

The National Marine Biological
Analytical Quality Control Scheme

Particle Size Results
PS47

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Table 1. Summary of the replicate benchmark analysis and particle size information received from participating laboratories for the forty-seventh PSA NMBAQC Scheme.

Benchmark Data

		%			Median	Mean	Sediment Description
Sample	Method	Gravel	% Sand	% Silt	ф	ф	(Post analysis)
PS47 1960	NMBAQC	28.54	71.46	0.00	1.357	-0.162	Gravelly Sand
PS47 1961	NMBAQC	28.27	71.73	0.00	1.326	-0.171	Gravelly Sand
PS47 1962	NMBAQC	28.70	71.30	0.00	1.346	-0.163	Gravelly Sand
PS47 1963	NMBAQC	28.75	71.25	0.00	1.344	-0.172	Gravelly Sand
PS47 1964	NMBAQC	28.68	71.32	0.00	1.380	-0.146	Gravelly Sand
PS47 1965	NMBAQC	28.72	71.28	0.00	1.315	-0.022	Gravelly Sand
PS47 1966	NMBAQC	28.68	71.32	0.00	1.393	-0.139	Gravelly Sand
PS47 1967	NMBAQC	28.68	71.32	0.00	1.370	-0.150	Gravelly Sand
PS47 1968	NMBAQC	28.66	71.34	0.00	1.365	-0.157	Gravelly Sand
PS47 1969	NMBAQC	28.69	71.31	0.00	1.369	-0.156	Gravelly Sand
TUM							
AVERAGE	NMBAQC	28.64	71.36	0.00	1.36	-0.144	

Participant Data

		%			
Lab	Method	Gravel	% Sand	% Silt	Sediment Description (Post analysis)
LB_1901	NMBAQC	29.72	70.28	0.00	Gravelly sand
LB_1903	NMBAQC	29.26	70.74	0.00	Gravelly sand
LB_1904	NMBAQC	30.16	69.84	0.00	Gravelly sand
LB_1905	NMBAQC	28.96	71.04	0.00	Gravelly sand
LB_1908	OTHER	34.53	64.94	0.53	Sandy gravel
LB_1909	NMBAQC	29.46	70.54	0.00	Gravelly sand
LB_1910	NMBAQC	28.95	71.01	0.04	Gravelly sand
LB_1917	NMBAQC	30.61	69.39	0.00	Sandy gravel
LB_1921	NMBAQC	30.64	69.36	0.00	Sandy gravel
LB_1955	NMBAQC	31.92	68.08	0.00	Sandy gravel
LB_1958	NMBAQC	28.84	71.16	0.00	Gravelly sand

Key to

methods

 ${\sf NMBAQC} \ {\sf -States} \ {\sf following} \ {\sf NMBAQC} \ {\sf PSA} \ {\sf SOP} \ {\sf for} \ {\sf supporting} \ {\sf biological} \ {\sf data}$

OTHER - Following a diferent SOP.

Figure 1. Benchmark particle size distribution curves for PS47 resulting from analysis of ten replicate samples.

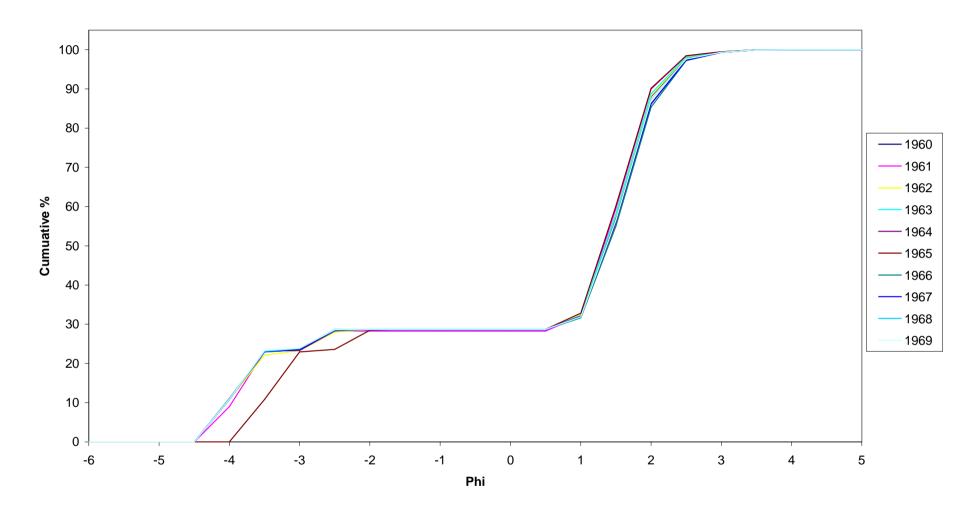


Figure 2. Particle size distribution curves from all participating laboratories for sediment samples from PS47.

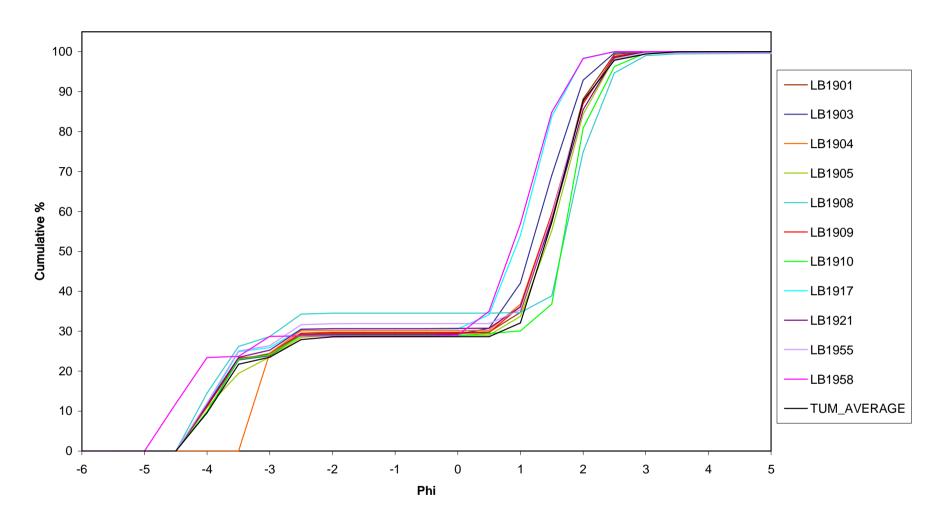
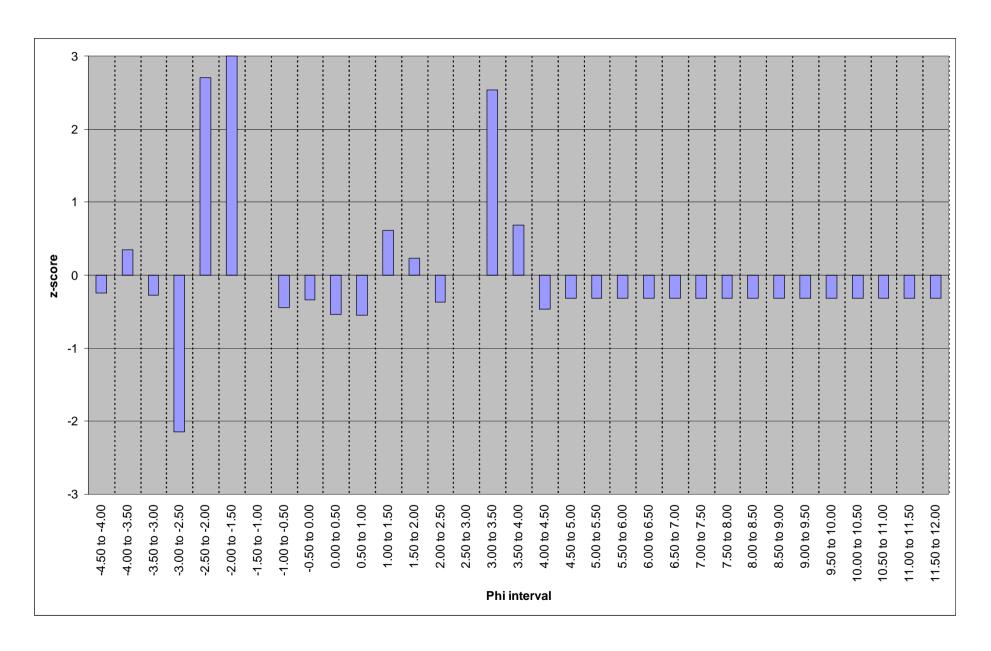


Table 2. Summary of z-scores for each half-phi interval for PS47; data from all participating laboratories included in mean and standard deviation calculations.

