

# Quality Control Statistical Summary

## Onshore Grab Sample: PI-24-BB

**Sample Taken By:** D. Phelps                      **Latitude:** 27° 52' 22.5"  
**Sample Taken On:** 10/08/09                      **Longitude:** 82° 51' 3.0"  
**County:** Pinellas                                      **Datum:** WGS 84

Statistical Results: Pre-CaCO3						
	Duplicate			Original		
<b>Mean:</b>	1.5364	phi	(0.3448 mm)	1.5143	phi	(0.3501 mm)
<b>Standard Dev:</b>	1.6015	phi-units	(0.3295 mm)	1.6396	phi-units	(0.3209 mm)
<b>Skewness:</b>	-0.8845	dimensionless		-0.8926	dimensionless	
<b>Kurtosis:</b>	2.3896	dimensionless		2.4260	dimensionless	
<b>5th Moment:</b>	-4.0682	dimensionless		-4.1963	dimensionless	
<b>6th Moment:</b>	8.9928	dimensionless		9.4089	dimensionless	
<b>RARD*:</b>	1.0424	dimensionless		1.0827	dimensionless	
<b>Median:</b>	2.2356	phi	(0.2123 mm)	2.2325	phi	(0.2128 mm)

Statistical Results: CaCO3						
	Duplicate			Original		
<b>Mean:</b>	-0.0536	phi	(1.0378 mm)	-0.1893	phi	(1.1402 mm)
<b>Standard Dev:</b>	1.4083	phi-units	(0.3767 mm)	1.3240	phi-units	(0.3994 mm)
<b>Skewness:</b>	0.5583	dimensionless		0.3828	dimensionless	
<b>Kurtosis:</b>	2.7927	dimensionless		2.8145	dimensionless	
<b>5th Moment:</b>	3.7243	dimensionless		3.2431	dimensionless	
<b>6th Moment:</b>	11.7292	dimensionless		13.0915	dimensionless	
<b>RARD*:</b>	26.2769	dimensionless		6.9950	dimensionless	
<b>Median:</b>	-0.3412	phi	(1.2668 mm)	-0.3974	phi	(1.3171 mm)

Statistical Results: Post-CaCO3						
	Duplicate			Original		
<b>Mean:</b>	2.5607	phi	(0.1695 mm)	2.6136	phi	(0.1634 mm)
<b>Standard Dev:</b>	0.5042	phi-units	(0.705 mm)	0.4366	phi-units	(0.7389 mm)
<b>Skewness:</b>	-2.0894	dimensionless		-1.7595	dimensionless	
<b>Kurtosis:</b>	9.9694	dimensionless		10.4802	dimensionless	
<b>5th Moment:</b>	-41.9247	dimensionless		-56.5838	dimensionless	
<b>6th Moment:</b>	201.9054	dimensionless		399.6299	dimensionless	
<b>RARD*:</b>	0.1969	dimensionless		0.1671	dimensionless	
<b>Median:</b>	2.5256	phi	(0.1737 mm)	2.5548	phi	(0.1702 mm)

Additional Data	
<b>Total Fines</b>	
<b>Original:</b>	0.39 %
<b>Duplicate:</b>	0.5 %
<b>Total Carbonates</b>	
<b>Original:</b>	39.2 %
<b>Duplicate:</b>	39.14 %

Statistical Explanation	
Calculations based on the Method of Moments Skewness: 3rd Stand. Moment; Exact Gaussian = 0.0 Kurtosis: 4th Stand. Moment; Exact Gaussian = 3.0 Millimeter data calculated by $mm = 2^{-(\phi)}$	
<b>* Reciprocal Absolute Relative Dispersion (RARD) Scale</b>	
< 0.5	Excellent homogeneity (e.g., beaches)
0.5 to 1.0	Good homogeneity
1.0 to 1.33	Fair homogeneity
> 1.33	Poor homogeneity (e.g., glacial)

