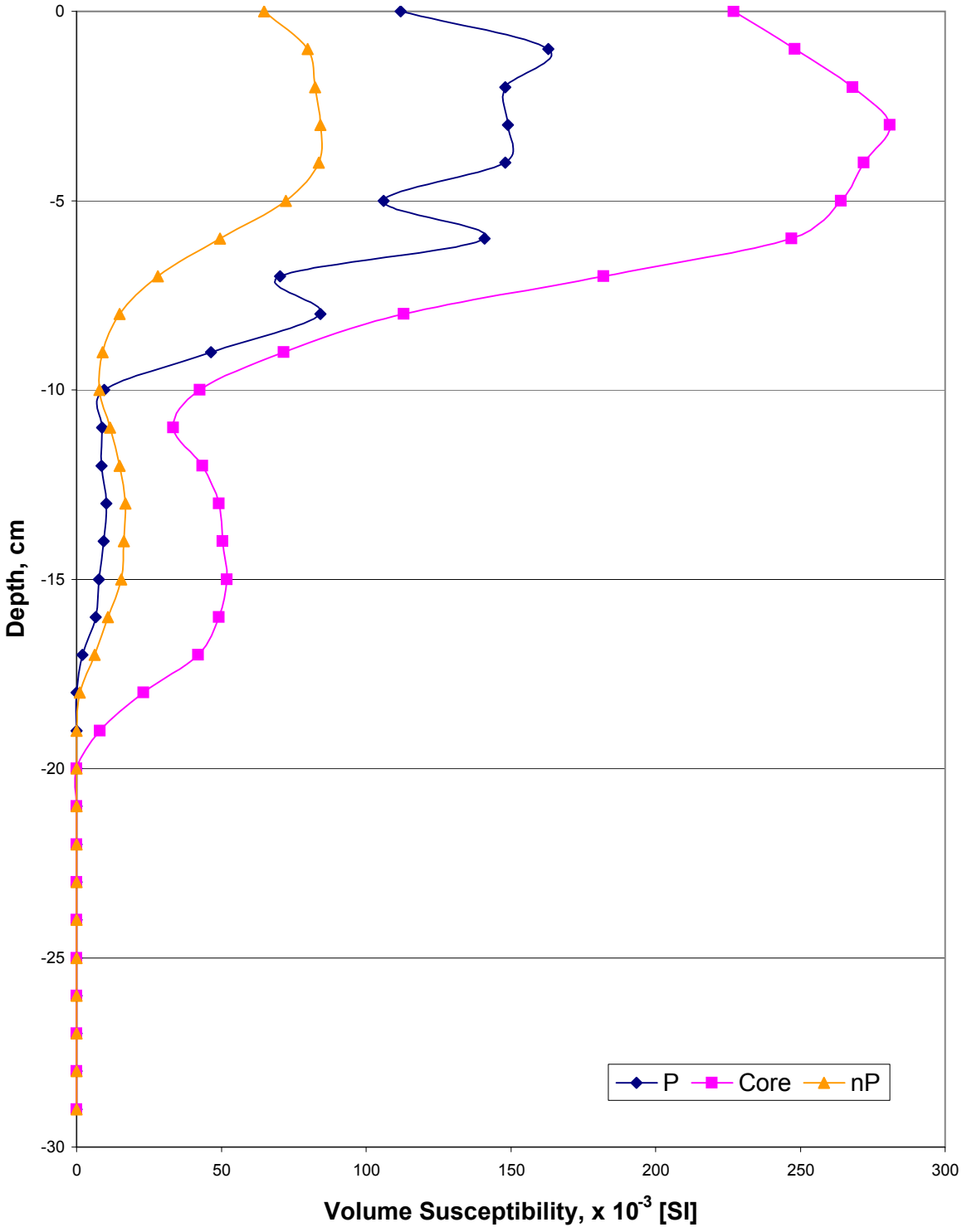
Full data set

	Volume specific susceptibility, 10^{-3} [SI]			Normalised values		
	P	Core	nP	P	Core	nP
Depth, cm		d=2.54cm				
0	112	227	64.8	1.00	1.00	1.00
-1	163	248	79.8	1.46	1.09	1.23
-2	148	268	82.4	1.32	1.18	1.27
-3	149	281	84.3	1.33	1.24	1.30
-4	148	272	83.6	1.32	1.20	1.29
-5	106	264	72.3	0.95	1.16	1.12
-6	141	247	49.6	1.26	1.09	0.77
-7	70.2	182	28.0	0.63	0.80	0.43
-8	84.3	113	14.8	0.75	0.50	0.23
-9	46.4	71.6	9.07	0.41	0.32	0.14
-10	9.6	42.6	7.84	0.09	0.19	0.12
-11	8.75	33.4	11.6	0.08	0.15	0.18
-12	8.69	43.5	14.9	0.08	0.19	0.23
-13	10.2	49.2	16.8	0.09	0.22	0.26
-14	9.4	50.5	16.4	0.08	0.22	0.25
-15	7.77	51.9	15.5	0.07	0.23	0.24
-16	6.66	49.2	10.9	0.06	0.22	0.17
-17	2.07	42.1	6.22	0.02	0.19	0.10
-18	0.01	23.1	1.17	0.00	0.10	0.02
-19	0.01	8.12	0.01	0.00	0.04	0.00
-20	0.01	0.01	0.01	0.00	0.00	0.00
-21	0.01	0.01	0.01	0.00	0.00	0.00
-22	0.01	0.01	0.01	0.00	0.00	0.00
-23	0.01	0.01	0.01	0.00	0.00	0.00
-24	0.01	0.01	0.01	0.00	0.00	0.00
-25	0.01	0.01	0.01	0.00	0.00	0.00
-26	0.01	0.01	0.01	0.00	0.00	0.00
-27	0.01	0.01	0.01	0.00	0.00	0.00
-28	0.01	0.01	0.01	0.00	0.00	0.00
-29	0.01	0.01	0.01	0.00	0.00	0.00