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LB1903	0	0	0	0	-0.16558	0.567495	-0.38203	0.179722	-0.12148	-0.15892	0	2.748502	-0.33509	0.88737	0.958744	0.84655	-0.72647	-1.09824	-1.08691	-0.31444
LB1904	0	0	0	0	-2.98954	-2.95536	3.115016	1.224603	-0.75955	-0.15892	0	-0.44189	-0.33509	-0.47069	0.040488	0.296111	-0.18718	-0.0499	-0.15686	-0.31444
LB1905	0	0	0	0	0.147685	-0.6406	0.063002	-0.58659	1.547446	-0.15892	0	-0.44189	-0.33509	-0.48758	-0.30695	0.123516	0.047162	0.521442	-0.00189	-0.31444
LB1908	0	0	0	0	1.168968	0.211843	-0.17168	1.355303	0.160762	-0.15892	0	-0.44189	-0.33509		-1.17745	-2.14238		1.801917		1.758375
LB1909	0	0	0	0		0.334124	-0.4336	0.238287	0.178019	-0.15892	0	-0.44189	-0.26523		0.043143					
LB1910	0	0	0	0		0.592392			-0.70379	-0.15892	0	-0.44189	-0.33509	-0.05953	-1.08482			0.825861		
LB1917	0	0	0	0		0.662139	-0.38691	-1.4381	-0.60606	-0.15892	0	-0.44189	-0.33509	2.863373	2.594914	1.214269		-2.26573	-1.31607	-0.31444
LB1921	0	0	0	0		0.281263	-0.2758	0.171384	-0.03058	-0.15892	0	1.22854	3.144669	-0.50481		0.124993		0.294293	-0.09328	-0.31444
LB1955	0	0	0	0		0.573917		0.187598		1.589228	0	-0.44189	-0.33509	-0.53893		0.401719		-0.29893	-0.07886	-0.31444
LB1958	0	U	0	0	0.423012	0.165671	-0.49897	-0.37262	-0.26/8/	-0.15892	0	-0.44189	-0.19869	-0.35942	-0.06803	0.179428	-0.121/5	0.375583	0.096107	-0.31444
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z-score >1.98 or <-1.98 All values equal zero

Figure 3. Summary of z-scores for the benchmark data (TUM Average); when data from all participating laboratories are included in mean and standard deviation calculations.



Results of SIMPROF testing on PSA Ring test PS47 data

Data was entered into PRIMER v. 6.1.13 in half-phi intervals; any missing data was entered as zero. The data did not need to be transformed as all data was on a similar percentage scale. A Euclidean distance matrix was created from the data; The Euclidean distance between two samples (labs) j and k, is defined algebraically

as $d_{jk} = \sqrt{\sum_{i=1}^{p} (y_{ij} - y_{ik})^2}$. From this distance matrix cluster analysis was carried out including a SIMPROF test at a 5% significance level. The red SIMPROF lines on the dendrogram indicate labs that cannot be distinguished from each other at the 5% significance level; the black lines indicate labs that can be distinguished from each other. The results are presented as a cluster dendrogram (Figure 4) and non-metric Multi-Dimensional Scaling (MDS) diagrams (Figures 5) below. It is important to note that, although the MDS plot is bounded by a box, the box does not represent either axes or scale. Two samples with a high similarity index will appear close together while those less similar will appear further apart. The 'correct' configuration of sample points will be multidimensional and the plot represents the best 2-dimensional solution to the problem. The technique should be viewed as complementary to cluster analysis, offering a different perspective of the same information.

Figure 4. Cluster dendrogram of PS47 including all laboratories, with the benchmark replicates (TUM average).

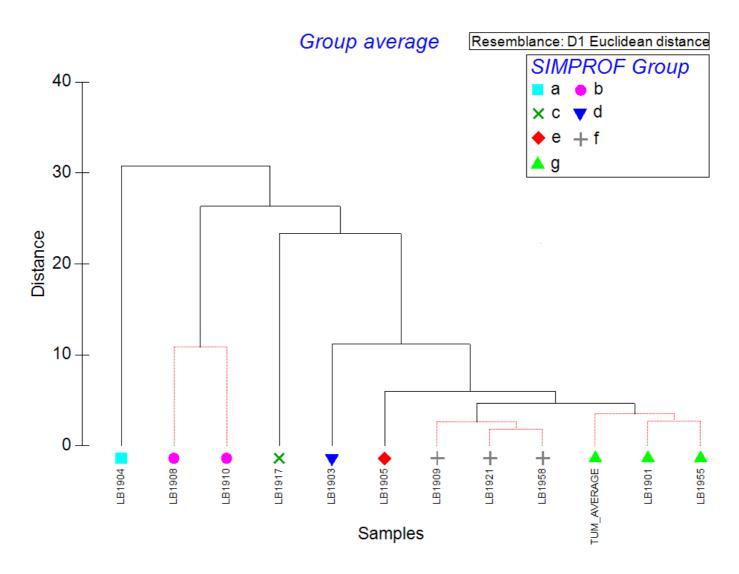
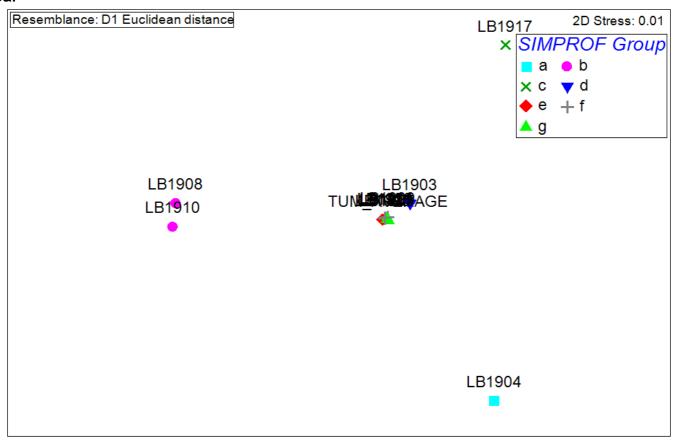
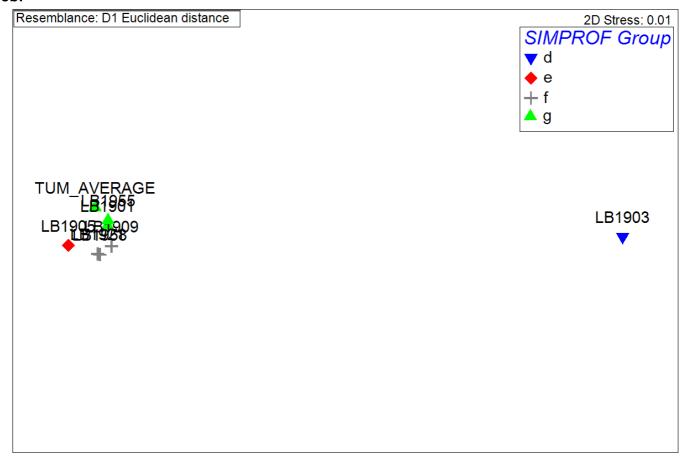


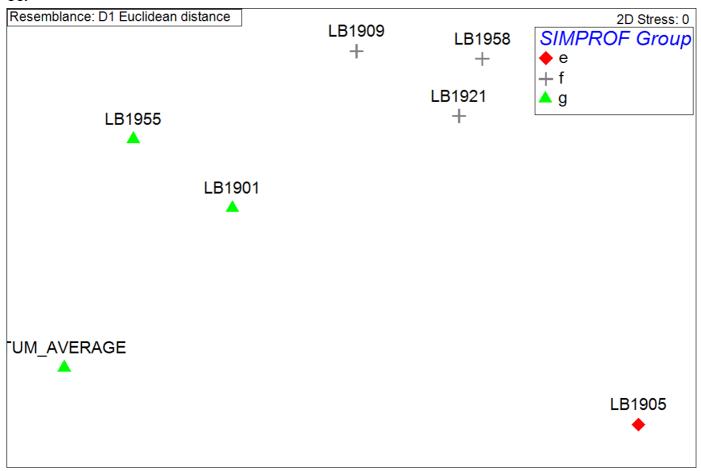
Figure 5. MDS plots of PS47 with the benchmark replicates (TUM AVERAGE) averaged; (a) including all laboratories, (b) a subset of cluster groups d through g, and (c) a subset of cluster groups e, f, and g.

5a.



5b.





The cluster analysis separates the laboratories into 7 SIMPROF cluster groups; four of these groups each comprise a single lab.

Cluster group A is formed of a single laboratory (LB1904), the cumulative percentage curve in figure 2 shows that LB1904 had a sharp rise in percentage at -3.5 phi.

Cluster group B comprises of two laboratories (LB1908 and LB1910). Table 1 shows both laboratories recorded a small percentage of silt compared to other laboratories. This is corroborated by Table 2 which shows both laboratories recording results above phi 4.0 (LB1910) and 4.5 (LB1908) respectively. This accounts for the deviation of z-scores for LB1908 from phi 4.0 - 12. The differences shown by LB1908 could also be attributed by adhering to a slightly different methodology than the NMBAQC Scheme standard.