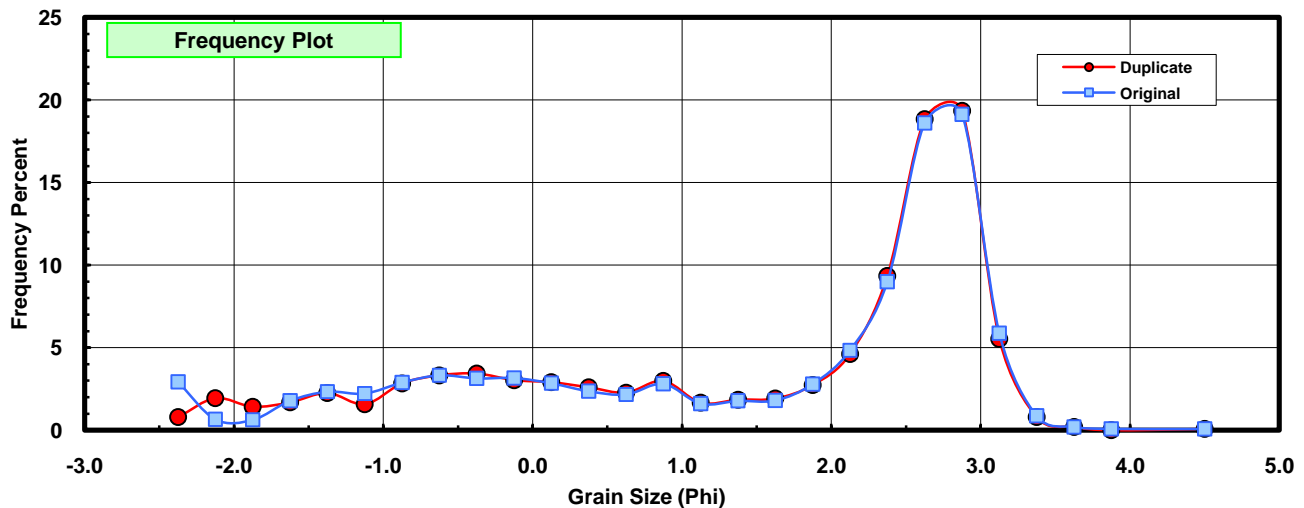
# Pre-Digestion Grain Size Distribution

Onshore Grab Sample: PI-24-BB

Total Duplicate Sample Mass: 49.353 grams

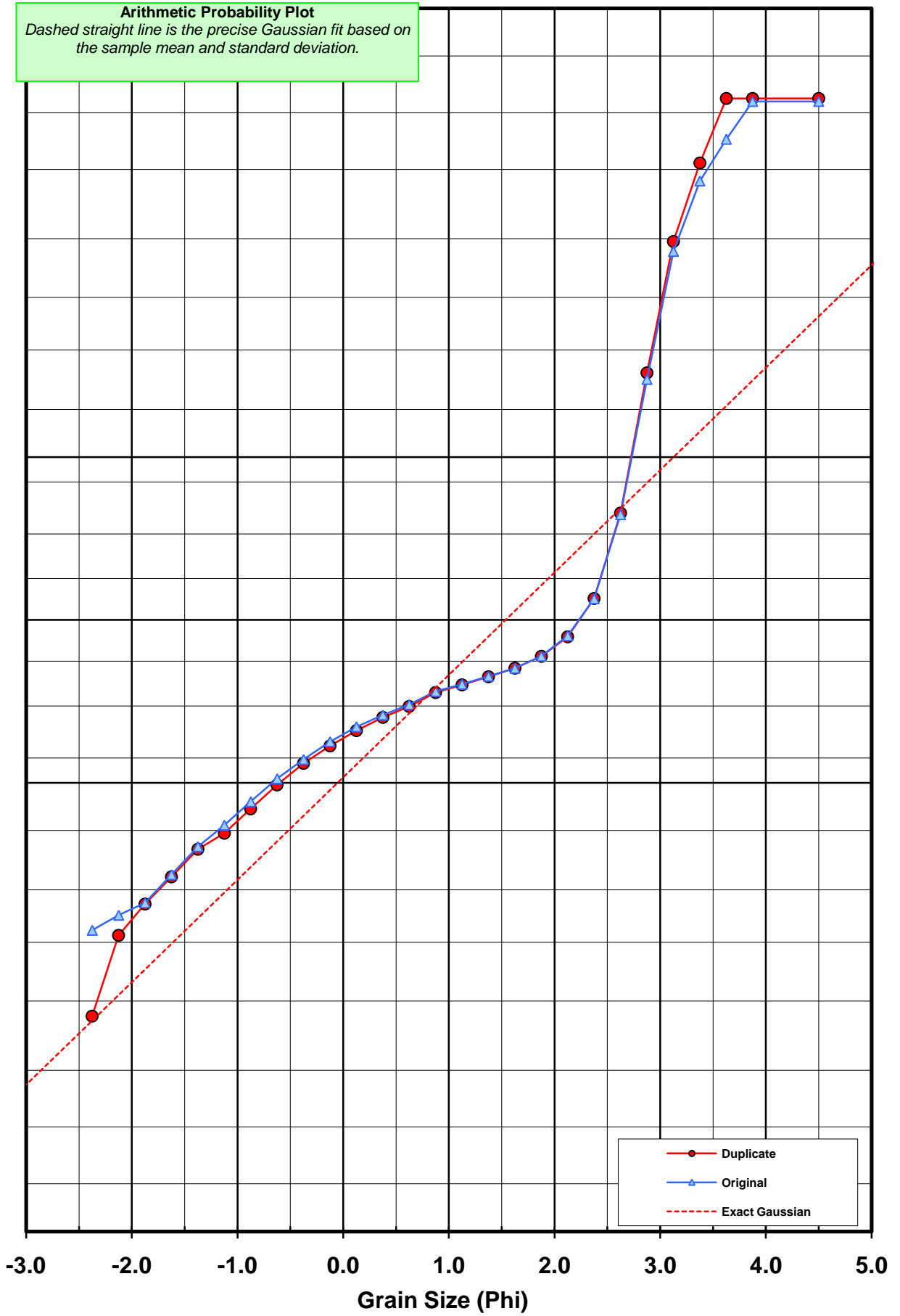
Total Original Sample Mass: 52.736 grams