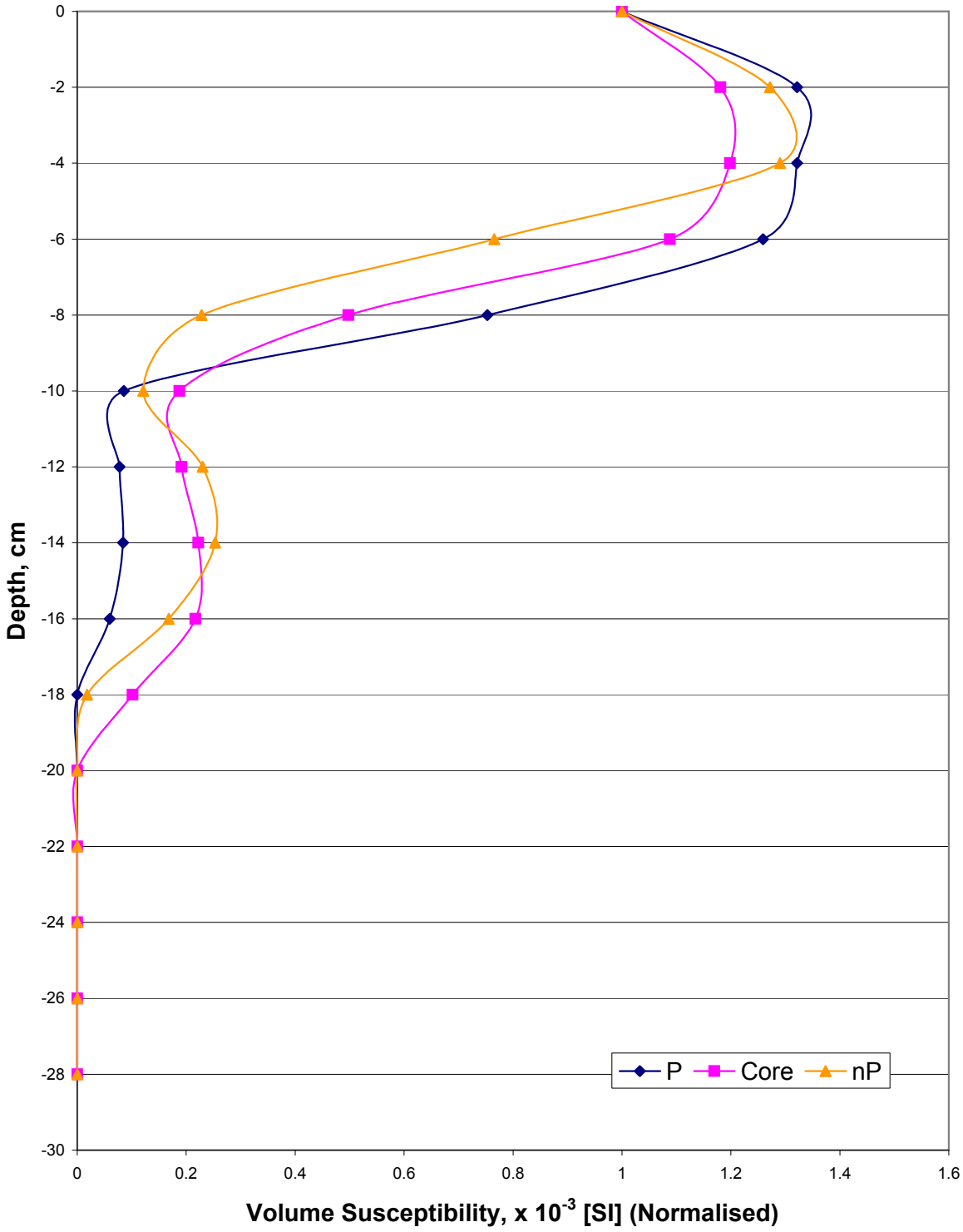
Reduced data set

	Volume specific susceptibility, 10^{-3} [SI]			Normalised values		
	P	Core	nP	P	Core	nP
Depth, cm		d=2.54cm				
0	112	227	64.8	1.00	1.00	1.00
-2	148	268	82.4	1.32	1.18	1.27
-4	148	272	83.6	1.32	1.20	1.29
-6	141	247	49.6	1.26	1.09	0.77
-8	84.3	113	14.8	0.75	0.50	0.23
-10	9.6	42.6	7.84	0.09	0.19	0.12
-12	8.69	43.5	14.9	0.08	0.19	0.23
-14	9.4	50.5	16.4	0.08	0.22	0.25
-16	6.66	49.2	10.9	0.06	0.22	0.17
-18	0.01	23.1	1.17	0.00	0.10	0.02
-20	0.01	0.01	0.01	0.00	0.00	0.00
-22	0.01	0.01	0.01	0.00	0.00	0.00
-24	0.01	0.01	0.01	0.00	0.00	0.00
-26	0.01	0.01	0.01	0.00	0.00	0.00
-28	0.01	0.01	0.01	0.00	0.00	0.00

