NMBAQC

The National Marine Biological Analytical Quality Control Scheme

Particle Size Report - PS58

Particle Size Component 2015/16

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APEM

CONTENTS

APPENDICES

Appendix 1. Final Merged Data sheets as supplied by participating laboratories (arranged by Lab Code) and the benchmark replicates.

BENCHMARK DATA

Table 1. Summary data for the benchmark replicates distributed as PS58.

	Method	% Gravel	% Sand	% Silt/Clay	Sediment Description (Post analysis)
REPLICATE 1	NMBAQC	10.17	88.67	1.16	Gravelly sand
REPLICATE 2	NMBAQC	9.01	89.91	1.12	Gravelly sand
REPLICATE 3	NMBAQC	9.38	89.58	1.04	Gravelly sand
REPLICATE 4	NMBAQC	11.51	87.36	1.13	Gravelly sand
REPLICATE 5	NMBAQC	11.40	87.60	1.00	Gravelly sand
REP AVERAGE	NMBAQC	10.30	88.62	1.09	Gravelly sand

Table 2. Summary of equipment used and sieve data for the benchmark replicates distributed as PS58.

	Sieves used	Phi; sieve mesh		Total Weight (g)	Laser used
		Weight (g) < 0.00; >1 mm	Weight (g) > 0.00; <1 mm		
REPLICATE 1	☑	132.06	253.11	385.17	☑
REPLICATE 2	☑	128.30	244.51	372.81	☑
REPLICATE 3	☑	130.37	252.40	382.77	☑
REPLICATE 4	☑	132.54	247.31	379.85	☑
REPLICATE 5	☑	132.04	247.71	379.75	☑
BM AVERAGE	☑	131.06	249.01	380.07	☑

Table 3. Summary of final laser data for the benchmark replicates distributed as PS58.

	% Sand			
	Coarse 0 - 1 phi	Medium 1 - 2 phi	Fine 2 - 3 phi	Very Fine 3 - 4 phi
REPLICATE 1	28.49	53.37	14.95	1.43
REPLICATE 2	30.04	53.32	13.71	1.29
REPLICATE 3	28.39	54.22	14.52	1.30
REPLICATE 4	28.91	53.54	14.47	1.34
REPLICATE 5	29.51	53.67	14.06	1.24
BM AVERAGE	29.07	53.62	14.34	1.32

	% Silt				% Clay
	Coarse 4 - 5 phi	Medium 5 - 6 phi	Fine 6 - 7 phi	Very Fine 7 - 8 phi	8 - 13 phi
REPLICATE 1	0.37	0.30	0.25	0.21	0.63
REPLICATE 2	0.36	0.29	0.24	0.19	0.57
REPLICATE 3	0.33	0.26	0.22	0.19	0.58
REPLICATE 4	0.36	0.29	0.25	0.21	0.62
REPLICATE 5	0.31	0.25	0.22	0.18	0.57
BM AVERAGE	0.35	0.28	0.24	0.20	0.59

BENCHMARK DATA

Table 4. Summary of descriptive statistics and coefficient of variance for the benchmark replicates distributed as PS58.

	D10 (µm)		D50 (µm)		D90 (µm)		Mean (µm)	
	Result	d	Result	d	Result	d	Result	d
BM REP 1	228.57	5.85	541.57	6.30	2011.60	10.58	635.16	5.23
BM REP 2	238.67	4.25	554.75	6.88	1954.93	67.25	642.35	1.96
BM REP 3	233.22	1.20	537.67	10.20	1969.34	52.84	631.40	8.99
BM REP 4	233.38	1.04	550.97	3.10	2090.38	68.19	644.85	4.47
BM REP 5	238.27	3.85	554.40	6.53	2084.67	62.49	648.18	7.79
Grand Robust Mean	233.38		550.97		2011.60		642.35	
Mean	234.42		547.87		2022.18		640.39	
Robust Standard Deviation	3.85		6.53		62.49		5.23	
Standard Deviation	4.17		7.80		63.21		6.94	
Median Absolute Deviations	5.71		9.69		92.67		7.75	
Coefficient of Variance (COV)	1.78		1.42		3.13		1.08	

$$COV = 100 * (\frac{Std\ Dev}{Mean})$$

Good repoducibility when: - COV < 3% for D50
-COV < 5% for D10 and D90

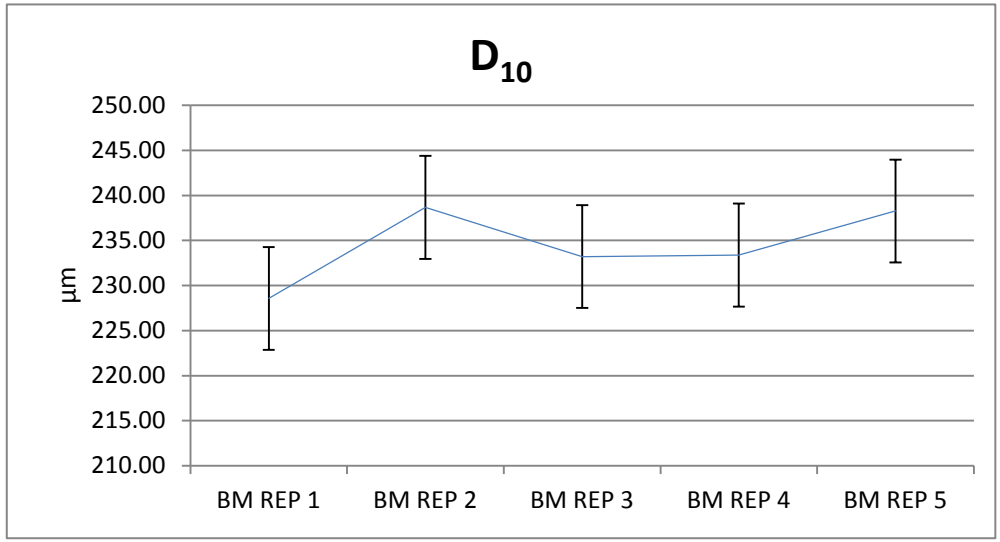
All limits double when the D50 < 10 µm.

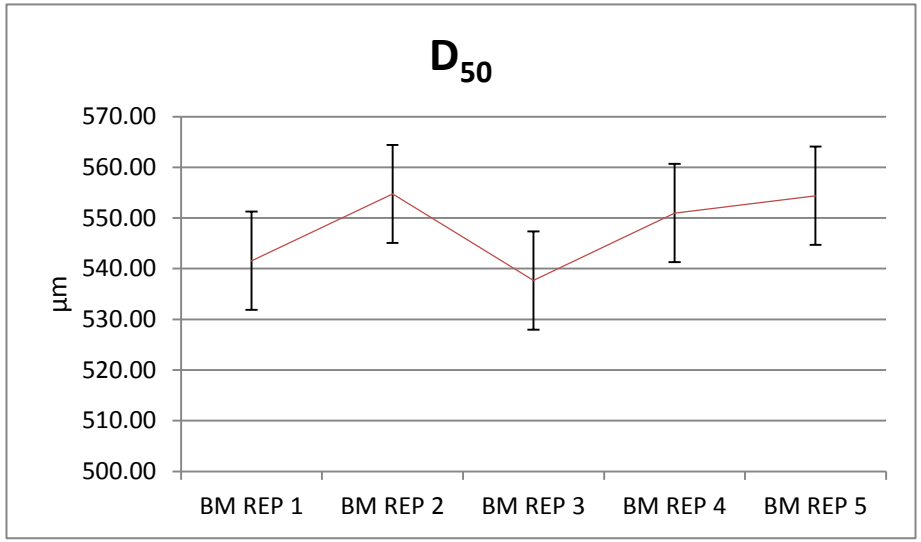
Benchmark replicates distributed as PS58 show a COV <3% for the D50 and <5% for the D10 and D90.

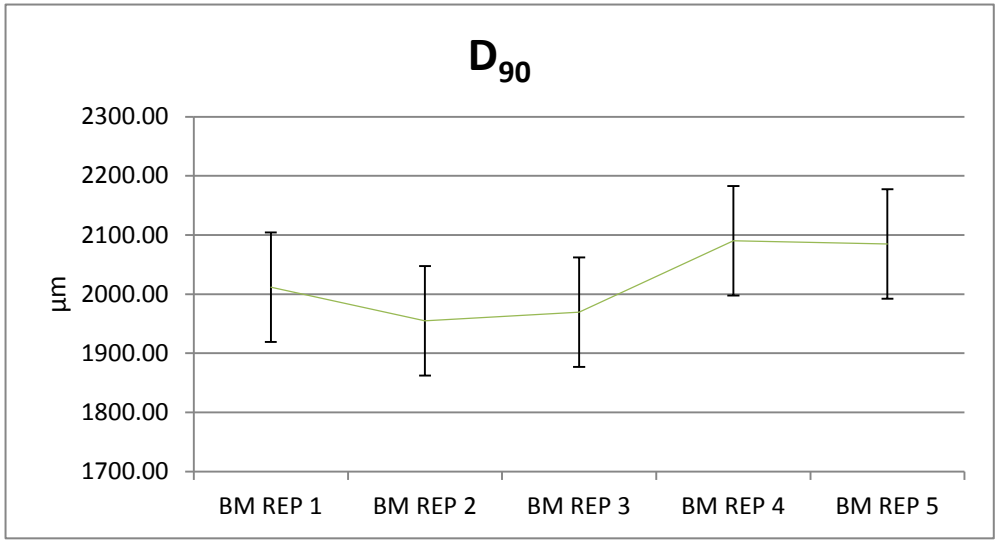
The replicates show good reproducibility.