Sieve Size (phi)	Sieve Midpt (phi)	Weight of Dupl (grams)	Freq Weight %	Cumulative Weight %	Weight of Original (grams)	Freq Weight %	Cumulative Weight %
-2.25	-2.375	0.391	0.792	0.792	1.546	2.932	2.932
-2.00	-2.125	0.958	1.941	2.733	0.347	0.658	3.590
-1.75	-1.875	0.702	1.422	4.156	0.333	0.631	4.221
-1.50	-1.625	0.832	1.686	5.842	0.943	1.788	6.009
-1.25	-1.375	1.115	2.259	8.101	1.232	2.336	8.345
-1.00	-1.125	0.776	1.572	9.673	1.173	2.224	10.570
-0.75	-0.875	1.402	2.841	12.514	1.525	2.892	13.461
-0.50	-0.625	1.640	3.323	15.837	1.756	3.330	16.791
-0.25	-0.375	1.695	3.434	19.271	1.657	3.142	19.933
0.00	-0.125	1.498	3.035	22.307	1.670	3.167	23.100
0.25	0.125	1.435	2.908	25.214	1.501	2.846	25.946
0.50	0.375	1.283	2.600	27.814	1.247	2.365	28.311
0.75	0.625	1.124	2.277	30.091	1.143	2.167	30.478
1.00	0.875	1.475	2.989	33.080	1.485	2.816	33.294
1.25	1.125	0.820	1.661	34.742	0.848	1.608	34.902
1.50	1.375	0.912	1.848	36.589	0.941	1.784	36.687
1.75	1.625	0.947	1.919	38.508	0.953	1.807	38.494
2.00	1.875	1.350	2.735	41.244	1.476	2.799	41.292
2.25	2.125	2.280	4.620	45.863	2.552	4.839	46.132
2.50	2.375	4.615	9.351	55.214	4.746	9.000	55.131
2.75	2.625	9.296	18.836	74.050	9.815	18.612	73.743
3.00	2.875	9.552	19.354	93.405	10.092	19.137	92.880
3.25	3.125	2.731	5.534	98.938	3.098	5.875	98.754
3.50	3.375	0.394	0.798	99.737	0.462	0.876	99.630
3.75	3.625	0.093	0.188	99.925	0.107	0.203	99.833
4.00	3.875	0.000	0.000	99.925	0.046	0.087	99.920
5.00	4.500	0.037	0.075	100.000	0.042	0.080	100.000