Cluster group C is formed of a single laboratory (LB1917). This could be attributed to LB1917 recording a higher percentage of particles (between phi 0.00 and 1.00) than all other laboratories.

Cluster group D is formed of a single laboratory (LB1903). The cumulative percentage curve in figure 2 shows that LB1903 has a comparatively higher percentage increase (between 0.5 and 2.5).

Cluster groups E (LB1905), F (LB1909, LB1921 and LB1958) and G (LB1901, LB1955, and the TUM AVERAGE) have cumulative percentage curves that look very similar to one another. Cluster group E recorded a slightly lower percentage of particles (between phi -3.5 and -3) compared to other laboratories (omitting LB1904). Cluster analysis of groups F and G shows their separation just above the 5% significance level.

Appendices

Appendix 1. Final Summary Data sheets as supplied by participating laboratories (arranged by Lab Code).

Exercise Code:	PS47
LabCode:	LB1901
Sample Code:	PS471901
Equipment used (e.g. laser model and range):	Endecotts Test Sieves, Malvern Mastersizer 2000 Laser Diffractor (Model: MAL1002178)
Method used:	NMBAQC PSA SOP for supporting biological data*
Peroxide pre-treatment used:	NO*
Chemical dispersant used:	
Phi interval (explicit)	Volume %
+ sieve mesh (theoretical sieves shown in	(
brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	11.1933
-4.00 to -3.50; 11.2 mm	11.6508
-3.50 to -3.00; 8 mm	1.5644
-3.00 to -2.50; 5.6 mm	5.1260
-2.50 to -2.00; 4 mm	0.1828
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0000
-0.50 to 0.00; 1 mm	0.0000
0.00 to 0.50; (707 μm)	0.0738
0.50 to 1.00; (500 μm)	4.9219
1.00 to 1.50; (353.6 μm)	23.6213
1.50 to 2.00; (250 μm)	29.8227
2.00 to 2.50; (176.8 μm)	11.1553
2.50 to 3.00; (125 μm)	0.6878
3.00 to 3.50; (88.39 µm)	0.0000
3.50 to 4.00; (62.5 μm)	0.0000
4.00 to 4.50; (44.19 μm)	0.0000
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 µm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 μm)	0.0000
12.00 to 12.50; (0.173 μm)	0.0000
12.50 to 13.00; (0.122 μm)	0.0000
13.00 to 13.50; (0.086 μm)	0.0000

Exercise Code:	PS47
LabCode:	LB1903
Sample Code:	PS471903

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	64.0200
-4.00 to -3.50; 11.2 mm	84.4000
-3.50 to -3.00; 8 mm	6.9200
-3.00 to -2.50; 5.6 mm	34.0000
-2.50 to -2.00; 4 mm	0.9700
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0200
-0.50 to 0.00; 1 mm	0.0000
0.00 to 0.50; (707 μm)	9.5267
0.50 to 1.00; (500 μm)	73.6888
1.00 to 1.50; (353.6 μm)	175.4159
1.50 to 2.00; (250 μm)	155.1359
2.00 to 2.50; (176.8 μm)	44.4187
2.50 to 3.00; (125 μm)	1.7888
3.00 to 3.50; (88.39 μm)	0.0000
3.50 to 4.00; (62.5 μm)	0.0000
4.00 to 4.50; (44.19 μm)	0.0000
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 μm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 μm)	0.0000
12.00 to 12.50; (0.173 μm)	0.0000
12.50 to 13.00; (0.122 μm)	0.0000
13.00 to 13.50; (0.086 μm)	0.0000

Exercise Code:	PS47
LabCode:	LB1904
Sample Code:	PS471904

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	0.0000
-4.00 to -3.50; 11.2 mm	0.0000
-3.50 to -3.00; 8 mm	154.3800
-3.00 to -2.50; 5.6 mm	35.2700
-2.50 to -2.00; 4 mm	0.1300
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0000
-0.50 to 0.00; 1 mm	0.0000
0.00 to 0.50; (707 μm)	0.4508
0.50 to 1.00; (500 μm)	41.1060
1.00 to 1.50; (353.6 μm)	143.2995
1.50 to 2.00; (250 μm)	173.4701
2.00 to 2.50; (176.8 μm)	72.4667
2.50 to 3.00; (125 μm)	8.7568
3.00 to 3.50; (88.39 μm)	0.0000
3.50 to 4.00; (62.5 μm)	0.0000
4.00 to 4.50; (44.19 μm)	0.0000
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 μm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 μm)	0.0000
12.00 to 12.50; (0.173 μm)	0.0000
12.50 to 13.00; (0.122 μm)	0.0000
13.00 to 13.50; (0.086 μm)	0.0000

Exercise Code:	PS47
LabCode	LB1905
Sample Code:	PS471905

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	72.0188
-4.00 to -3.50; 11.2 mm	56.1161
-3.50 to -3.00; 8 mm	26.6312
-3.00 to -2.50; 5.6 mm	32.5892
-2.50 to -2.00; 4 mm	3.1933
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0000
-0.50 to 0.00; 1 mm	0.0000
0.00 to 0.50; (707 μm)	0.3574
0.50 to 1.00; (500 µm)	31.0310
1.00 to 1.50; (353.6 μm)	141.1629
1.50 to 2.00; (250 μm)	191.9891
2.00 to 2.50; (176.8 μm)	92.5727
2.50 to 3.00; (125 μm)	10.3804
3.00 to 3.50; (88.39 μm)	0.0000
3.50 to 4.00; (62.5 μm)	0.0000
4.00 to 4.50; (44.19 μm)	0.0000
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 μm)	0.0000
7.00 to 7.50; (5.524 μm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 μm)	0.0000
12.00 to 12.50; (0.173 μm)	0.0000
12.50 to 13.00; (0.122 μm)	0.0000
13.00 to 13.50; (0.086 μm)	0.0000

	Da 15
Exercise Code:	
LabCode:	LB1908
Sample Code:	PS471908
Equipment used (e.g. laser model and range):	Endecotts Test Sieves, Malvern Mastersizer Micro
	Laser Diffractor (Model: MAF5000)
Method used:	Sub-sample oven dried @ 105°C to constant weight,
	wet split at 63μm, followed by dry sieving >63um
Peroxide pre-treatment used:	
Chemical dispersant used: Phi interval (explicit)	
+ sieve mesh (theoretical sieves shown in	volume %
+ sieve mesn (meoreucai sieves snown m brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0,0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	14.5301
-4.00 to -3.50; 11.2 mm	11.6682
-3.50 to -3.00; 8 mm	2.4740
-3.00 to -2.50; 5.6 mm	5.6514
-2.50 to -2.00; 4 mm	0.2060
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0000
-0.50 to 0.00; 1 mm	0.0000
0.00 to 0.50; (707 μm)	0.0150
0.50 to 1.00; (500 μm)	0.1657
1.00 to 1.50; (353.6 μm)	4.1461
1.50 to 2.00; (250 μm)	36.0365
2.00 to 2.50; (176.8 μm)	19.7896
2.50 to 3.00; (125 μm)	4.3367
$3.00 \text{ to } 3.50; (88.39 \ \mu m)$	0.4065
3.50 to 4.00; (62.5 μm)	0.0439
4.00 to 4.50; $(44.19 \mu m)$	0.0437
4.50 to 5.00; (31.25 μm)	0.0525 0.0580
5.00 to 5.50; (22.097 μm) 5.50 to 6.00; (15.625 μm)	0.0580
6.00 to 6.50; (11.049 μm)	0.0593
6.50 to 7.00; (7.813 μm)	0.0507
7.00 to 7.50; (5.524 μ m)	0.0448
7.50 to 8.00; (3.906 µm)	0.0385
8.00 to 8.50; (2.762 μm)	0.0323
8.50 to 9.00; (1.953 μm)	0.0257
9.00 to 9.50; (1.381 µm)	0.0191
9.50 to 10.00; (0.977 µm)	0.0153
10.00 to 10.50; (0.691 μm)	0.0138
10.50 to 11.00; (0.488 μm)	0.0117
11.00 to 11.50; (0.345 μm)	0.0068
11.50 to 12.00; (0.244 μm)	0.0008
12.00 to 12.50; (0.173 μm)	"0"
12.50 to 13.00; (0.122 μm)	"0"
13.00 to 13.50; (0.086 μm)	"0"