BENCHMARK DATA

Figure 1. Scatterplot of Benchmark Data for PS58 with error bars showing ± 1 MAD_E.







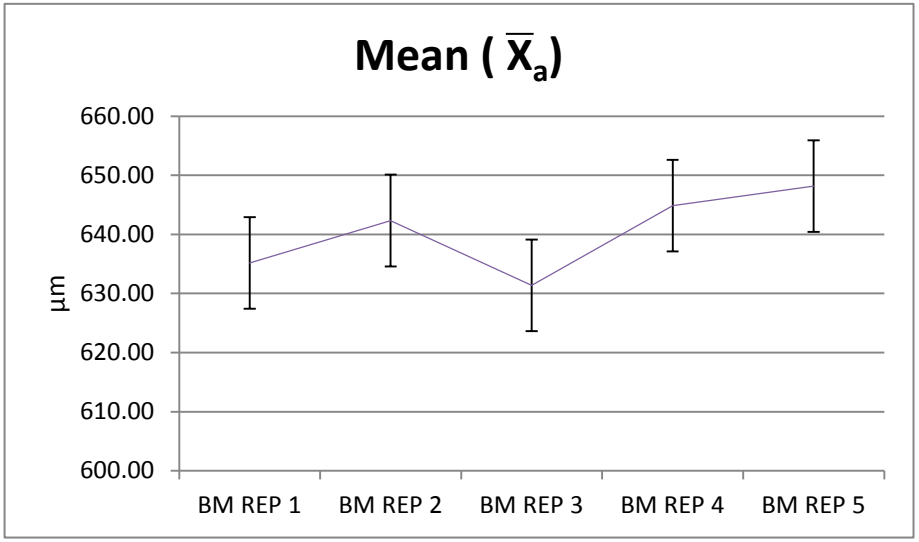
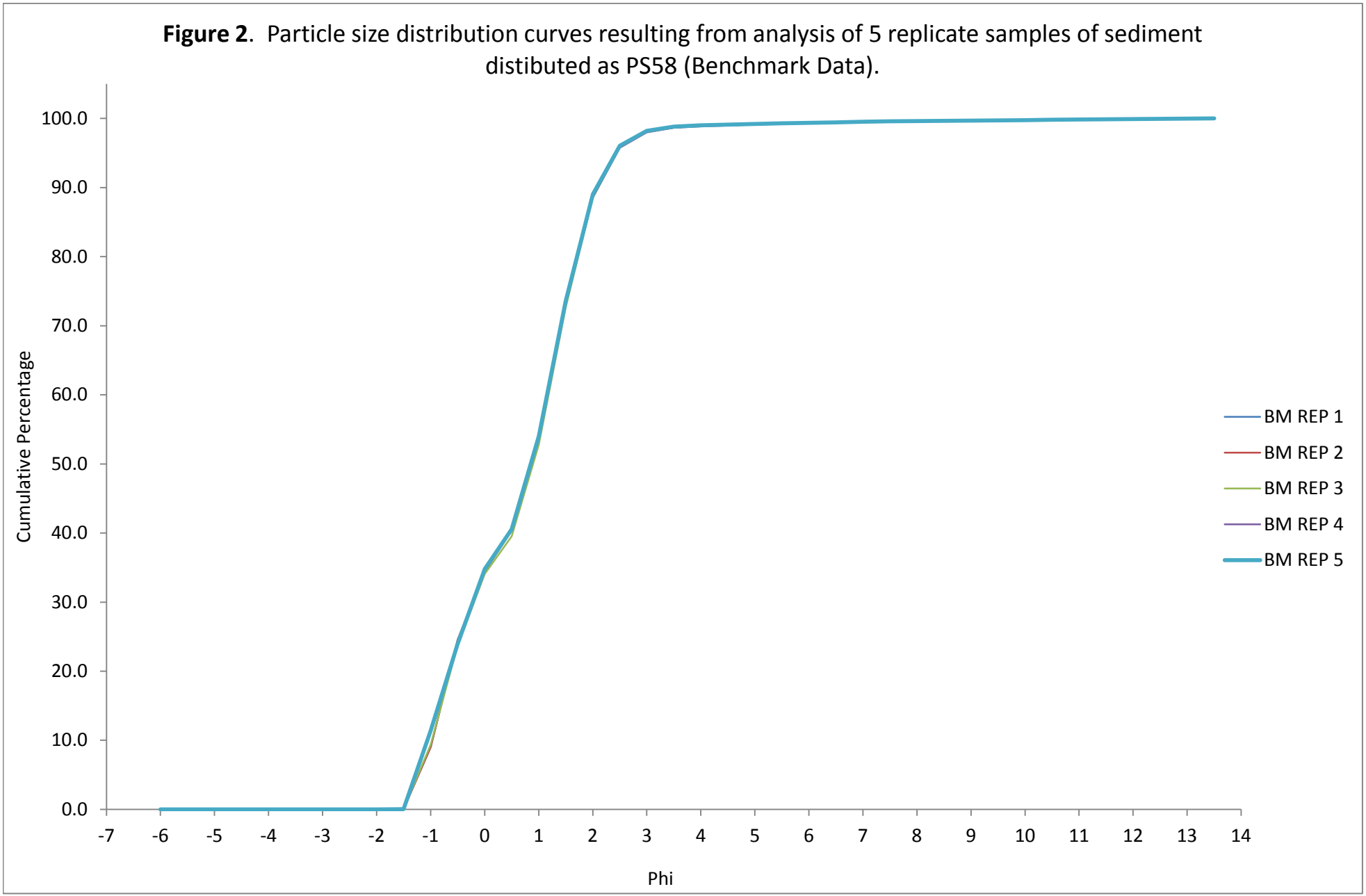


Figure 2. Particle size distribution curves resulting from analysis of 5 replicate samples of sediment distibuted as PS58 (Benchmark Data).



PARTICIPANT DATA

Table 5. Summary data and verification for the participants for sediment distributed as PS58.

Lab	% Gravel	% Sand	% Silt/Clay	Sediment Description (Post analysis)	Summary Data APEM verification							
					% Gravel		% Sand		% Silt/Clay		Sediment Description (Post analysis)	
Benchmark Average	10.30	88.62	1.09	Gravelly sand	-		-		-		-	
PSA_2201	8.3	87.8	3.9	Gravelly sand	☑	8.31	☑	87.82	☑	3.87	☑	Gravelly Sand
PSA_2202	10.3	88.7	1.0	Gravelly sand	☑	10.34	☑	88.66	☑	0.99	☑	Gravelly Sand
PSA_2203	10.17	88.67	1.16	Gravelly sand	☑	10.17	☑	88.67	☑	1.16	☑	Gravelly Sand
PSA_2205	-	-	-	-	-	8.72	-	89.76	-	1.52	-	Gravelly Sand
PSA_2208	-	-	-	-	-	9.99	-	89.38	-	0.63	-	Gravelly Sand
PSA_2209	8.26	91.26	0.48	Gravelly sand	☑	8.26	☑	91.26	☑	0.48	☑	Gravelly Sand
PSA_2210	8.3	91.6	0.2	Gravelly sand	☑	8.26	☑	91.57	☑	0.17	☑	Gravelly Sand
PSA_2211	8.30	90.28	1.42	Gravelly sand	☑	8.30	☑	90.28	☑	1.42	☑	Gravelly Sand
PSA_2212	8.2	90.2	1.6	Gravelly sand	☑	8.24	☑	90.20	☑	1.56	☑	Gravelly Sand
PSA_2213	7.60	90.41	1.99	Gravelly sand	☑	7.60	☑	90.41	☑	1.99	☑	Gravelly Sand
PSA_2214_A	8.26	90.53	1.21	Gravelly sand	☑	8.26	☑	90.53	☑	1.21	☑	Gravelly Sand
PSA_2214_B	8.50	90.27	1.24	Gravelly sand	☑	8.50	☑	90.27	☑	1.24	☑	Gravelly Sand
PSA_2215	9.0	90.8	0.2	Gravelly sand	☒	9.05	☒	90.95	☒	0.00	☑	Gravelly Sand
PSA_2216	8.3	81.3	10.4	Gravelly muddy sand	☑	8.30	☑	81.27	☑	10.42	☑	Gravelly Muddy Sand
PSA_2217	11.66	64.93	23.43	-	☑	11.66	☑	64.92	☑	23.42	-	Gravelly Muddy Sand
PSA_2218	8.2	91.7	0.1	Gravelly sand	☑	8.20	☑	91.68	☑	0.12	☑	Gravelly Sand

NB: Decimal places as supplied by participant.

