TO DETERMINE MASS SUSCEPTIBILITY OF SLAG SAMPLES FROM LEAD WORKING SITES

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	60.8	4.06	81.2
High alumina cement	50.00	544	35.80	716
Test samples				
2W	12.13	0.7	0.05	4
5CHD1	10.92	0.7	0.05	4
5CHD2	35.48	2.7	0.18	5
48GS	34.07	2.2	0.15	4
51FE	33.70	4.6	0.31	9
53SGL1	51.92	21.5	1.44	28
53SGL2	20.08	1875	123.23	6137
81GS1	31.68	2.2	0.15	5
81GS2	10.39	0.4	0.03	3
89FE	48.26	3.1	0.21	4
93WB2	12.33	0.2	0.01	1
103CHB1	43.26	5.0	0.33	8
103CHB2	4.38	0.5	0.03	8
105BG1	20.58	1.5	0.10	5
105BG2	33.50	5.0	0.33	10
108FRE1	21.26	0.7	0.05	2
108FRE2	37.66	2.0	0.13	4
Mean	)			367
Median	) All samples			5
Standard Deviation +/-	)			1487
Mean	) excluding samples			5
Median	) 53SGL1 and			4
Standard Deviation +/-	) 53SGL2			3

Chart data

Total sus.	Meter	Total sus.	Meter
0	0		
4.06	60.8	4.06	60.8
		35.80	544

Slope & constant values as calculated by data trendline:

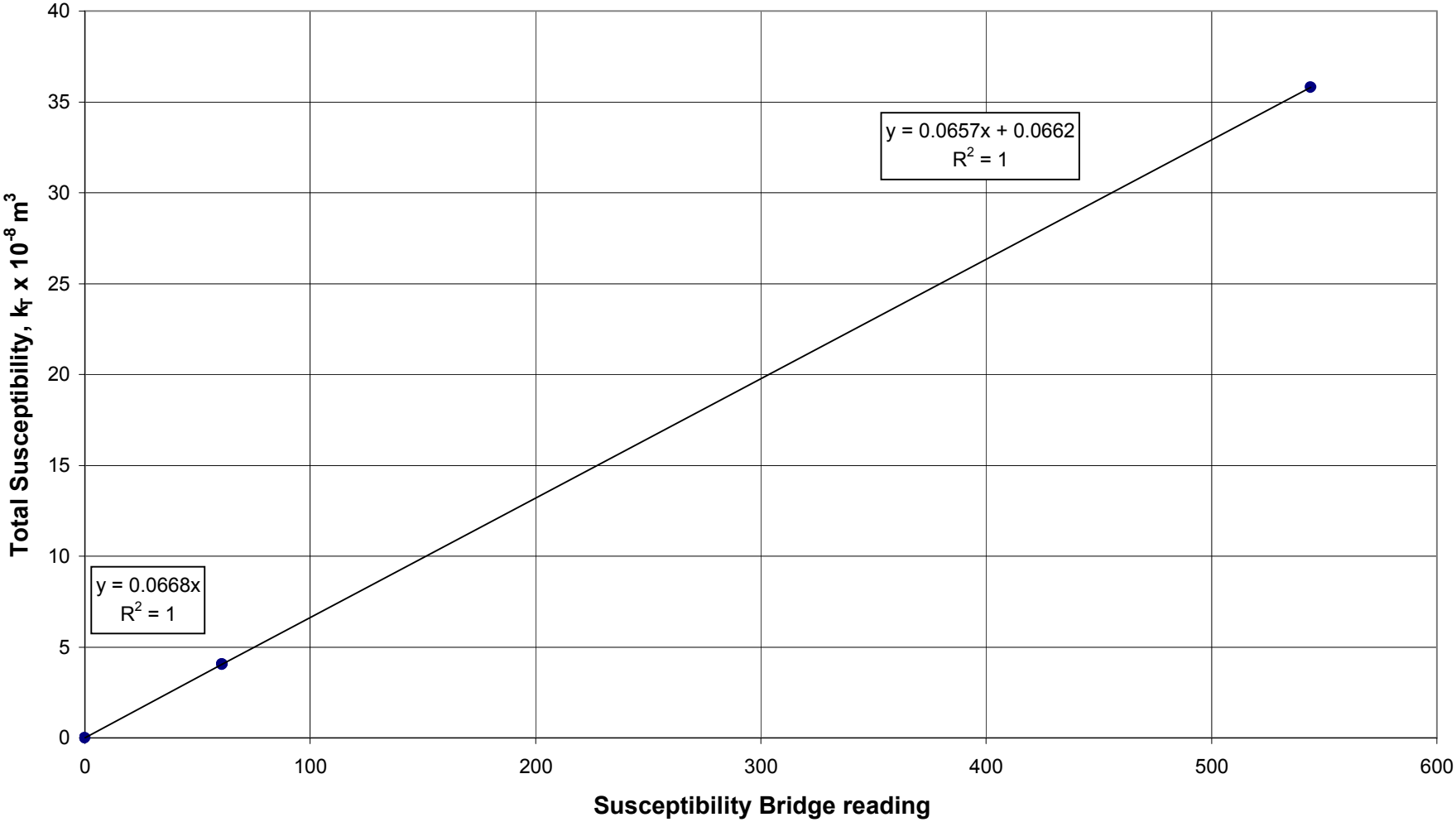
m	c	x	y
0.0668	0	60.8	4.061440
0.0657	0.0662	60.8	4.060760
0.0657	0.0662	544	35.80700