Exercise Code:	PS47
LabCode	LB1909
Sample Code:	PS471909

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.00
-6.00 to -5.50; 45 mm	0.00
-5.50 to -5.00; 31.5 mm	0.00
-5.00 to -4.50; 22.4 mm	0.00
-4.50 to -4.00; 16 mm	71.95
-4.00 to -3.50; 11.2 mm	78.10
-3.50 to -3.00; 8 mm	4.63
-3.00 to -2.50; 5.6 mm	33.83
-2.50 to -2.00; 4 mm	1.35
-2.00 to -1.50; 2.8 mm	0.00
-1.50 to -1.00; 2 mm	0.00
-1.00 to -0.50; 1.4 mm	0.00
-0.50 to 0.00; 1 mm	0.01
0.00 to 0.50; (707 μm)	1.36
0.50 to 1.00; (500 μm)	42.18
1.00 to 1.50; (353.6 μm)	149.74
1.50 to 2.00; (250 μm)	177.57
2.00 to 2.50; (176.8 μm)	76.34
2.50 to 3.00; (125 μm)	7.41
3.00 to 3.50; (88.39 μm)	0.00
3.50 to 4.00; (62.5 μm)	0.00
4.00 to 4.50; (44.19 μm)	0.00
4.50 to 5.00; (31.25 μm)	0.00
5.00 to 5.50; (22.097 μm)	0.00
5.50 to 6.00; (15.625 μm)	0.00
6.00 to 6.50; (11.049 μm)	0.00
6.50 to 7.00; (7.813 μm)	0.00
7.00 to 7.50; (5.524 µm)	0.00
7.50 to 8.00; (3.906 µm)	0.00
8.00 to 8.50; (2.762 μm)	0.00
8.50 to 9.00; (1.953 μm)	0.00
9.00 to 9.50; (1.381 μm)	0.00
9.50 to 10.00; (0.977 μm)	0.00
10.00 to 10.50; (0.691 μm)	0.00
10.50 to 11.00; (0.488 μm)	0.00
11.00 to 11.50; (0.345 μm)	0.00
11.50 to 12.00; (0.244 μm)	0.00
12.00 to 12.50; (0.173 μm)	0.00
12.50 to 13.00; (0.122 μm)	0.00
13.00 to 13.50; (0.086 μm)	0.00

Exercise Code:	PS47
LabCode:	LB1910
Sample Code:	PS471910
Equipment used (e.g. laser model and range):	Retsch AS200 sirve shaker
Method used:	A modified methodology from NMBAQC PSA SOP
	for supporting biological data*
Peroxide pre-treatment used:	
Chemical dispersant used:	
Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in	(mark as "0" for not analysed or no material)
brackets)	
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	9,9332
-4.00 to -3.50; 11.2 mm	13.0701
-3.50 to -3.00; 8 mm	1.0568
-3.00 to -2.50; 5.6 mm	4.8558
-2.50 to -2.00; 4 mm -2.00 to -1.50; 2.8 mm	0.0319
-2.00 to -1.30, 2.8 mm -1.50 to -1.00; 2 mm	0.0000 0.0000
-1.00 to -0.50; 1.4 mm	0.0000
-0.50 to 0.00; 1 mm	0.0000
0.00 to 0.50; (707 μm)	0.4935
0.50 to 1.00; (500 μm)	0.6499
1.00 to 1.50; (353.6 μm)	6.6945
1.50 to 2.00; (250 μm)	44.0981
2.00 to 2.50; (176.8 µm)	15.4282
2.50 to 3.00; (125 μm)	3.3116
3.00 to 3.50; (88.39 µm)	0.2718
3.50 to 4.00; (62.5 µm)	0.0653
4.00 to 4.50; (44.19 μm)	0.0395
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 μm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 μm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 µm)	0.0000
12.00 to 12.50; (0.173 μm) 12.50 to 13.00; (0.122 μm)	0.0000 0.0000
12.30 to 13.00; (0.122 μm) 13.00 to 13.50; (0.086 μm)	0.0000
13.00 to 13.30; (0.080 μm)	0.0000

Exercise Code:	PS47
LabCode:	LB1917
Sample Code:	PS471917

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	71.6800
-4.00 to -3.50; 11.2 mm	82.7000
-3.50 to -3.00; 8 mm	6.4000
-3.00 to -2.50; 5.6 mm	28.8300
-2.50 to -2.00; 4 mm	0.3200
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0000
-0.50 to 0.00; 1 mm	0.0000
0.00 to 0.50; (707 μm)	21.6707
0.50 to 1.00; (500 μm)	123.3846
1.00 to 1.50; (353.6 μm)	184.8135
1.50 to 2.00; (250 μm)	90.6779
2.00 to 2.50; (176.8 μm)	10.0126
2.50 to 3.00; (125 μm)	0.0000
3.00 to 3.50; (88.39 μm)	0.0000
3.50 to 4.00; (62.5 μm)	0.0000
4.00 to 4.50; (44.19 μm)	0.0000
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 μm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 μm)	0.0000
12.00 to 12.50; (0.173 μm)	0.0000
12.50 to 13.00; (0.122 μm)	0.0000
13.00 to 13.50; (0.086 μm)	0.0000

Exercise Code:	PS47
LabCode:	LB1921
Sample Code:	PS471921

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	71.7300
-4.00 to -3.50; 11.2 mm	74.0500
-3.50 to -3.00; 8 mm	11.0300
-3.00 to -2.50; 5.6 mm	32.4500
-2.50 to -2.00; 4 mm	1.0400
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0100
-0.50 to 0.00; 1 mm	0.4800
0.00 to 0.50; (707 μm)	0.2275
0.50 to 1.00; (500 μm)	33.3247
1.00 to 1.50; (353.6 μm)	133.2910
1.50 to 2.00; (250 μm)	173.2101
2.00 to 2.50; (176.8 μm)	81.0611
2.50 to 3.00; (125 μm)	9.1151
3.00 to 3.50; (88.39 μm)	0.0000
3.50 to 4.00; (62.5 μm)	0.0000
4.00 to 4.50; (44.19 μm)	0.0000
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 μm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 μm)	0.0000
12.00 to 12.50; (0.173 μm)	0.0000
12.50 to 13.00; (0.122 μm)	0.0000
13.00 to 13.50; (0.086 μm)	0.0000

Exercise Code:	PS47
LabCode	LB1955
Sample Code:	PS471955

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	63.9000
-4.00 to -3.50; 11.2 mm	75.3000
-3.50 to -3.00; 8 mm	48.4000
-3.00 to -2.50; 5.6 mm	129.4000
-2.50 to -2.00; 4 mm	79.5000
-2.00 to -1.50; 2.8 mm	11.6000
-1.50 to -1.00; 2 mm	22.5000
-1.00 to -0.50; 1.4 mm	1.7000
-0.50 to 0.00; 1 mm	0.2000
0.00 to 0.50; (707 μm)	0.0775
0.50 to 1.00; (500 μm)	0.0571
1.00 to 1.50; (353.6 μm)	0.0434
1.50 to 2.00; (250 μm)	0.0369
2.00 to 2.50; (176.8 μm)	0.0405
2.50 to 3.00; (125 μm)	0.0347
3.00 to 3.50; (88.39 μm)	0.0289
3.50 to 4.00; (62.5 μm)	0.0240
4.00 to 4.50; (44.19 μm)	0.0139
4.50 to 5.00; (31.25 μm)	0.0086
5.00 to 5.50; (22.097 μm)	0.0065
5.50 to 6.00; (15.625 μm)	0.0045
6.00 to 6.50; (11.049 μm)	0.0036
6.50 to 7.00; (7.813 μm)	0.0033
7.00 to 7.50; (5.524 μm)	0.0032
7.50 to 8.00; (3.906 µm)	0.0029
8.00 to 8.50; (2.762 μm)	0.0025
8.50 to 9.00; (1.953 μm)	0.0020
9.00 to 9.50; (1.381 μm)	0.0015
9.50 to 10.00; (0.977 μm)	0.0011
10.00 to 10.50; (0.691 μm)	0.0009
10.50 to 11.00; (0.488 μm)	0.0007
11.00 to 11.50; (0.345 μm)	0.0005
11.50 to 12.00; (0.244 μm)	0.0004
12.00 to 12.50; (0.173 μm)	0.0003
12.50 to 13.00; (0.122 μm)	0.0002
13.00 to 13.50; (0.086 μm)	0.0002