- Data not provided by participant

PARTICIPANT DATA

Table 6. Summary of equipment used and sieve data for the participants for sediment distributed as PS58.

Participant	Method	Sieves used	Phi; sieve mesh		Total Weight (g)	Laser used
			Weight (g) < 0.00; >1 mm	Weight (g) > 0.00; <1 mm		
Benchmark Average	NMBAQC	☑	131.06	249.01	380.07	☑
PSA_2201	NMBAQC	☑	121.43	240.90	362.33	☑
PSA_2202	NMBAQC	☑	140.48	248.42	388.90	☑
PSA_2203	NMBAQC	☑	132.06	253.11	385.17	☑
PSA_2205	NMBAQC	☑	119.15	234.04	353.19	☑
PSA_2208	NMBAQC	☑	139.94	248.00	387.94	☑
PSA_2209	IN-HOUSE	☑	139.07	272.57	411.64	☑
PSA_2210	NMBAQC	☑	118.79	234.36	353.15	☑
PSA_2211	NMBAQC	☑	139.82	267.66	407.48	☑
PSA_2212	NMBAQC	☑	138.72	270.91	409.64	☑
PSA_2213	NMBAQC	☑	111.31	224.56	335.87	☑
PSA_2214_A	NMBAQC	☑	126.89	242.38	369.27	☑
PSA_2214_B	NMBAQC	☑	126.98	242.37	369.35	☑
PSA_2215	NMBAQC*	☑	141.36	266.83	408.19	☒
PSA_2216	NMBAQC	☑	140.63	309.15	449.78	☑
PSA_2217	NMBAQC	☑	139.53	266.10	405.63	☑
PSA_2218	NMBAQC*	☑	137.08	275.83	412.91	☒

NMBAQC* - State NMBAQC method but have not followed the NMBAQC methodology.
IN-HOUSE - State an in-house method used but no details given.

PARTICIPANT DATA

Table 7. Summary of final laser data for the participants for sediment distributed as PS58.

	% Sand				% Silt				% Clay	Total
Participant	Coarse 0 - 1 phi	Medium 1 - 2 phi	Fine 2 - 3 phi	Very Fine 3 - 4 phi	Coarse 4 - 5 phi	Medium 5 - 6 phi	Fine 6 - 7 phi	Very Fine 7 - 8 phi	8 - 13 phi	
Benchmark Average	29.07	53.62	14.34	1.32	0.35	0.28	0.24	0.20	0.59	100.00
PSA_2201	22.84	51.11	18.75	1.42	1.48	1.18	1.32	1.16	0.68	99.94
PSA_2202	29.11	51.76	16.99	0.32	0.81	0.13	0.35	0.26	0.00	99.73
PSA_2203	28.49	53.37	14.95	1.43	0.37	0.30	0.25	0.21	0.63	100.00
PSA_2205	27.42	50.54	17.01	1.31	0.90	0.42	0.64	0.30	0.00	98.53
PSA_2208	38.93	46.01	9.99	0.21	0.68	0.09	0.10	0.07	0.00	96.09
PSA_2209	30.47	50.59	17.82	0.40	0.69	0.04	0.00	0.00	0.00	100.00
PSA_2210	30.03	51.75	17.35	0.74	0.25	0.00	0.00	0.00	0.00	100.12
PSA_2211	28.95	52.21	15.77	0.68	1.19	0.36	0.40	0.15	0.00	99.71
PSA_2212	29.00	49.82	18.14	0.68	0.95	0.35	0.47	0.48	0.10	100.00
PSA_2213	27.31	51.72	15.86	2.13	0.69	0.47	0.47	0.38	0.97	100.00
PSA_2214_A	30.16	51.34	16.42	0.24	0.97	0.24	0.32	0.28	0.04	100.00
PSA_2214_B	29.17	51.74	16.92	0.29	1.05	0.20	0.33	0.29	0.01	100.00
PSA_2215	-	-	-	-	-	-	-	-	-	-
PSA_2216	42.53	35.98	0.78	4.28	5.20	4.65	2.93	1.29	0.88	98.51
PSA_2217	6.18	23.86	8.61	3.54	6.62	6.69	5.61	3.24	1.27	65.62
PSA_2218	-	-	-	-	-	-	-	-	-	-

- Laser not used.

Correctly re-proportioned laser data should equal 100%.

Figure 3. Particle size distribution curves from all participating laboratories and the Benchmark Average for sediment distributed as PS58.

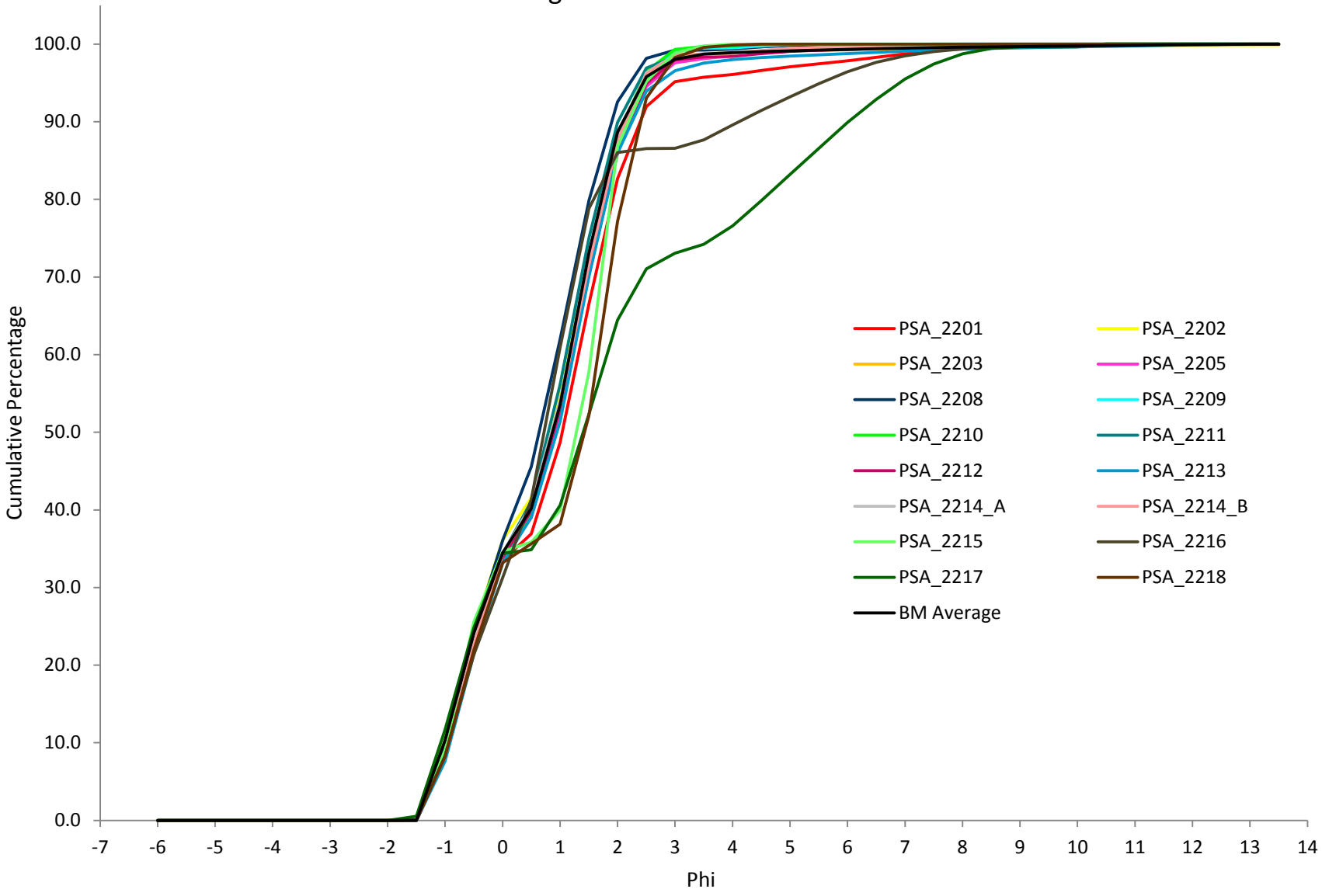
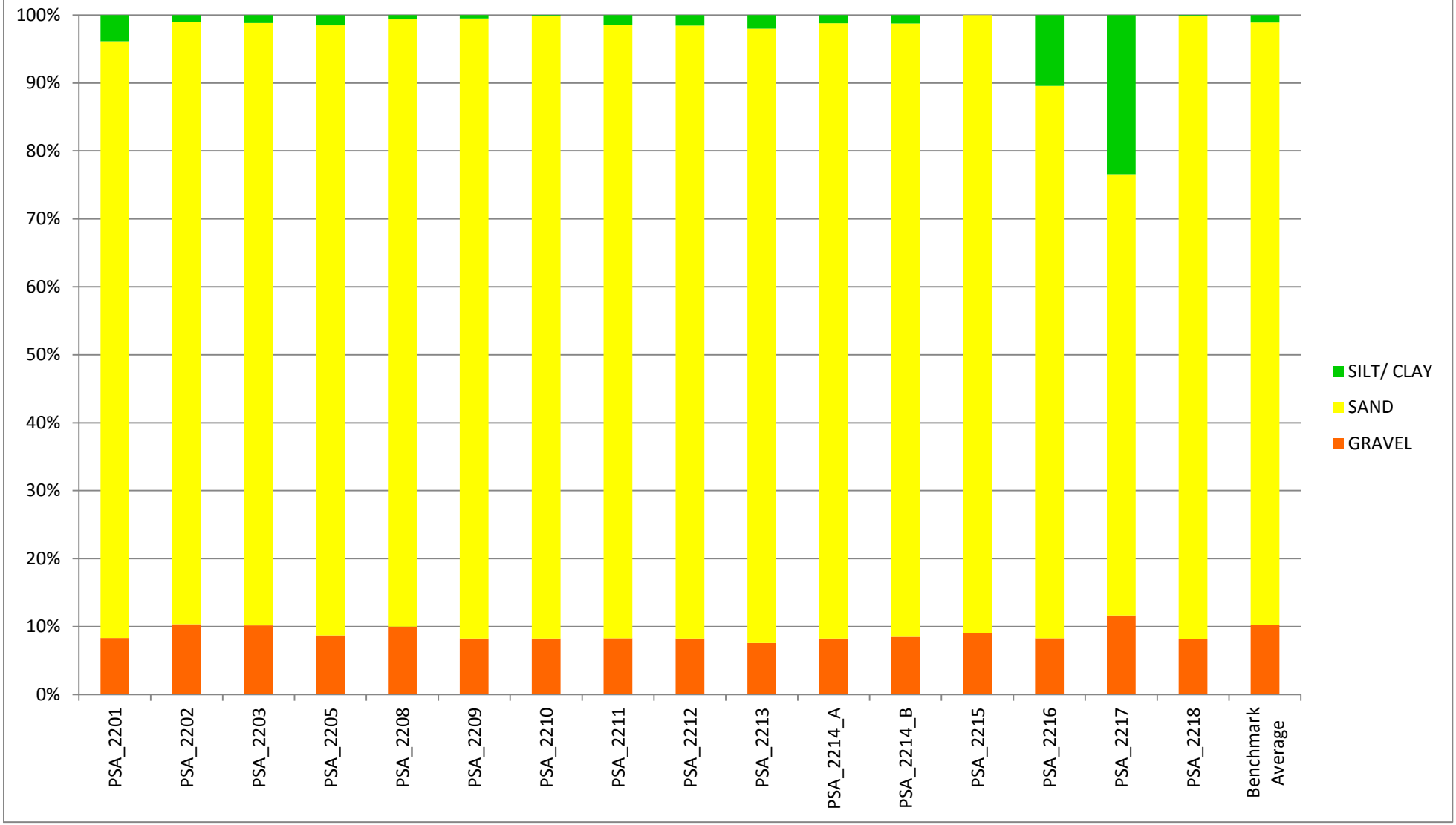