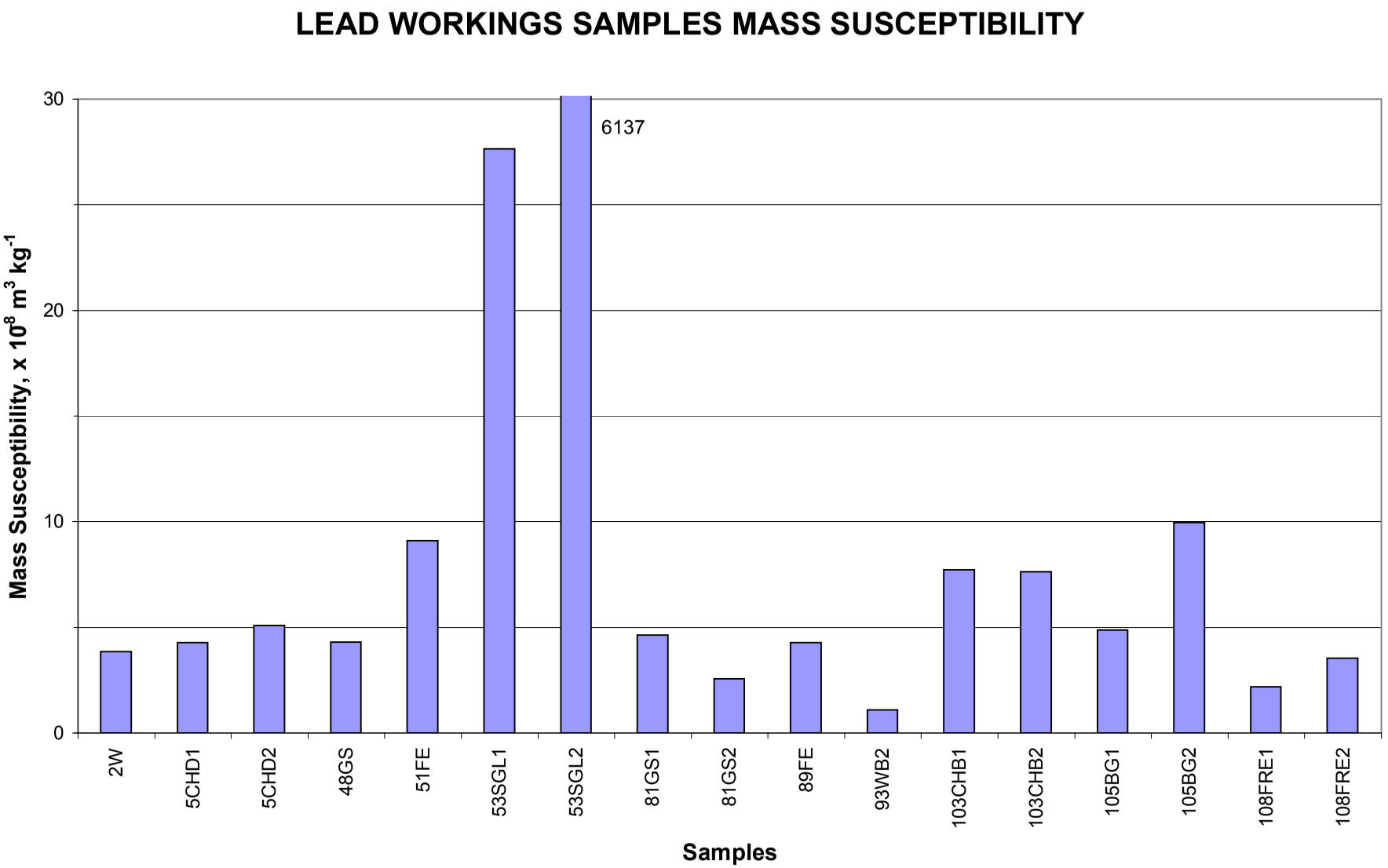
Slope & constant values as calculated by from raw data:

m	c	x	y
0.066776	0	60.8	4.059981
0.065687	0.0662	60.8	4.059970
0.065687	0.0662	544	35.799928

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

LEAD WORKINGS SAMPLES SUSCEPTIBILITY CALIBRATION CURVE




LEAD WORKINGS SAMPLES MASS SUSCEPTIBILITY
Mass Susceptibility, x 10^-8 m^3 kg^-1
30
20
10
0
6137
2W
5CHD1
5CHD2
48GS
51FE
53SGL1
53SGL2
81GS1
81GS2
89FE
93WB2
103CHB1
103CHB2
105BG1
105BG2
108FRE1
108FRE2
Samples

TO DETERMINE MASS QUADRATURE SUSCEPTIBILITY AND MAGNETIC VISCOSITY OF SLAG SAMPLES FROM LEAD WORKING SITES

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	168	0.20	4	
BS87	50.53	619	0.62	12.2	
BS62	38.76	1398	1.01	26.1	
Test samples					
2W	12.13	nd	-	-	-
5CHD1	10.92	nd	-	-	-
5CHD2	35.48	2	0.00	0.1	2.7
48GS	34.07	1	0.00	0.1	2.5
51FE	33.70	nd	-	-	-
53SGL1	51.92	4	0.01	0.1	0.5
53SGL2	20.08	185	0.21	10.5	0.2
81GS1	31.68	3	0.01	0.2	4.1
81GS2	10.39	2	0.00	0.5	18.3
89FE	48.26	nd	-	-	-
93WB2	12.33	1	0.00	0.3	27.7
103CHB1	43.26	8	0.01	0.3	3.6
103CHB2	4.38	nd	-	-	-
105BG1	20.58	2	0.00	0.2	4.9
105BG2	33.50	3	0.01	0.2	1.8
108FRE1	21.26	3	0.01	0.3	13.0
108FRE2	37.66	20	0.03	0.7	19.7