Exercise Code:	PS47
LabCode:	LB1958
Sample Code:	PS471958

Phi interval (explicit)	Volume/Weight
+ sieve mesh (theoretical sieves shown in brackets)	(mark as "0" for not analysed or no material)
-6.50 to -6.00; 63 mm	0.0000
-6.00 to -5.50; 45 mm	0.0000
-5.50 to -5.00; 31.5 mm	0.0000
-5.00 to -4.50; 22.4 mm	0.0000
-4.50 to -4.00; 16 mm	78.6400
-4.00 to -3.50; 11.2 mm	75.9000
-3.50 to -3.00; 8 mm	1.8500
-3.00 to -2.50; 5.6 mm	33.2000
-2.50 to -2.00; 4 mm	0.7900
-2.00 to -1.50; 2.8 mm	0.0000
-1.50 to -1.00; 2 mm	0.0000
-1.00 to -0.50; 1.4 mm	0.0000
-0.50 to 0.00; 1 mm	0.0200
0.00 to 0.50; (707 μm)	1.2265
0.50 to 1.00; (500 μm)	39.3721
1.00 to 1.50; (353.6 μm)	144.4254
1.50 to 2.00; (250 μm)	184.9248
2.00 to 2.50; (176.8 μm)	88.5612
2.50 to 3.00; (125 μm)	11.1895
3.00 to 3.50; (88.39 μm)	0.0000
3.50 to 4.00; (62.5 μm)	0.0000
4.00 to 4.50; (44.19 μm)	0.0000
4.50 to 5.00; (31.25 μm)	0.0000
5.00 to 5.50; (22.097 μm)	0.0000
5.50 to 6.00; (15.625 μm)	0.0000
6.00 to 6.50; (11.049 μm)	0.0000
6.50 to 7.00; (7.813 μm)	0.0000
7.00 to 7.50; (5.524 µm)	0.0000
7.50 to 8.00; (3.906 µm)	0.0000
8.00 to 8.50; (2.762 μm)	0.0000
8.50 to 9.00; (1.953 μm)	0.0000
9.00 to 9.50; (1.381 μm)	0.0000
9.50 to 10.00; (0.977 μm)	0.0000
10.00 to 10.50; (0.691 μm)	0.0000
10.50 to 11.00; (0.488 μm)	0.0000
11.00 to 11.50; (0.345 μm)	0.0000
11.50 to 12.00; (0.244 μm)	0.0000
12.00 to 12.50; (0.173 μm)	0.0000
12.50 to 13.00; (0.122 μm)	0.0000
13.00 to 13.50; (0.086 μm)	0.0000

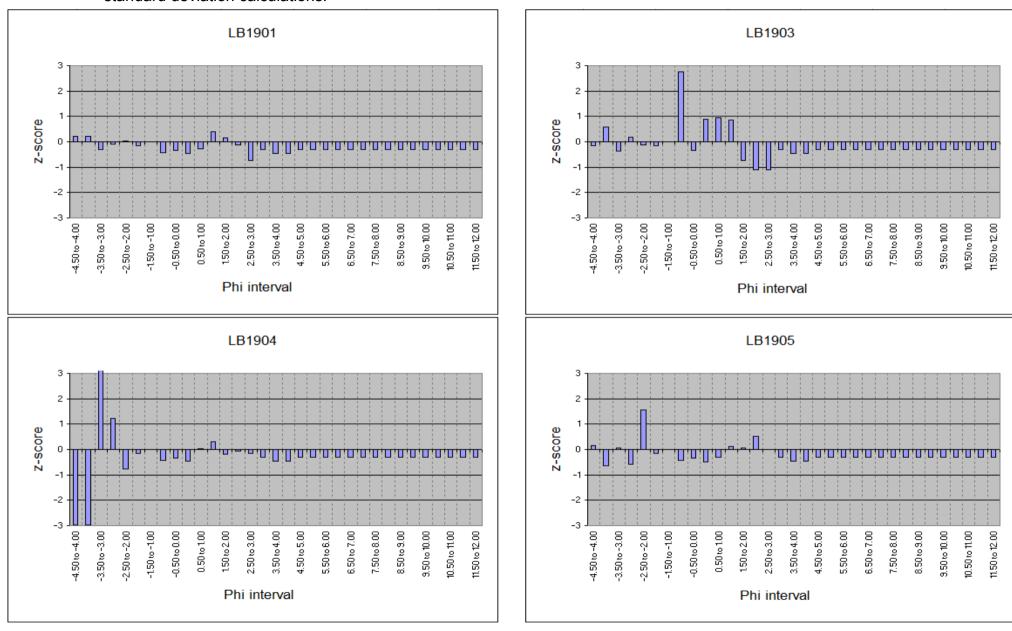
Appendix 2. Z-score calculations when data from all participating laboratories are included in mean and standard deviation calculations.