Figure 4. Bar chart showing the percentage gravel, sand, silt and clay recorded by each participating laboratory and the benchmark average for PS58.



Z-SCORES

Table 8. Calculations of Robust Mean and SDPA for PS58.

Laboratory	D_{10} (µm)		D_{50} (µm)		D_{90} (µm)		Mean (µm)	
	result	d	result	d	result	d	result	d
PSA_2201	190.39	32.08	487.72	56.43	1912.27	2.35	820.60	33.30
PSA_2202	229.59	7.12	567.48	23.33	2023.08	108.46	902.69	48.78
PSA_2203	228.57	6.10	541.57	2.58	2011.60	96.98	882.96	29.05
PSA_2205	213.37	9.10	529.42	14.73	1933.14	18.52	849.80	4.10
PSA_2208	268.21	45.74	643.86	99.71	1999.43	84.82	933.06	79.15
PSA_2209	225.76	3.29	552.82	8.67	1914.91	0.29	861.33	7.43
PSA_2210	229.41	6.94	546.50	2.35	1912.59	2.02	858.01	4.10
PSA_2211	248.74	26.27	576.23	32.08	1914.33	0.29	872.56	18.66
PSA_2212	214.06	8.41	541.80	2.35	1908.93	5.68	849.64	4.27
PSA_2213	209.84	12.63	520.04	24.11	1880.04	34.58	833.52	20.39
PSA_2214_A	228.98	6.51	556.28	12.13	1913.20	1.42	864.19	10.29
PSA_2214_B	225.97	3.50	548.30	4.15	1925.85	11.24	864.18	10.27
PSA_2215	219.18	3.29	411.34	132.81	1959.51	44.89	831.22	22.69
PSA_2216	57.80	164.68	606.52	62.37	1909.19	5.42	849.28	4.62
PSA_2217	15.41	207.06	378.87	165.27	2102.83	188.21	774.48	79.43
PSA_2218	188.94	33.53	373.02	171.13	1908.70	5.92	780.07	73.84
Origional Stats								
Robust Mean	222.47		544.15		1914.62		853.90	
Mean	199.64		523.86		1945.60		851.72	
Robust SD	8.75		23.72		8.58		19.52	
Std Dev	66.89		76.29		59.00		39.92	
MADe	12.98		35.17		12.72		28.95	
median + (5*MADe)	287.37		720.01		1978.23		998.67	
median - (5*MADe)	157.57		368.29		1851.00		709.14	
Outliers removed								
Robust Mean	225.87		544.15		1912.90		853.90	
Mean	222.93		523.86		1916.06		851.72	
Robust SD	6.69		19.03		3.70		14.47	
Std Dev	20.49		76.29		18.50		39.92	
MADe	9.92		28.22		5.49		21.47	

	Data falls outside the range of: Median ± 5xMADe. Therefore removed from Robust mean and MADe calcualations.
	Data not used for any Median/Mean or Std Dev calculations due to reporting errors.

Z-SCORES

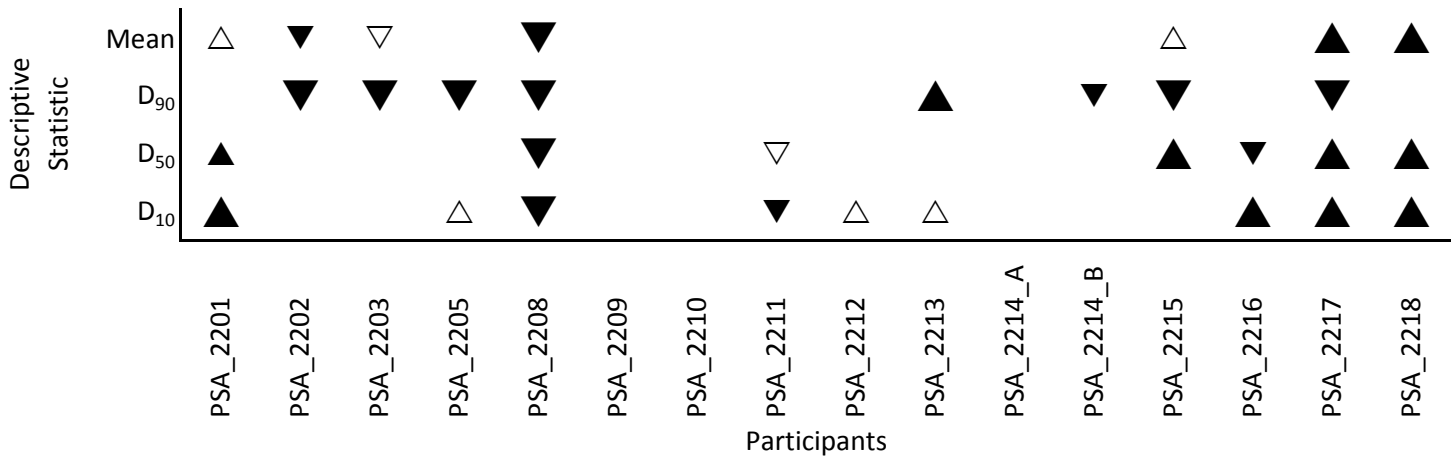
Table 9. z-score results for each participating laboratory for PS58 when using robust statistics with outliers removed.