nd = not determined

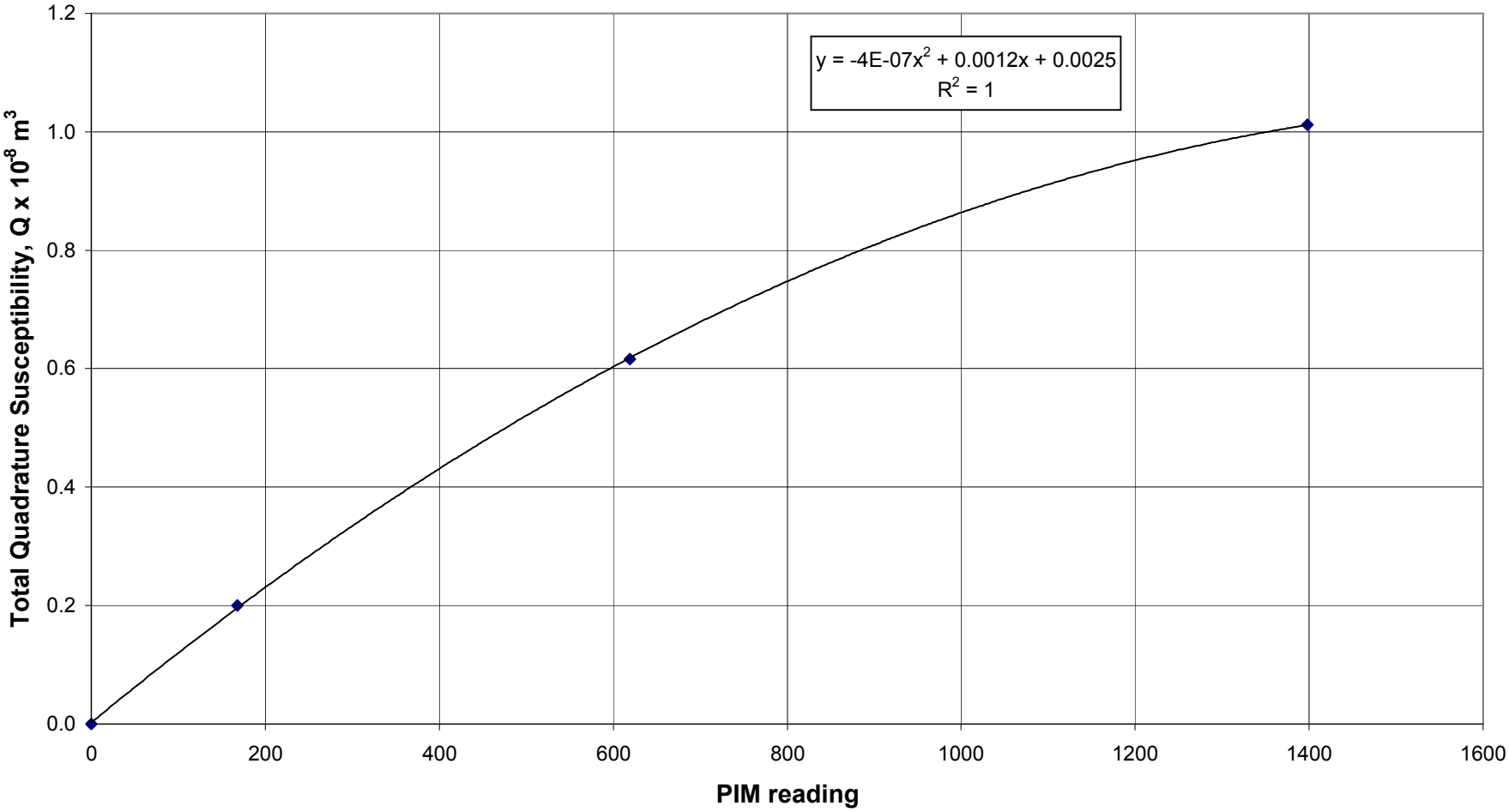
Mean	)		4.6	10.7
Median	)	All samples	0.2	4.1
Standard Deviation +/-	)		10.6	11.8

Mean	)	excluding samples	0.3	9.9
Median	)	53SGL1 and	0.3	4.5
Standard Deviation +/-	)	53SGL2	0.2	9.2

Chart data

Total quad.	PIM
0	0
0.20	168
0.62	619
1.01	1398

LEAD WORKINGS SAMPLES QUADRATURE SUSCEPTIBILITY CALIBRATION CURVE



LEAD WORKINGS SAMPLES MASS QUADRATURE SUSCEPTIBILITY & MAGNETIC VISCOSITY