LB1921 27.89123 -0.13964 13.05289 0.294293 1.467769 -0.09328 0 -0.31444 0 -0.4515 0 -0.46836 LB1955 28.74218 -0.01589 10.4021 -0.29893 1.485086 -0.07886 0 -0.31444 0 -0.4515 0 -0.46836 LB1958 28.01424 -0.12175 13.41613 0.375583 1.695102 0.096107 0 -0.31444 0 -0.4515 0 -0.46836 Mean 28.85148 11.73785 1.57974 0.06166 0.009925 0.007566 St. Dev 6.876774 4.46846 1.200347 0.196095 0.021983 0.016223		0		-		-		-		0		0	
## Company Part		<u>-</u>		3.5		99		2.5		5.0		6.	
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Tell AVER 0.41100		1 6	5	4	5	1 6	5	l f	8	1 6	5	<u> </u>	5
TUM AVEE 8.061000		6.5	SS.	<u>-</u>	8	9.9	Š	<u>.</u>	ŝ	5.5	Se.	0.2	Š
ESTROID 11.1953 0.218577 11.85077 12.85077 12.85078 0.207117 15.84431 -0.20752	TUM AVE D	0.501.008	0.24029		0.244282		0.27022		2 14472		2.705402		2 00 4088
B1903											0.045408		
B1900													
B1950 10.944													
LB1908 14-5307 1.16898 1.69818 0.211941 2.474003 -0.17168 5.67418 1.355303 0.200002 0.167702 0 -0.16892 1.69167 1.69167 0.79167 0.79167 0.79167 0.79167 0.20027 0.200274 0.79167 0.79167 0.79167 0.200276 0.200274 0.200274 0.200274 0.200274 0.200274 0.200274 0.200276 0.200274 0.200276 0.200274 0.200276 0.200274 0.200276 0.200276 0.200274 0.200276													
B1990	1												
BISTOR 9.833192													
BISSON 11.55122 0.200244 13.2271 0.002139 0.031395 0.041489 0.051688 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.000000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.00000 0 0.016892 0.000000 0.016892 0.000000 0.016892 0.000000 0.016892 0.000000 0.016892 0.0000000 0.016892 0.00000000 0.016892 0.000000000 0.016892 0.0000000000000000000000000000000000													
BISSON 150000 0.000000 0.000000 0.000000 0.0000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.0000000 0.00000000													
		11.55123		13.3271	0.662139	1.03136		4.845954	-1.4381	0.051568	-0.60606	0	
	LB1921	11.55035	0.320274	11.92393	0.281263		-0.2758	5.225275	0.171384	0.167466	-0.03058	0	-0.15892
Mean 10.42569 10.88774 3.624743 5.163566 0.173626 0.009622	LB1955	12.06015	0.465476	13.00209	0.573917	1.328803	-0.34254	5.231111	0.187598	0.285945	0.557708	0.01682	1.589228
St. Dev 3.510943 3.594061 6.702788 0.359942 0.201395 0.009022	LB1958	11.91317	0.423612	11.49808	0.165671	0.280256	-0.49897	5.029465	-0.37262	0.119677	-0.26787	0	-0.15892
TUM AVEF 0	Mean	10.42589		10.88774		3.624743		5.163586		0.173626		0.001529	
TUM AVER 0 0 0 0 -0.44189 0 -0.33509 0 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0.003075 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0.003075 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.33509 0.73778 -0.46861 4.92180 -0.30567 4 28.7472 0.84665 18.181930 0 0 0 0 0 0.44189 0 -0.33509 0.7378 0.7378 4.718622 -0.30652 21.7707 0.26911 18.19180 0 0 0 0 0 0 0.44189 0 -0.33509 0.7378 0.7378 0.7378 4.718622 -0.30652 21.7707 0.26911 18.19180 0 0 0 0 0 0 0.44189 0 0.01552 -0.35809 0.748719 0.40758 0.74874 4.74873 -0.21816 18.1917 0 0 0 0 0 0.44189 0 0.01552 -0.35809 0.748719 0.33623 0.46888 0.043144 31.74413 0.723516 18.1917 0 0 0 0 0.44189 0.007552 -0.35809 0.484711 0.33623 0.46888 0.043144 0.268450 0.73851 0.48888 0.748414 0 0.44819 0 0.001462 0.33609 0.448711 0.33623 0.46888 0.043144 0.268450 0	St Dev	3.510943		3.684061		6.702788		0.359942		0.201395		0.009622	
TUM AVER 0 0 0 0 -0.44189 0 -0.33509 0 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0.003075 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0.003075 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.33509 0.73778 -0.46861 4.92180 -0.30567 4 28.7472 0.84665 18.181930 0 0 0 0 0 0.44189 0 -0.33509 0.7378 0.7378 4.718622 -0.30652 21.7707 0.26911 18.19180 0 0 0 0 0 0 0.44189 0 -0.33509 0.7378 0.7378 0.7378 4.718622 -0.30652 21.7707 0.26911 18.19180 0 0 0 0 0 0 0.44189 0 0.01552 -0.35809 0.748719 0.40758 0.74874 4.74873 -0.21816 18.1917 0 0 0 0 0 0.44189 0 0.01552 -0.35809 0.748719 0.33623 0.46888 0.043144 31.74413 0.723516 18.1917 0 0 0 0 0.44189 0.007552 -0.35809 0.484711 0.33623 0.46888 0.043144 0.268450 0.73851 0.48888 0.748414 0 0.44819 0 0.001462 0.33609 0.448711 0.33623 0.46888 0.043144 0.268450 0													
TUM AVER 0 0 0 0 -0.44189 0 -0.33509 0 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0.003075 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0.003075 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.25771 28.62181 0.407562 18.181930 0 0 0 0 0.44189 0 -0.33509 0.73778 -0.46861 4.92180 -0.33509 0.73778 -0.46861 4.92180 -0.30567 4 28.7472 0.84665 18.181930 0 0 0 0 0 0.44189 0 -0.33509 0.7378 0.7378 4.718622 -0.30652 21.7707 0.26911 18.19180 0 0 0 0 0 0 0.44189 0 -0.33509 0.7378 0.7378 0.7378 4.718622 -0.30652 21.7707 0.26911 18.19180 0 0 0 0 0 0 0.44189 0 0.01552 -0.35809 0.748719 0.40758 0.74874 4.74873 -0.21816 18.1917 0 0 0 0 0 0.44189 0 0.01552 -0.35809 0.748719 0.33623 0.46888 0.043144 31.74413 0.723516 18.1917 0 0 0 0 0.44189 0.007552 -0.35809 0.484711 0.33623 0.46888 0.043144 0.268450 0.73851 0.48888 0.748414 0 0.44819 0 0.001462 0.33609 0.448711 0.33623 0.46888 0.043144 0.268450 0		8		99		9				_		-	
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TUM AVE		2	ø	2	p	2	ø	0	ø	-	p	-	ø
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TUM AVER 0 0 0 0 -0.44189 0 -0.33509 0 -0.5462 3.40973 -0.547 25.77523 08.1100		4	φ.	3.	φ.	9.0	ο̈	0.0	ισ.		φ.	<u>.</u>	φ.
EB1901	TUM AVER				-0.44189			0					
LB1903				_				0.073778					
LB1904 0													
LB1906 0 0 0 -0.44189 0 -0.33509 0.05421 -0.46758 4.716862 -0.30859 21.45195 -0.122516 LB1909 0 0 0 -0.44189 0.001552 -0.26523 0.210566 -0.33529 6.845585 0.04312 32.2455 0.356913 LB1917 0 0 0 -0.44189 0 -0.33529 0.834513 -0.06523 0.486353 -1.08422 86.94533 -1.08423 86.9453 -1.08423 86.94533 -1.08423 86.94533 -1.08423 86.94533 -1.08423													
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LB1910 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0													
LB1917				_									
LB1921 0													
LB1955 O		_											
LB1958 0													
Mean O		_											
St Dev			0		-0.44189		-0.19869		-0.35942		-0.06803		0.1/9428
TUM AVEF 30.46271													
TUM AVER 30.48271	St Dev	0		0.000964		0.022212		1.025952		5.226894		7.637599	
TUM AVER 30.48271													
TUM AVER 30.48271				_									
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LB1901 29.82287 0.141227 11.15625 0.13038 0.887843 0.74503 0 -0.31444 0 -0.4515 0 -0.46836 LB1903 23.85589 -0.72647 6.830394 -1.09824 0.275071 -1.08891 0 -0.31444 0 -0.4515 0 -0.46836 LB1905 27.56426 -0.18718 11.5149 -0.0499 1.391462 -0.18886 0 -0.31444 0 -0.4515 0 -0.46836 LB1905 29.17581 0.047162 14.06789 0.521442 1.577486 -0.00189 0 -0.31444 0 -0.4515 0 -0.46836 LB1908 38.03683 1.044829 19.78986 1.801917 43.36721 2.2898181 0.408469 1.758375 0.40389 1.544991 0.043746 27.50191 1.84919 0.404636 1.84919 0.40469 1.84919 0.40469 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 1.84919 0.404636 0.40463		1.50 to 2.00	s-score	.00 to 2.	score.	2.50 to 3.00	s-score	00 to 3.	score.	3.50 to 4.00	score.	4.00 to 4.50	score.
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LB1905 29.17581 0.047162 14.06789 0.521442 1.577468 -0.00189 0 -0.31444 0 -0.4515 0 -0.46636 LB1908 36.03683 1.044829 19.78525 1.801917 4.338721 22.25618 0.408469 17.758375 0.04389 1.544991 0.043748 2.25018	LB1901	30.46271 29.82267	0.2343 0.141227	10.10515 11.15525	-0.36538 -0.13038	2 5 1.575166 0.687843	-0.00381 -0.74303	9 8 9 0.557888	2.530546 -0.31444	0.025077 0	0.689246 -0.4515	0	-0.46636 -0.46636
LB1908 36,03653 1,044829 19,78965 1,801917 4,336721 2,295619 0,406469 1,758375 0,043889 1,544991 0,043746 2,230182 1,81909 2,75529 -0,18884 11,84547 0,024083 1,149086 -0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31444 0 -0,4515 0 -0,46636 0,35879 0 -0,31492 0 -0,31492 0 -0,31492 0 -0,46636 0,35879 0,35879 0,35879 0 -0,46636 0,35879 0 -0,	LB1901 LB1903	30.46271 29.82267 23.85569	0.2343 0.141227 -0.72647	10.10515 11.15525 6.830394	-0.36538 -0.13038 -1.09824	2 5 1.575188 0.687843 0.275071	-0.00381 -0.74303 -1.08891	0.557888 0 0	2.530546 -0.31444 -0.31444	0.025077 0 0	0.689246 -0.4515 -0.4515	0	-0.46636 -0.46636 -0.46636
LB1909 27.5529 -0.18884 11.84547 0.024083 1.149066 -0.35879 0 0 -0.31444 0 -0.4515 0 -0.46636 LB1910 44.09809 22.71715 15.42818 0.825861 3.31157 1.442774 0.271789 1.071865 0.08529 2.5186504 0.039478 15.57095	LB1901 LB1903 LB1904	30.46271 29.82267 23.85569 27.56426	0.2343 0.141227 -0.72647 -0.18718	10.10515 11.15525 6.830394 11.5149	-0.36538 -0.13038 -1.09824 -0.0499	1.575166 0.687843 0.275071 1.391452	-0.00381 -0.74303 -1.08691 -0.15686	0.557888 0 0 0	2.530546 -0.31444 -0.31444 -0.31444	0.025077 0 0 0	0.689246 -0.4515 -0.4515 -0.4515	0 0	-0.46636 -0.46636 -0.46636 -0.46636
LB1910	LB1901 LB1903 LB1904 LB1905	30.46271 29.82267 23.85569 27.56426 29.17581	0.2343 0.141227 -0.72647 -0.18718 0.047162	10.10515 11.15525 6.830394 11.5149 14.06789	-0.36538 -0.13038 -1.09824 -0.0499 0.521442	1.575166 0.687843 0.275071 1.391452 1.577466	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189	0.557888 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0	0.689246 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1917	LB1901 LB1903 LB1904 LB1905 LB1908	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829	10.10515 11.15525 6.830394 11.5149 14.08789 19.78965	-0.38538 -0.13038 -1.09824 -0.0499 0.521442 1.801917	1.575166 0.687843 0.275071 1.391452 1.577466 4.336721	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819	0.557888 0 0 0 0 0 0 0.406469	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375	0.025077 0 0 0 0 0 0 0.043889	0.889248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991	0 0 0 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182
LB1921 27.89123 -0.13964 13.05289 0.294293 1.467769 -0.09328 0 -0.31444 0 -0.4515 0 -0.46636 LB1955 28.74218 -0.01589 10.4021 -0.28893 1.485086 -0.07886 0 -0.31444 0 -0.4515 0 -0.46636 LB1958 28.01424 -0.12175 13.41613 0.375583 1.695102 0.096107 0 -0.31444 0 -0.4515 0 -0.46636 Mean 28.85148 11.73785 1.57974 0.06166 0.009925 0.007566 St Dev 6.876774 4.46846 1.200347 0.196095 0.021983 0.016223 0.01	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547	-0.38538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083	1.575188 0.687843 0.275071 1.391452 1.577488 4.336721 1.149088	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879	0.557888 0 0 0 0 0 0 0 0 0.406469	2.530546 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444	0.025077 0 0 0 0 0 0 0.043889	0.889248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515	0 0 0 0 0 0.043748	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636
LB1955 28.74218 -0.01589 10.4021 -0.29893 1.485086 -0.07886 0 -0.31444 0 -0.4515 0 -0.46636 LB1958 28.01424 -0.12175 13.41613 0.375583 1.695102 0.096107 0 -0.31444 0 -0.4515 0 -0.46636 Mean 28.85148 11.73785 1.57974 0.06166 0.009925 0.007568 St Dev 0 .876774 4.46846 1.200347 0.196095 0.021983 0.016223 0.016	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818	-0.38538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861	1.575168 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157	-0.00381 -0.7 4303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774	0.557888 0 0 0 0 0.408469 0 0.271789	2.530546 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071565	0.025077 0 0 0 0 0 0 0.043889 0 0.06529	0.689246 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504	0 0 0 0 0 0.043746 0 0.039478	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 1.967095
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Mean St Dev B	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293	1.575188 0.687843 0.275071 1.391452 1.577488 4.338721 1.149088 3.31157 0 1.467789	-0.00381 -0.74303 -1.08891 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444	0.025077 0 0 0 0 0 0.043889 0 0.08529 0	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
St Dev 6.876774	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26578 0.294293 -0.29893	1.575186 0.687843 0.275071 1.391452 1.577486 4.336721 1.149086 3.31157 0 1.467769 1.485086	-0.00381 -0.74303 -1.08891 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886	0.557888 0 0 0 0 0 0.406469 0 0.271789 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0.043889 0 0.08529 0	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636
TUM AVEF 0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26578 0.294293 -0.29893	1.575186 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.467769 1.485086 1.695102	-0.00381 -0.74303 -1.08891 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636
TUM AVEF 0 -0.31492 0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26578 0.294293 -0.29893	2 0.687843 0.275071 1.391452 1.577466 4.336721 1.149066 3.31157 0 1.467769 1.485086 1.695102 1.57974	-0.00381 -0.74303 -1.08891 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636
TUM AVEF 0 -0.31492 0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26578 0.294293 -0.29893	2 0.687843 0.275071 1.391452 1.577466 4.336721 1.149066 3.31157 0 1.467769 1.485086 1.695102 1.57974	-0.00381 -0.74303 -1.08891 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636
TUM AVEF 0 -0.31492 0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.74218 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26578 0.294293 -0.29893	2 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08891 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515	0 0 0 0 0.043746 0 0.039478 0 0 0 0.007586 0.018223	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636
TUM AVEF 0 -0.31492 0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.74218 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13864 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26578 0.294293 -0.29893	2 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08891 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007588 0.016223	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636
TUM AVEF 0 -0.31492 0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.74218 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13864 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.29893 0.375583	2 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007588 0.016223	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 1.967095 -0.46636 -0.46636 -0.46636
TUM AVER 0 -0.31492 0 <t< td=""><td>LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean</td><td>30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.74218 28.85148 6.876774</td><td>0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13864 -0.01589 -0.12175</td><td>10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846</td><td>0.29893 0.375583</td><td>2 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347</td><td>-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107</td><td>0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444</td><td>0.025077 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0 0.009925 0.021983</td><td>0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515 -0.4515</td><td>0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007588 0.016223</td><td>-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 1.967095 -0.46636 -0.46636 -0.46636</td></t<>	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.74218 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13864 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.29893 0.375583	2 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007588 0.016223	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 1.967095 -0.46636 -0.46636 -0.46636
LB1903	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean St Dev	29.82287 29.82287 23.85669 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46848	0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825881 -2.26578 0.294293 -0.29893 0.375583	1.575166 0.687843 0.275071 1.391452 1.577466 4.336721 1.149066 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 -0.35879 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007566 0.016223	-0.48636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1904	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1955 LB1955 LB1958 Mean St Dev	29.82287 29.82287 23.85569 27.56428 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825881 -2.26573 0.294293 -0.29893 0.375583	1.575186 0.687843 0.275071 1.391452 1.577486 4.336721 1.149066 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0 0.043889 0 0.08529 0 0 0 0.009925 0.001983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0.043746 0 0.039478 0 0 0.007586 0.016223	-0.48636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1905 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean St Dev	29.82287 29.82287 23.85569 27.56428 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293 -0.29893 0.375583	1.575186 0.687843 0.275071 1.391452 1.577486 4.336721 1.149066 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444	0.025077 0 0 0 0 0 0 0.043889 0 0.08529 0 0 0 0.009925 0.001983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0.043746 0 0.039478 0 0 0.007586 0.016223	-0.48636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1905 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean St Dev	29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293 -0.29893 0.375583	1.575188 0.687843 0.275071 1.391452 1.577488 4.336721 1.149088 3.31157 0 1.467789 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0.406469 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.314492	0.025077 0 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007586 0.016223	-0.48636 -0.46636 -0.46636 -0.46636 -0.46636 2.230182 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1908	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1955 LB1955 LB1958 Mean St Dev	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	-0.36538 -0.13038 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825881 -2.26673 0.294293 -0.29893 0.375583	2 0.687843 0.275071 1.391452 1.577468 4.338721 1.149088 3.31157 0 1.487769 1.485088 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.0189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0.406469 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.314492 -0.31492 -0.31492 -0.31492	0.025077 0 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007586 0.018223	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1909 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955 LB1955 Mean St Dev	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13864 -0.01589 -0.12175	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293 -0.29893 0.375583	1.575166 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.487769 1.485088 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0.025077 0 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007566 0.016223	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1910 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0.31492 1 -0.31492 0 -0.31492 1 -0	LB1901 LB1903 LB1904 LB1905 LB1909 LB1910 LB1917 LB1921 LB1955 LB1955 LB1958 Mean St Dev	29.82267 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293 -0.29893 0.375583	1.575166 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.487769 1.485088 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0.025077 0 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 2.518504 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0.043746 0 0.039478 0 0 0.007566 0.016223	-0.48636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
LB1917 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 1 -0.31492 0 -0	LB1901 LB1903 LB1904 LB1905 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean St Dev TUM AVEF LB1901 LB1903 LB1904 LB1905 LB1908	29.82267 23.85669 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846	0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825881 -2.26578 0.294293 -0.298293 0.375583	1.575166 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.487769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 -1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 -1.758375 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0.025077 0 0 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515	0 0 0 0 0.043746 0 0.039478 0 0 0.007566 0.016223	-0.48636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
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LB1955 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 LB1958 0 -0.31492 0 -0.3	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1955 LB1955 LB1958 Mean St Dev TUM AVEF LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1909 LB1910	29.82287 29.82287 23.85569 27.56428 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846 9.6 0 0 0 0 0 0 0 0 0 0 0 0	0.36538 -0.13038 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825881 -2.26573 0.294293 -0.29893 0.375583	1.575188 0.687843 0.275071 1.391452 1.577468 4.336721 1.149066 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 -0.35879 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0.406469 0 0 0.271789 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444 -0.31444 -0.31449 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0.025077 0 0 0 0 0 0 0.043889 0 0.08529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515	0 0 0 0 0 0.043748 0 0.039478 0 0 0 0.007566 0.016223	-0.48638 -0.46636
LB1958 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 -0.31492 0 Mean 0.004773 0.005269 0.005412 0.005153 0.004647 0.004072	LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1955 LB1958 Mean St Dev TUM AVEF LB1901 LB1903 LB1904 LB1904 LB1905 LB1908 LB1909 LB1910 LB1910 LB1917	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	10.10515 11.15525 6.830394 11.5149 11.5149 11.614547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846 99 0 0 0 0 0.05796 0 0	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.25673 0.294293 -0.29893 0.375583	1.575166 0.687843 0.275071 1.391452 1.577466 4.338721 1.149068 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347 2.56 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 2.296819 -0.35879 1.442774 -1.31607 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0.406469 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 1.758375 -0.31444 1.071585 -0.31444 -0.31444 -0.31444 -0.31444 -0.31449 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0.025077 0 0 0 0 0 0 0.043889 0 0.08529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007586 0.016223	-0.48636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492
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	LB1901 LB1903 LB1904 LB1909 LB1910 LB1917 LB1921 LB1955 LB1955 LB1908 LB1909 LB1917 LB1951 LB1901 LB1903 LB1908 LB1908 LB1908 LB1908 LB1909 LB1917 LB1955	30.46271 29.82267 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175 -0.31492	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293 -0.29893 0.375583 -0.31492	1.575166 0.687843 0.275071 1.391452 1.577466 4.336721 1.149066 3.31157 0 1.467769 1.487769 1.487769 1.49064 1.695102 1.57974 1.200347 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 -0.35879 -1.442774 -1.31807 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0.406469 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31492	0.025077 0 0 0 0 0 0 0 0.043889 0 0 0.08529 0 0 0 0 0 0 0 0 0 0 0 0 0	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007566 0.016223 \$\frac{2}{2}\$ \$\frac{2}{2}\$ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
DELDET V.VICTOT	LB1901 LB1903 LB1904 LB1905 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean St Dev TUM AVER LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1955 LB1958 LB1955 LB1958	29.82287 29.82287 23.85669 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.878774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175 -0.31492	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.45281 13.41613 11.73785 4.46846	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293 -0.29893 0.375583 -0.31492	1.575166 0.687843 0.275071 1.391452 1.577468 4.336721 1.149086 3.31157 0 1.487769 1.485769 1.695102 1.57974 1.200347 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 -0.35879 -1.442774 -1.31807 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31492	0.025077 0 0 0 0 0 0 0 0.043889 0 0.06529 0 0 0 0.009925 0.021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515	0 0 0 0 0 0.043746 0 0.039478 0 0 0 0.007566 0.016223	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636
	LB1901 LB1903 LB1904 LB1904 LB1905 LB1909 LB1910 LB1917 LB1921 LB1955 LB1958 Mean St Dev TUM AVEF LB1901 LB1903 LB1904 LB1905 LB1908 LB1909 LB1917 LB1955 LB1958 Mean	29.82287 23.85569 27.56426 29.17581 36.03653 27.5529 44.09809 14.61273 27.89123 28.74218 28.01424 28.85148 6.876774	0.2343 0.141227 -0.72647 -0.18718 0.047162 1.044829 -0.18884 2.217115 -2.07056 -0.13964 -0.01589 -0.12175 -0.31492	10.10515 11.15525 6.830394 11.5149 14.06789 19.78965 11.84547 15.42818 1.613537 13.05289 10.4021 13.41613 11.73785 4.46846 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.36538 -0.13038 -1.09824 -0.0499 0.521442 1.801917 0.024083 0.825861 -2.26573 0.294293 -0.29893 0.375583 -0.31492	1.575166 0.687843 0.275071 1.391452 1.577468 4.336721 1.149066 3.31157 0 1.467769 1.485086 1.695102 1.57974 1.200347	-0.00381 -0.74303 -1.08691 -0.15686 -0.00189 -0.35879 -1.442774 -1.31807 -0.09328 -0.07886 0.096107	0.557888 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.530548 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31444 -0.31492	0.025077 0 0 0 0 0 0 0.043889 0.08529 0 0 0 0 0.009925 0.0021983	0.689248 -0.4515 -0.4515 -0.4515 -0.4515 1.544991 -0.4515	0 0 0 0 0.043746 0 0.039478 0 0 0.007566 0.016223 9: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636 -0.46636