	D_{10} (µm)		D_{50} (µm)		D_{90} (µm)		Mean(µm)	
Laboratory	Result	z	result	z	result	z	result	z
PSA_2201	190.39	-3.58	487.72	-2.00	1912.27	-0.11	820.60	-1.55
PSA_2202	229.59	0.38	567.48	0.83	2023.08	20.06	902.69	2.27
PSA_2203	228.57	0.27	541.57	-0.09	2011.60	17.97	882.96	1.35
PSA_2205	213.37	-1.26	529.42	-0.52	1933.14	3.69	849.80	-0.19
PSA_2208	268.21	4.27	643.86	3.53	1999.43	15.76	933.06	3.69
PSA_2209	225.76	-0.01	552.82	0.31	1914.91	0.37	861.33	0.35
PSA_2210	229.41	0.36	546.50	0.08	1912.59	-0.06	858.01	0.19
PSA_2211	248.74	2.31	576.23	1.14	1914.33	0.26	872.56	0.87
PSA_2212	214.06	-1.19	541.80	-0.08	1908.93	-0.72	849.64	-0.20
PSA_2213	209.84	-1.62	520.04	-0.85	1880.04	-5.98	833.52	-0.95
PSA_2214_A	228.98	0.31	556.28	0.43	1913.20	0.06	864.19	0.48
PSA_2214_B	225.97	0.01	548.30	0.15	1925.85	2.36	864.18	0.48
PSA_2215	219.18	-0.67	411.34	-4.71	1959.51	8.49	831.22	-1.06
PSA_2216	57.80	-16.95	606.52	2.21	1909.19	-0.67	849.28	-0.22
PSA_2217	15.41	-21.22	378.87	-5.86	2102.83	34.59	774.48	-3.70
PSA_2218	188.94	-3.72	373.02	-6.06	1908.70	-0.77	780.07	-3.44

Robust Mean	225.87	544.15	1912.90	853.90
MADe	9.92	28.22	5.49	21.47

Z-SCORES

Figure 5. Summary plots of z-scores achieved by participating laboratories for PS58 when using robust statistics.



▼	z-score ≥ 3.00	Unsatisfactory result
▼	2.00 ≤ z-score < 3.00	Questionable result
▽	1.00 ≤ z-score < 2.00	Satisfactory result
	-1.00 < z-score < 1.00	
△	-2.00 < z-score ≤ -1.00	
▲	-3.00 < z-score ≤ -2.00	Questionable result
▲	z-score ≤ -3.00	Unsatisfactory result

PERFORMANCE

Table 10. Summary of Results for PS58.

	D_{10}	D_{50}	D_{90}	Mean (µm)	Satisfactory	Questionable	Unsatisfactory	Score	%	Pass/Fail	
PSA_2201	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	3	0	1	15	75	PASS - GOOD	PSA_2201
PSA_2202	Satisfactory	Satisfactory	Unsatisfactory	Questionable	2	1	1	12	60	PASS - ACCEPTABLE	PSA_2202
PSA_2203	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	3	0	1	15	75	PASS - GOOD	PSA_2203
PSA_2205	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	3	0	1	15	75	PASS - GOOD	PSA_2205
PSA_2208	Unsatisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory	0	0	4	0	0	FAIL - BAD	PSA_2208
PSA_2209	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2209
PSA_2210	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2210
PSA_2211	Questionable	Satisfactory	Satisfactory	Satisfactory	3	1	0	17	85	PASS - GOOD	PSA_2211
PSA_2212	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2212
PSA_2213	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	3	0	1	15	75	PASS - GOOD	PSA_2213
PSA_2214_A	Satisfactory	Satisfactory	Satisfactory	Satisfactory	4	0	0	20	100	PASS - EXCELLENT	PSA_2214_A
PSA_2214_B	Satisfactory	Satisfactory	Questionable	Satisfactory	3	1	0	17	85	PASS - GOOD	PSA_2214_B
PSA_2215	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	2	0	2	10	50	FAIL - POOR	PSA_2215
PSA_2216	Unsatisfactory	Questionable	Satisfactory	Satisfactory	2	1	1	12	60	PASS - ACCEPTABLE	PSA_2216
PSA_2217	Unsatisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory	0	0	4	0	0	FAIL - BAD	PSA_2217
PSA_2218	Unsatisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	1	0	3	5	25	FAIL - BAD	PSA_2218

Score	
5	Satisfactory
2	Questionable
0	Unsatisactory

Score	%	Pass/ Fail	Level
20	86 - 100	PASS	EXCELLENT
15 - 19	71 - 85	PASS	GOOD
12 - 14	60 - 70	PASS	ACCEPTABLE
6 - 11	26 - 59	FAIL	POOR
0-5	0 - 15	FAIL	BAD

Appendices

NMBAQCS - PS Exercise Data Workbook
(Page 2 - Final Merged Data Submission)

Return to APEM Ltd.

Exercise Code:	**PS58**
LabCode:	**PSA_2201**
Sample Code:	**PS582201**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**8.3073**
-1.00 to -0.50; 1.4 mm	**13.4297**
-0.50 to 0.00; 1 mm	**11.7766**
0.00 to 0.50; (707 µm)	3.4019
0.50 to 1.00; (500 µm)	11.7858
1.00 to 1.50; (353.6 µm)	17.8361
1.50 to 2.00; (250 µm)	16.1429
2.00 to 2.50; (176.8 µm)	9.2675
2.50 to 3.00; (125 µm)	3.2017
3.00 to 3.50; (88.39 µm)	0.5895
3.50 to 4.00; (62.5 µm)	0.3561
4.00 to 4.50; (44.19 µm)	0.5127
4.50 to 5.00; (31.25 µm)	0.4698
5.00 to 5.50; (22.097 µm)	0.3878
5.50 to 6.00; (15.625 µm)	0.3974
6.00 to 6.50; (11.049 µm)	0.4366
6.50 to 7.00; (7.813 µm)	0.4403
7.00 to 7.50; (5.524 µm)	0.4107
7.50 to 8.00; (3.906 µm)	0.3583
8.00 to 8.50; (2.762 µm)	0.2682
8.50 to 9.00; (1.953 µm)	0.1566
9.00 to 9.50; (1.381 µm)	0.0295
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2202**
Sample Code:	**PS582202**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.2391**
-1.50 to -1.00; 2 mm	**10.0874**
-1.00 to -0.50; 1.4 mm	**14.2916**
-0.50 to 0.00; 1 mm	**11.5042**
0.00 to 0.50; (707 µm)	5.4446
0.50 to 1.00; (500 µm)	13.1520
1.00 to 1.50; (353.6 µm)	17.7147
1.50 to 2.00; (250 µm)	15.3487
2.00 to 2.50; (176.8 µm)	8.3833
2.50 to 3.00; (125 µm)	2.4670
3.00 to 3.50; (88.39 µm)	0.1402
3.50 to 4.00; (62.5 µm)	0.0636
4.00 to 4.50; (44.19 µm)	0.2959
4.50 to 5.00; (31.25 µm)	0.2234
5.00 to 5.50; (22.097 µm)	0.0580
5.50 to 6.00; (15.625 µm)	0.0256
6.00 to 6.50; (11.049 µm)	0.0989
6.50 to 7.00; (7.813 µm)	0.1223
7.00 to 7.50; (5.524 µm)	0.1089
7.50 to 8.00; (3.906 µm)	0.0565
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2203**
Sample Code:	**PS582203**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0104**
-1.50 to -1.00; 2 mm	**10.1643**
-1.00 to -0.50; 1.4 mm	**14.2924**
-0.50 to 0.00; 1 mm	**9.8190**
0.00 to 0.50; (707 µm)	5.6824
0.50 to 1.00; (500 µm)	13.0367
1.00 to 1.50; (353.6 µm)	19.3955
1.50 to 2.00; (250 µm)	15.6772
2.00 to 2.50; (176.8 µm)	7.4309
2.50 to 3.00; (125 µm)	2.3958
3.00 to 3.50; (88.39 µm)	0.7058
3.50 to 4.00; (62.5 µm)	0.2340
4.00 to 4.50; (44.19 µm)	0.1299
4.50 to 5.00; (31.25 µm)	0.1143
5.00 to 5.50; (22.097 µm)	0.0994
5.50 to 6.00; (15.625 µm)	0.0955
6.00 to 6.50; (11.049 µm)	0.0867
6.50 to 7.00; (7.813 µm)	0.0803
7.00 to 7.50; (5.524 µm)	0.0746
7.50 to 8.00; (3.906 µm)	0.0641
8.00 to 8.50; (2.762 µm)	0.0486
8.50 to 9.00; (1.953 µm)	0.0378
9.00 to 9.50; (1.381 µm)	0.0365
9.50 to 10.00; (0.977 µm)	0.0407
10.00 to 10.50; (0.691 µm)	0.0442
10.50 to 11.00; (0.488 µm)	0.0451
11.00 to 11.50; (0.345 µm)	0.0431
11.50 to 12.00; (0.244 µm)	0.0389
12.00 to 12.50; (0.173 µm)	0.0323
12.50 to 13.00; (0.122 µm)	0.0259
13.00 to 13.50; (0.086 µm)	0.0179