99.99  
99.97  
99.9  
99.7  
99  
97.5  
95  
90  
84  
80  
70  
60  
50  
40  
30  
20  
16  
10  
5  
2.5  
1  
0.3  
0.1  
0.03  
0.01

**Arithmetic Probability Plot**  
*Dashed straight line is the precise Gaussian fit based on the sample mean and standard deviation.*



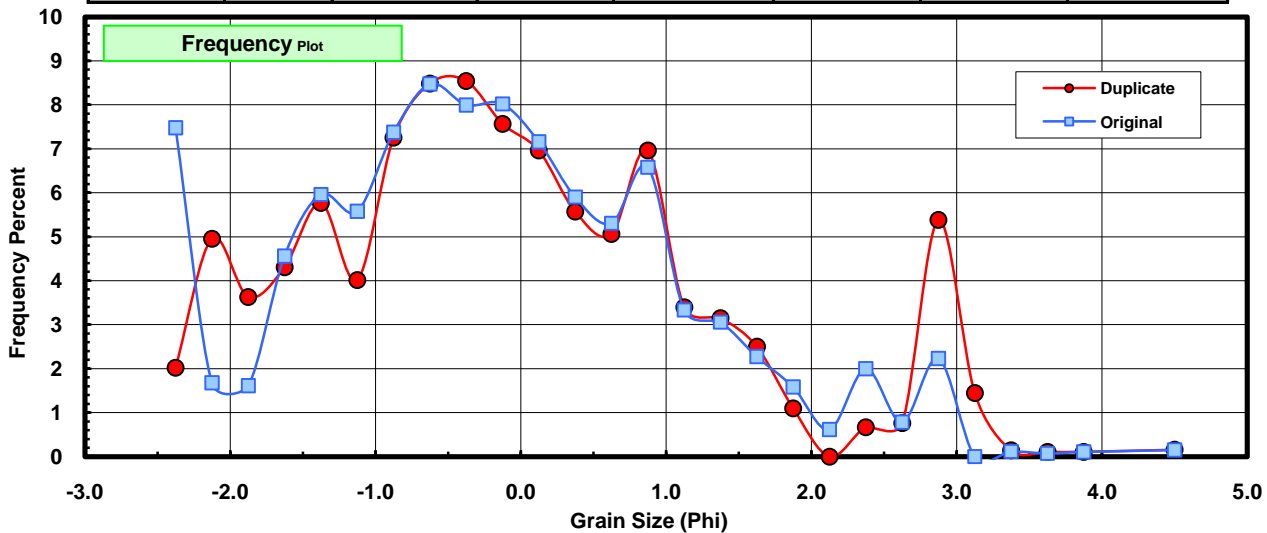
● Duplicate  
▲ Original  
- - - Exact Gaussian