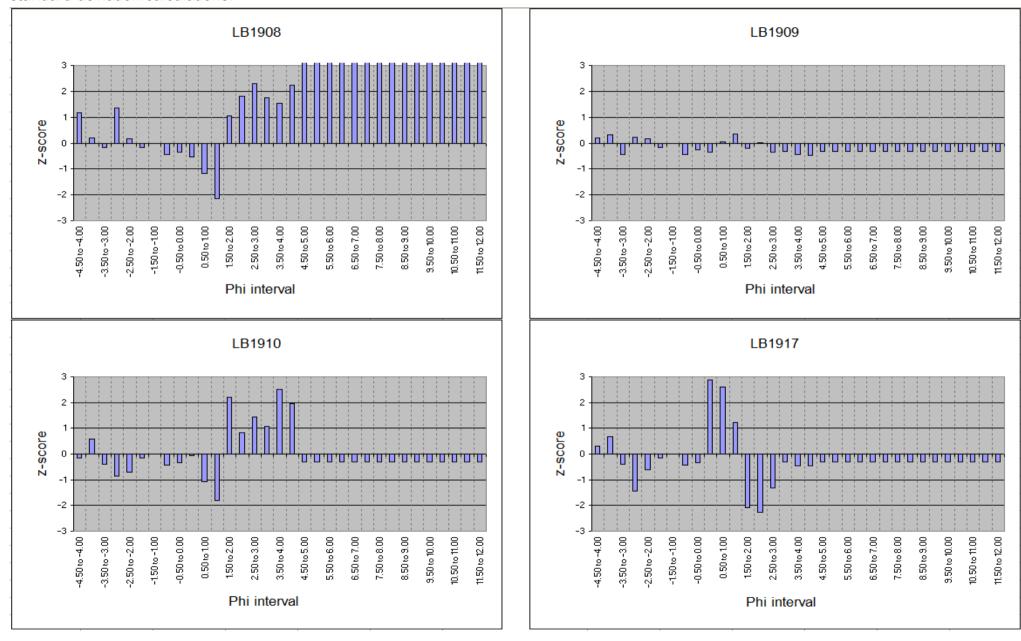
Appendix 2. Z-score calculations when data from all participating laboratories are included in mean and standard deviation calculations.