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Exercise Code:	**PS58**
LabCode:	**PSA_2205**
Sample Code:	**PS582205**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**30.8100**
-1.00 to -0.50; 1.4 mm	**47.3000**
-0.50 to 0.00; 1 mm	**41.0400**
0.00 to 0.50; (707 µm)	18.5480
0.50 to 1.00; (500 µm)	46.5850
1.00 to 1.50; (353.6 µm)	63.8379
1.50 to 2.00; (250 µm)	56.2129
2.00 to 2.50; (176.8 µm)	29.6045
2.50 to 3.00; (125 µm)	10.7944
3.00 to 3.50; (88.39 µm)	1.8876
3.50 to 4.00; (62.5 µm)	1.2184
4.00 to 4.50; (44.19 µm)	1.2326
4.50 to 5.00; (31.25 µm)	0.9078
5.00 to 5.50; (22.097 µm)	0.4666
5.50 to 6.00; (15.625 µm)	0.5205
6.00 to 6.50; (11.049 µm)	0.7289
6.50 to 7.00; (7.813 µm)	0.7834
7.00 to 7.50; (5.524 µm)	0.6002
7.50 to 8.00; (3.906 µm)	0.1112
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2208**
Sample Code:	**PS582208**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0284**
-1.50 to -1.00; 2 mm	**9.9603**
-1.00 to -0.50; 1.4 mm	**14.2806**
-0.50 to 0.00; 1 mm	**11.8034**
0.00 to 0.50; (707 µm)	9.4988
0.50 to 1.00; (500 µm)	16.3994
1.00 to 1.50; (353.6 µm)	17.8781
1.50 to 2.00; (250 µm)	12.7335
2.00 to 2.50; (176.8 µm)	5.5752
2.50 to 3.00; (125 µm)	1.0706
3.00 to 3.50; (88.39 µm)	0.0095
3.50 to 4.00; (62.5 µm)	0.1313
4.00 to 4.50; (44.19 µm)	0.2782
4.50 to 5.00; (31.25 µm)	0.1749
5.00 to 5.50; (22.097 µm)	0.0368
5.50 to 6.00; (15.625 µm)	0.0251
6.00 to 6.50; (11.049 µm)	0.0332
6.50 to 7.00; (7.813 µm)	0.0347
7.00 to 7.50; (5.524 µm)	0.0298
7.50 to 8.00; (3.906 µm)	0.0183
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2209**
Sample Code:	**PS582209**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0559**
-1.50 to -1.00; 2 mm	**8.2038**
-1.00 to -0.50; 1.4 mm	**14.2770**
-0.50 to 0.00; 1 mm	**11.2477**
0.00 to 0.50; (707 µm)	6.5206
0.50 to 1.00; (500 µm)	13.6526
1.00 to 1.50; (353.6 µm)	17.6131
1.50 to 2.00; (250 µm)	15.8839
2.00 to 2.50; (176.8 µm)	8.6473
2.50 to 3.00; (125 µm)	3.1523
3.00 to 3.50; (88.39 µm)	0.2361
3.50 to 4.00; (62.5 µm)	0.0259
4.00 to 4.50; (44.19 µm)	0.2528
4.50 to 5.00; (31.25 µm)	0.2037
5.00 to 5.50; (22.097 µm)	0.0273
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2210**
Sample Code:	**PS582210**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0500**
-1.50 to -1.00; 2 mm	**8.2100**
-1.00 to -0.50; 1.4 mm	**13.8800**
-0.50 to 0.00; 1 mm	**11.5000**
0.00 to 0.50; (707 µm)	6.0900
0.50 to 1.00; (500 µm)	13.8100
1.00 to 1.50; (353.6 µm)	18.4400
1.50 to 2.00; (250 µm)	15.8600
2.00 to 2.50; (176.8 µm)	8.6700
2.50 to 3.00; (125 µm)	2.8200
3.00 to 3.50; (88.39 µm)	0.3900
3.50 to 4.00; (62.5 µm)	0.1000
4.00 to 4.50; (44.19 µm)	0.1300
4.50 to 5.00; (31.25 µm)	0.0400
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

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Exercise Code:	**PS58**
LabCode:	**PSA_22011**
Sample Code:	**PS582011**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**33.8300**
-1.00 to -0.50; 1.4 mm	**56.3600**
-0.50 to 0.00; 1 mm	**49.6300**
0.00 to 0.50; (707 µm)	27.6862
0.50 to 1.00; (500 µm)	61.3724
1.00 to 1.50; (353.6 µm)	76.8164
1.50 to 2.00; (250 µm)	60.6190
2.00 to 2.50; (176.8 µm)	28.6279
2.50 to 3.00; (125 µm)	5.8386
3.00 to 3.50; (88.39 µm)	0.0000
3.50 to 4.00; (62.5 µm)	0.9148
4.00 to 4.50; (44.19 µm)	1.8565
4.50 to 5.00; (31.25 µm)	1.1839
5.00 to 5.50; (22.097 µm)	0.5112
5.50 to 6.00; (15.625 µm)	0.5112
6.00 to 6.50; (11.049 µm)	0.6457
6.50 to 7.00; (7.813 µm)	0.6188
7.00 to 7.50; (5.524 µm)	0.4574
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2212**
Sample Code:	**PS582212**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0310**
-1.50 to -1.00; 2 mm	**8.2091**
-1.00 to -0.50; 1.4 mm	**13.4698**
-0.50 to 0.00; 1 mm	**12.1552**
0.00 to 0.50; (707 µm)	6.0459
0.50 to 1.00; (500 µm)	13.1327
1.00 to 1.50; (353.6 µm)	17.4925
1.50 to 2.00; (250 µm)	15.4561
2.00 to 2.50; (176.8 µm)	8.9470
2.50 to 3.00; (125 µm)	3.0507
3.00 to 3.50; (88.39 µm)	0.3853
3.50 to 4.00; (62.5 µm)	0.0667
4.00 to 4.50; (44.19 µm)	0.3232
4.50 to 5.00; (31.25 µm)	0.3035
5.00 to 5.50; (22.097 µm)	0.1571
5.50 to 6.00; (15.625 µm)	0.0767
6.00 to 6.50; (11.049 µm)	0.1356
6.50 to 7.00; (7.813 µm)	0.1743
7.00 to 7.50; (5.524 µm)	0.1755
7.50 to 8.00; (3.906 µm)	0.1437
8.00 to 8.50; (2.762 µm)	0.0684
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2213**
Sample Code:	**PS582213**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.00**
-4.00 to -3.50; 11.2 mm	**0.00**
-3.50 to -3.00; 8 mm	**0.00**
-3.00 to -2.50; 5.6 mm	**0.00**
-2.50 to -2.00; 4 mm	**0.00**
-2.00 to -1.50; 2.8 mm	**0.00**
-1.50 to -1.00; 2 mm	**7.60**
-1.00 to -0.50; 1.4 mm	**13.83**
-0.50 to 0.00; 1 mm	**11.71**
0.00 to 0.50; (707 µm)	5.92
0.50 to 1.00; (500 µm)	12.34
1.00 to 1.50; (353.6 µm)	18.69
1.50 to 2.00; (250 µm)	15.89
2.00 to 2.50; (176.8 µm)	7.95
2.50 to 3.00; (125 µm)	2.65
3.00 to 3.50; (88.39 µm)	0.97
3.50 to 4.00; (62.5 µm)	0.46
4.00 to 4.50; (44.19 µm)	0.27
4.50 to 5.00; (31.25 µm)	0.19
5.00 to 5.50; (22.097 µm)	0.16
5.50 to 6.00; (15.625 µm)	0.16
6.00 to 6.50; (11.049 µm)	0.16
6.50 to 7.00; (7.813 µm)	0.15
7.00 to 7.50; (5.524 µm)	0.14
7.50 to 8.00; (3.906 µm)	0.12
8.00 to 8.50; (2.762 µm)	0.09
8.50 to 9.00; (1.953 µm)	0.08
9.00 to 9.50; (1.381 µm)	0.07
9.50 to 10.00; (0.977 µm)	0.06
10.00 to 10.50; (0.691 µm)	0.06
10.50 to 11.00; (0.488 µm)	0.06
11.00 to 11.50; (0.345 µm)	0.06
11.50 to 12.00; (0.244 µm)	0.05
12.00 to 12.50; (0.173 µm)	0.04
12.50 to 13.00; (0.122 µm)	0.03
13.00 to 13.50; (0.086 µm)	0.04