SM04 TRENCH 1 MONOBLOCK VARIATION OF VOLUME SUSCEPTIBILITY WITH DEPTH

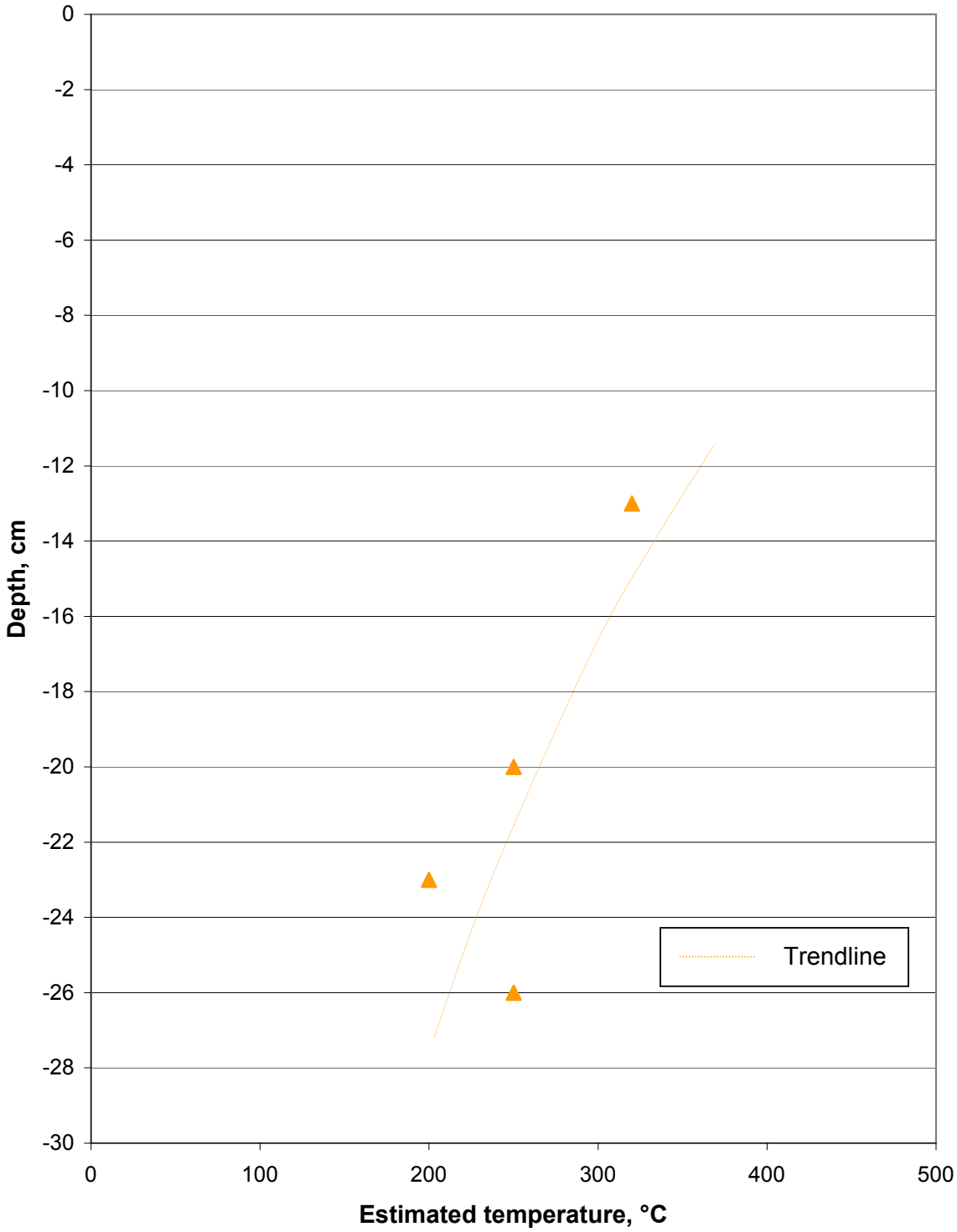


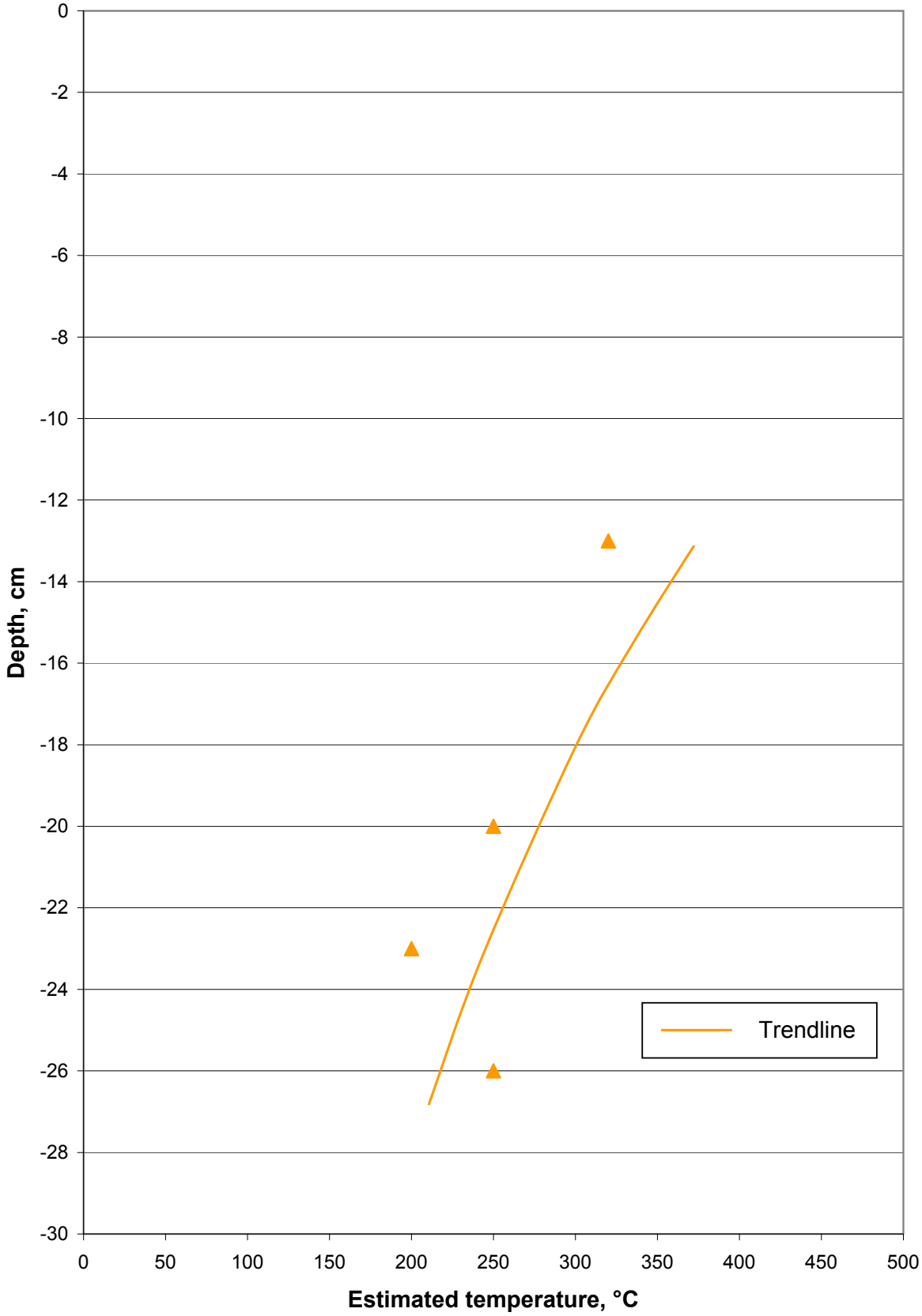
SM04 TRENCH 1 MONOBLOCK VARIATION OF VOLUME SUSCEPTIBILITY WITH DEPTH



Depth cm	Samples	Mass susceptibility χ x 10^{-8} m^3 kg^{-1}	Temperature °C
0			
-2	A1 + A2	5154	
-4	A3 + A4	8532	
-8	C1 + C2	2380	
-13	D1 + D2	1677	320
-16	D3 + D4	2154	
-20	E1 + E2	178	250
-23	E3 + E4	23	200
-26	E5 + E6	68	250
-30			

SM04 TRENCH 1 MONOBLOCK VARIATION OF TEMPERATURE WITH DEPTH




0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
Depth, cm
0
50
100
150
200
250
300
350
400
450
500
Estimated temperature, °C
Trendline