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	.50 to 8.00		99		9.00		99		9.50 to 10.00		5	
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	t c	90	ş	910	.50 to	9) to	910	¥	8	ġ	8
	36	z-s core	8.00 to	z-s core	8	z-s co re	9.00 to	z-s core	8	z-s core	10.00 to	z-score
TUM AVER	20	-0.31492	0	-0.31492	<u> </u>	-0.31492	0	-0.31492	0	-0.31492		-0.31492
LB1901	0	-0.31492	0	-0.31492	0	-0.31492	0	-0.31492	0	-0.31492	0	-0.31492
LB1903	o	-0.31492	Ö	-0.31492	0	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492
LB1904	Ö	-0.31492	Ö	-0.31492	0	-0.31492	0	-0.31492	Ö	-0.31492	Ö	-0.31492
LB1905	o	-0.31492	Ö	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492	Ö	-0.31492
LB1908	0.038524	3.149183	0.032258		0.025702	3.149183	0.019148		0.015259	3.149183	0.01375	3.149183
LB1909	0.030324	-0.31492	0.002230	-0.31492	0.020702	-0.31492	0.010140	-0.31492	0.013230	-0.31492	0.01373	-0.31492
LB1910	Ö	-0.31492	ŏ	-0.31492	ō	-0.31492	ŏ	-0.31492	ō	-0.31492	ŏ	-0.31492
LB1917	0	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492	0	-0.31492	ō	-0.31492
LB1921	0	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492
LB1955	ō	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492	ō	-0.31492
LB1958	0	-0.31492	0	-0.31492	o	-0.31492	o	-0.31492	o	-0.31492	0	-0.31492
Mean	0.003502		0.002933		0.002337		0.001741		0.001387		0.00125	
St. Dev	0.011121		0.009312		0.00742		0.005527		0.004405		0.003969	- 1
							-				0	
	11.00		11.50		12.00				12.50 to 13.00		13.00 to 13.50	
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	20	9	8	20	99	9	8	20.	8	ĕ	8	į į
	10.50 to	z-s core	11.00	z-score	-	z-s co re	12	z-score	5	z-score	6	Z-score
TUM AVEF	0	-0.31492	0	-0.31492	0	-0.31492	0	0	0	0	0	0
LB1901	0	-0.31492	0	-0.31492	0	-0.31492	,			_	0	0
		-0.31432	U	-0.31492	U	-0.31432	0	0	0	0	U	
LB1903	0	-0.31492	0	-0.31492 -0.31492	0	-0.31492	0	0	0	0	0	ő
LB1903 LB1904	_		_		_		_			_		
	o	-0.31492	ō	-0.31492	ō	-0.31492	Ö	ō	ō	0	ō	Ō
LB1904	0	-0.31492 -0.31492	0	-0.31492 -0.31492 -0.31492	0	-0.31492 -0.31492	0	0	0	0	0	0
LB1904 LB1905	0	-0.31492 -0.31492 -0.31492	0 0 0	-0.31492 -0.31492 -0.31492	0 0 0	-0.31492 -0.31492 -0.31492	0	0 0	0	0 0	0 0	0 0
LB1904 LB1905 LB1908 LB1909 LB1910	0 0 0 0.011682	-0.31492 -0.31492 -0.31492 3.149183	0 0 0 0.006788	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492	0 0 0 0.000812	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492	0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0
LB1904 LB1905 LB1908 LB1909	0 0 0 0.011682 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492	0 0 0 0.006788	-0.31492 -0.31492 -0.31492 3.149183 -0.31492	0 0 0 0.000812	-0.31492 -0.31492 -0.31492 3.149183 -0.31492	0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
LB1904 LB1905 LB1908 LB1909 LB1910	0 0 0 0.011682 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492	0 0 0 0.006788 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492	0 0 0 0.000812 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492	0 0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0 0 0
LB1904 LB1905 LB1908 LB1909 LB1910 LB1917	0 0 0 0.011862 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0 0 0 0.006788 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492	0 0 0 0.000812 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0 0 0
LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921	0 0 0 0.011862 0 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492 -0.31492	0 0 0 0.006788 0 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492	0 0 0 0.000812 0 0 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492	0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0
LB1904 LB1905 LB1908 LB1909 LB1910 LB1917 LB1921 LB1955	0 0 0 0.011682 0 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0 0 0 0.006788 0 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0 0 0 0.000812 0 0 0	-0.31492 -0.31492 -0.31492 3.149183 -0.31492 -0.31492 -0.31492 -0.31492 -0.31492	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0

Appendix 3. Summary of z-scores for each half-phi interval for PS47; when data from all participating laboratories included in the mean and standard deviation calculations.



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