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Exercise Code:	**PS58**
LabCode:	**PSA_2214_A**
Sample Code:	**PS5814_A**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.1175**
-1.50 to -1.00; 2 mm	**8.1398**
-1.00 to -0.50; 1.4 mm	**14.0087**
-0.50 to 0.00; 1 mm	**12.0958**
0.00 to 0.50; (707 µm)	6.2992
0.50 to 1.00; (500 µm)	13.4940
1.00 to 1.50; (353.6 µm)	18.0580
1.50 to 2.00; (250 µm)	15.6437
2.00 to 2.50; (176.8 µm)	8.4560
2.50 to 3.00; (125 µm)	2.3220
3.00 to 3.50; (88.39 µm)	0.0866
3.50 to 4.00; (62.5 µm)	0.0678
4.00 to 4.50; (44.19 µm)	0.3529
4.50 to 5.00; (31.25 µm)	0.2863
5.00 to 5.50; (22.097 µm)	0.0998
5.50 to 6.00; (15.625 µm)	0.0551
6.00 to 6.50; (11.049 µm)	0.0980
6.50 to 7.00; (7.813 µm)	0.1126
7.00 to 7.50; (5.524 µm)	0.1016
7.50 to 8.00; (3.906 µm)	0.0791
8.00 to 8.50; (2.762 µm)	0.0254
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2214_B**
Sample Code:	**PS5814_B**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0682**
-1.50 to -1.00; 2 mm	**8.4311**
-1.00 to -0.50; 1.4 mm	**14.1688**
-0.50 to 0.00; 1 mm	**11.7106**
0.00 to 0.50; (707 µm)	5.9117
0.50 to 1.00; (500 µm)	13.2321
1.00 to 1.50; (353.6 µm)	18.0856
1.50 to 2.00; (250 µm)	15.8639
2.00 to 2.50; (176.8 µm)	8.6667
2.50 to 3.00; (125 µm)	2.4388
3.00 to 3.50; (88.39 µm)	0.1053
3.50 to 4.00; (62.5 µm)	0.0823
4.00 to 4.50; (44.19 µm)	0.3852
4.50 to 5.00; (31.25 µm)	0.3042
5.00 to 5.50; (22.097 µm)	0.1111
5.50 to 6.00; (15.625 µm)	0.0214
6.00 to 6.50; (11.049 µm)	0.1007
6.50 to 7.00; (7.813 µm)	0.1188
7.00 to 7.50; (5.524 µm)	0.1072
7.50 to 8.00; (3.906 µm)	0.0812
8.00 to 8.50; (2.762 µm)	0.0052
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2215**
Sample Code:	**PS582215**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0682**
-1.50 to -1.00; 2 mm	**8.4311**
-1.00 to -0.50; 1.4 mm	**14.1688**
-0.50 to 0.00; 1 mm	**11.7106**
0.00 to 0.50; (707 µm)	5.9117
0.50 to 1.00; (500 µm)	13.2321
1.00 to 1.50; (353.6 µm)	18.0856
1.50 to 2.00; (250 µm)	15.8639
2.00 to 2.50; (176.8 µm)	8.6667
2.50 to 3.00; (125 µm)	2.4388
3.00 to 3.50; (88.39 µm)	0.1053
3.50 to 4.00; (62.5 µm)	0.0823
4.00 to 4.50; (44.19 µm)	0.3852
4.50 to 5.00; (31.25 µm)	0.3042
5.00 to 5.50; (22.097 µm)	0.1111
5.50 to 6.00; (15.625 µm)	0.0214
6.00 to 6.50; (11.049 µm)	0.1007
6.50 to 7.00; (7.813 µm)	0.1188
7.00 to 7.50; (5.524 µm)	0.1072
7.50 to 8.00; (3.906 µm)	0.0812
8.00 to 8.50; (2.762 µm)	0.0052
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2216**
Sample Code:	**PS582216**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.2300**
-1.50 to -1.00; 2 mm	**37.1100**
-1.00 to -0.50; 1.4 mm	**58.6300**
-0.50 to 0.00; 1 mm	**44.6600**
0.00 to 0.50; (707 µm)	45.1923
0.50 to 1.00; (500 µm)	88.2910
1.00 to 1.50; (353.6 µm)	80.4434
1.50 to 2.00; (250 µm)	32.4541
2.00 to 2.50; (176.8 µm)	2.3123
2.50 to 3.00; (125 µm)	0.1370
3.00 to 3.50; (88.39 µm)	4.7886
3.50 to 4.00; (62.5 µm)	8.6429
4.00 to 4.50; (44.19 µm)	8.4627
4.50 to 5.00; (31.25 µm)	7.8499
5.00 to 5.50; (22.097 µm)	7.6474
5.50 to 6.00; (15.625 µm)	6.9287
6.00 to 6.50; (11.049 µm)	5.4286
6.50 to 7.00; (7.813 µm)	3.7612
7.00 to 7.50; (5.524 µm)	2.4607
7.50 to 8.00; (3.906 µm)	1.5928
8.00 to 8.50; (2.762 µm)	1.0659
8.50 to 9.00; (1.953 µm)	0.7681
9.00 to 9.50; (1.381 µm)	0.6182
9.50 to 10.00; (0.977 µm)	0.3043
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

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Exercise Code:	**PS58**
LabCode:	**PSA_2217**
Sample Code:	**PS582217**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.5300**
-1.50 to -1.00; 2 mm	**11.1300**
-1.00 to -0.50; 1.4 mm	**13.1600**
-0.50 to 0.00; 1 mm	**9.5800**
0.00 to 0.50; (707 µm)	0.4767
0.50 to 1.00; (500 µm)	5.7067
1.00 to 1.50; (353.6 µm)	11.7700
1.50 to 2.00; (250 µm)	12.0889
2.00 to 2.50; (176.8 µm)	6.6156
2.50 to 3.00; (125 µm)	1.9933
3.00 to 3.50; (88.39 µm)	1.1611
3.50 to 4.00; (62.5 µm)	2.3778
4.00 to 4.50; (44.19 µm)	3.2322
4.50 to 5.00; (31.25 µm)	3.3856
5.00 to 5.50; (22.097 µm)	3.3756
5.50 to 6.00; (15.625 µm)	3.3111
6.00 to 6.50; (11.049 µm)	3.0056
6.50 to 7.00; (7.813 µm)	2.6056
7.00 to 7.50; (5.524 µm)	1.9344
7.50 to 8.00; (3.906 µm)	1.3067
8.00 to 8.50; (2.762 µm)	0.7156
8.50 to 9.00; (1.953 µm)	0.1822
9.00 to 9.50; (1.381 µm)	0.0000
9.50 to 10.00; (0.977 µm)	0.0100
10.00 to 10.50; (0.691 µm)	
10.50 to 11.00; (0.488 µm)	
11.00 to 11.50; (0.345 µm)	
11.50 to 12.00; (0.244 µm)	0.3611
12.00 to 12.50; (0.173 µm)	
12.50 to 13.00; (0.122 µm)	
13.00 to 13.50; (0.086 µm)	

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Exercise Code:	**PS58**
LabCode:	**PSA_2218**
Sample Code:	**PS582218**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0000**
-1.50 to -1.00; 2 mm	**33.8700**
-1.00 to -0.50; 1.4 mm	**56.6480**
-0.50 to 0.00; 1 mm	**46.5610**
0.00 to 0.50; (707 µm)	9.9890
0.50 to 1.00; (500 µm)	10.4870
1.00 to 1.50; (353.6 µm)	57.8240
1.50 to 2.00; (250 µm)	103.2000
2.00 to 2.50; (176.8 µm)	65.6220
2.50 to 3.00; (125 µm)	21.5890
3.00 to 3.50; (88.39 µm)	5.4300
3.50 to 4.00; (62.5 µm)	1.2010
4.00 to 4.50; (44.19 µm)	0.4920
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

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Exercise Code:	**PS58**
LabCode:	**PSA_BM REP 1**
Sample Code:	**PS58BM REP 1**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0104**
-1.50 to -1.00; 2 mm	**10.1643**
-1.00 to -0.50; 1.4 mm	**14.2924**
-0.50 to 0.00; 1 mm	**9.8190**
0.00 to 0.50; (707 µm)	5.6824
0.50 to 1.00; (500 µm)	13.0367
1.00 to 1.50; (353.6 µm)	19.3955
1.50 to 2.00; (250 µm)	15.6772
2.00 to 2.50; (176.8 µm)	7.4309
2.50 to 3.00; (125 µm)	2.3958
3.00 to 3.50; (88.39 µm)	0.7058
3.50 to 4.00; (62.5 µm)	0.2340
4.00 to 4.50; (44.19 µm)	0.1299
4.50 to 5.00; (31.25 µm)	0.1143
5.00 to 5.50; (22.097 µm)	0.0994
5.50 to 6.00; (15.625 µm)	0.0955
6.00 to 6.50; (11.049 µm)	0.0867
6.50 to 7.00; (7.813 µm)	0.0803
7.00 to 7.50; (5.524 µm)	0.0746
7.50 to 8.00; (3.906 µm)	0.0641
8.00 to 8.50; (2.762 µm)	0.0486
8.50 to 9.00; (1.953 µm)	0.0378
9.00 to 9.50; (1.381 µm)	0.0365
9.50 to 10.00; (0.977 µm)	0.0407
10.00 to 10.50; (0.691 µm)	0.0442
10.50 to 11.00; (0.488 µm)	0.0451
11.00 to 11.50; (0.345 µm)	0.0431
11.50 to 12.00; (0.244 µm)	0.0389
12.00 to 12.50; (0.173 µm)	0.0323
12.50 to 13.00; (0.122 µm)	0.0259
13.00 to 13.50; (0.086 µm)	0.0179

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Exercise Code:	**PS58**
LabCode:	**PSA_BM REP 2**
Sample Code:	**PS58BM REP 2**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0215**
-1.50 to -1.00; 2 mm	**8.9885**
-1.00 to -0.50; 1.4 mm	**15.4931**
-0.50 to 0.00; 1 mm	**9.9112**
0.00 to 0.50; (707 µm)	5.9828
0.50 to 1.00; (500 µm)	13.7174
1.00 to 1.50; (353.6 µm)	19.7026
1.50 to 2.00; (250 µm)	15.2650
2.00 to 2.50; (176.8 µm)	6.8578
2.50 to 3.00; (125 µm)	2.1333
3.00 to 3.50; (88.39 µm)	0.6316
3.50 to 4.00; (62.5 µm)	0.2153
4.00 to 4.50; (44.19 µm)	0.1252
4.50 to 5.00; (31.25 µm)	0.1119
5.00 to 5.50; (22.097 µm)	0.0977
5.50 to 6.00; (15.625 µm)	0.0909
6.00 to 6.50; (11.049 µm)	0.0815
6.50 to 7.00; (7.813 µm)	0.0744
7.00 to 7.50; (5.524 µm)	0.0679
7.50 to 8.00; (3.906 µm)	0.0577
8.00 to 8.50; (2.762 µm)	0.0435
8.50 to 9.00; (1.953 µm)	0.0336
9.00 to 9.50; (1.381 µm)	0.0322
9.50 to 10.00; (0.977 µm)	0.0361
10.00 to 10.50; (0.691 µm)	0.0398
10.50 to 11.00; (0.488 µm)	0.0411
11.00 to 11.50; (0.345 µm)	0.0396
11.50 to 12.00; (0.244 µm)	0.0359
12.00 to 12.50; (0.173 µm)	0.0300
12.50 to 13.00; (0.122 µm)	0.0241
13.00 to 13.50; (0.086 µm)	0.0166

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Exercise Code:	**PS58**
LabCode:	**PSA_BM REP 3**
Sample Code:	**PS58BM REP 3**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0052**
-1.50 to -1.00; 2 mm	**9.3738**
-1.00 to -0.50; 1.4 mm	**14.3376**
-0.50 to 0.00; 1 mm	**10.3430**
0.00 to 0.50; (707 µm)	5.4499
0.50 to 1.00; (500 µm)	13.2733
1.00 to 1.50; (353.6 µm)	19.8660
1.50 to 2.00; (250 µm)	15.8836
2.00 to 2.50; (176.8 µm)	7.3167
2.50 to 3.00; (125 µm)	2.2555
3.00 to 3.50; (88.39 µm)	0.6441
3.50 to 4.00; (62.5 µm)	0.2101
4.00 to 4.50; (44.19 µm)	0.1161
4.50 to 5.00; (31.25 µm)	0.1020
5.00 to 5.50; (22.097 µm)	0.0879
5.50 to 6.00; (15.625 µm)	0.0847
6.00 to 6.50; (11.049 µm)	0.0770
6.50 to 7.00; (7.813 µm)	0.0710
7.00 to 7.50; (5.524 µm)	0.0659
7.50 to 8.00; (3.906 µm)	0.0567
8.00 to 8.50; (2.762 µm)	0.0430
8.50 to 9.00; (1.953 µm)	0.0336
9.00 to 9.50; (1.381 µm)	0.0327
9.50 to 10.00; (0.977 µm)	0.0371
10.00 to 10.50; (0.691 µm)	0.0409
10.50 to 11.00; (0.488 µm)	0.0422
11.00 to 11.50; (0.345 µm)	0.0407
11.50 to 12.00; (0.244 µm)	0.0369
12.00 to 12.50; (0.173 µm)	0.0308
12.50 to 13.00; (0.122 µm)	0.0248
13.00 to 13.50; (0.086 µm)	0.0171

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Exercise Code:	**PS58**
LabCode:	**PSA_BM REP 4**
Sample Code:	**PS58BM REP 4**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0158**
-1.50 to -1.00; 2 mm	**11.4940**
-1.00 to -0.50; 1.4 mm	**12.3522**
-0.50 to 0.00; 1 mm	**11.0307**
0.00 to 0.50; (707 µm)	5.5610
0.50 to 1.00; (500 µm)	13.2627
1.00 to 1.50; (353.6 µm)	19.4097
1.50 to 2.00; (250 µm)	15.4495
2.00 to 2.50; (176.8 µm)	7.1722
2.50 to 3.00; (125 µm)	2.2458
3.00 to 3.50; (88.39 µm)	0.6537
3.50 to 4.00; (62.5 µm)	0.2200
4.00 to 4.50; (44.19 µm)	0.1256
4.50 to 5.00; (31.25 µm)	0.1102
5.00 to 5.50; (22.097 µm)	0.0971
5.50 to 6.00; (15.625 µm)	0.0938
6.00 to 6.50; (11.049 µm)	0.0858
6.50 to 7.00; (7.813 µm)	0.0800
7.00 to 7.50; (5.524 µm)	0.0743
7.50 to 8.00; (3.906 µm)	0.0637
8.00 to 8.50; (2.762 µm)	0.0482
8.50 to 9.00; (1.953 µm)	0.0370
9.00 to 9.50; (1.381 µm)	0.0352
9.50 to 10.00; (0.977 µm)	0.0391
10.00 to 10.50; (0.691 µm)	0.0429
10.50 to 11.00; (0.488 µm)	0.0441
11.00 to 11.50; (0.345 µm)	0.0423
11.50 to 12.00; (0.244 µm)	0.0383
12.00 to 12.50; (0.173 µm)	0.0319
12.50 to 13.00; (0.122 µm)	0.0257
13.00 to 13.50; (0.086 µm)	0.0177

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Exercise Code:	**PS58**
LabCode:	**PSA_BM REP 5**
Sample Code:	**PS58BM REP 5**

Phi interval (explicit) + sieve mesh (theoretical sieves shown in brackets)	Volume/Weight (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	**0.0000**
-3.00 to -2.50; 5.6 mm	**0.0000**
-2.50 to -2.00; 4 mm	**0.0000**
-2.00 to -1.50; 2.8 mm	**0.0237**
-1.50 to -1.00; 2 mm	**11.3785**
-1.00 to -0.50; 1.4 mm	**12.5425**
-0.50 to 0.00; 1 mm	**10.8255**
0.00 to 0.50; (707 µm)	5.7657
0.50 to 1.00; (500 µm)	13.4842
1.00 to 1.50; (353.6 µm)	19.5828
1.50 to 2.00; (250 µm)	15.4236
2.00 to 2.50; (176.8 µm)	7.0184
2.50 to 3.00; (125 µm)	2.1537
3.00 to 3.50; (88.39 µm)	0.6115
3.50 to 4.00; (62.5 µm)	0.1943
4.00 to 4.50; (44.19 µm)	0.1086
4.50 to 5.00; (31.25 µm)	0.0961
5.00 to 5.50; (22.097 µm)	0.0838
5.50 to 6.00; (15.625 µm)	0.0789
6.00 to 6.50; (11.049 µm)	0.0732
6.50 to 7.00; (7.813 µm)	0.0688
7.00 to 7.50; (5.524 µm)	0.0634
7.50 to 8.00; (3.906 µm)	0.0536
8.00 to 8.50; (2.762 µm)	0.0402
8.50 to 9.00; (1.953 µm)	0.0308
9.00 to 9.50; (1.381 µm)	0.0299
9.50 to 10.00; (0.977 µm)	0.0347
10.00 to 10.50; (0.691 µm)	0.0394
10.50 to 11.00; (0.488 µm)	0.0416
11.00 to 11.50; (0.345 µm)	0.0407
11.50 to 12.00; (0.244 µm)	0.0374
12.00 to 12.50; (0.173 µm)	0.0314
12.50 to 13.00; (0.122 µm)	0.0253
13.00 to 13.50; (0.086 µm)	0.0175