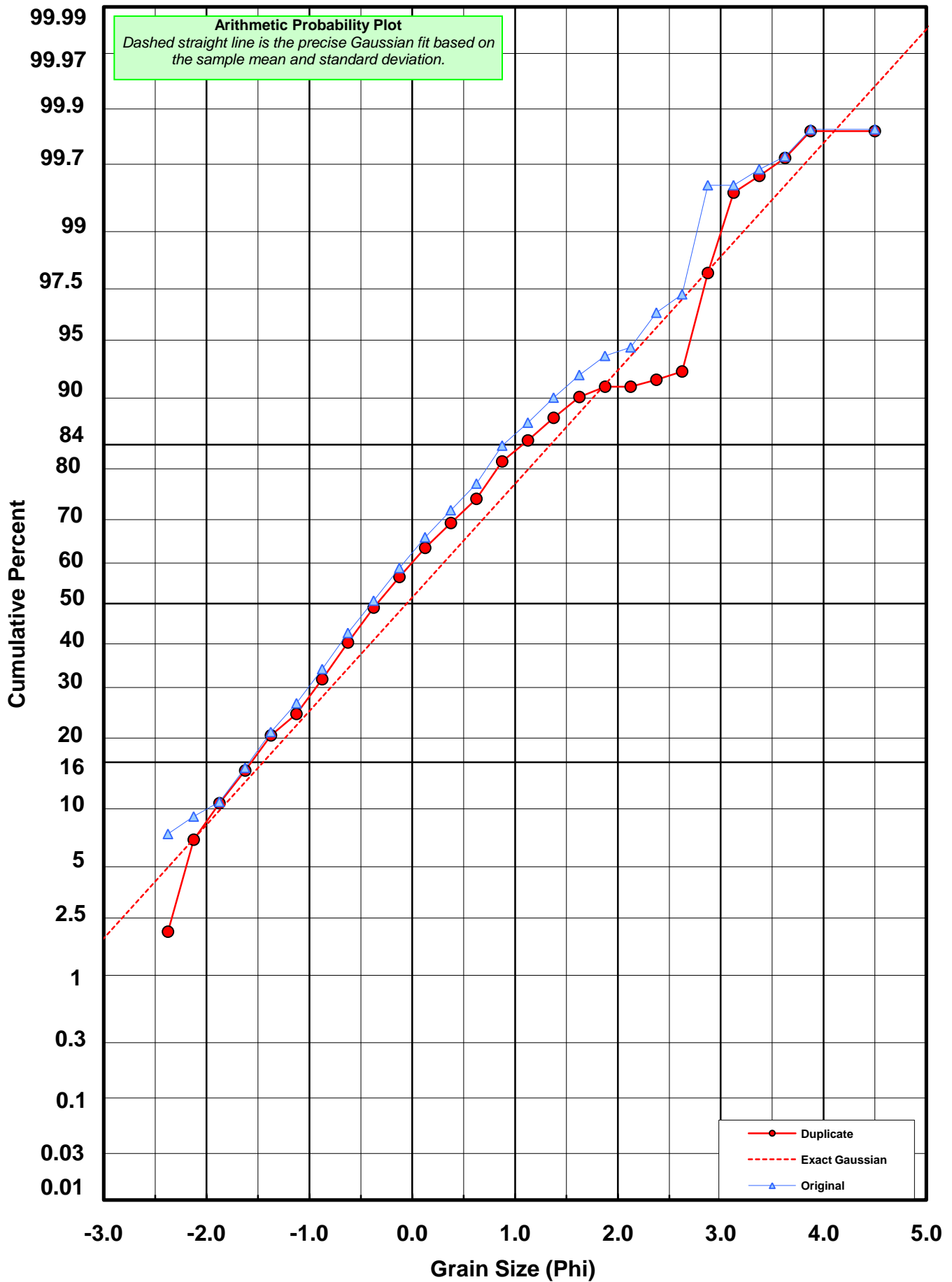
# Carbonate Grain Size Distribution

Onshore Grab Sample: PI-24-BB

**Total Duplicate Carbonate Mass:** 19.330 grams  
**% Carbonate in Duplicate:** 39.1 %  
**Total Original Carbonate Mass:** 20.672 grams  
**% Carbonate in Original:** 39.2 %

Sieve Size (phi)	Sieve Midpt (phi)	Weight of Dupl (grams)	Freq Weight %	Cumulative Weight %	Weight of Original (grams)	Freq Weight %	Cumulative Weight %
-2.25	-2.375	0.391	2.023	2.023	1.546	7.479	7.479
-2.00	-2.125	0.958	4.956	6.979	0.347	1.679	9.157
-1.75	-1.875	0.702	3.632	10.610	0.333	1.611	10.768
-1.50	-1.625	0.832	4.304	14.915	0.943	4.562	15.330
-1.25	-1.375	1.115	5.768	20.683	1.232	5.960	21.290
-1.00	-1.125	0.776	4.014	24.697	1.153	5.578	26.867
-0.75	-0.875	1.402	7.253	31.950	1.525	7.377	34.244
-0.50	-0.625	1.640	8.484	40.435	1.752	8.475	42.720
-0.25	-0.375	1.651	8.541	48.976	1.653	7.996	50.716
0.00	-0.125	1.463	7.569	56.544	1.658	8.021	58.736
0.25	0.125	1.345	6.958	63.502	1.480	7.159	65.896
0.50	0.375	1.077	5.572	69.074	1.220	5.902	71.798
0.75	0.625	0.978	5.059	74.133	1.097	5.307	77.104
1.00	0.875	1.346	6.963	81.097	1.360	6.579	83.683
1.25	1.125	0.656	3.394	84.490	0.689	3.333	87.016
1.50	1.375	0.609	3.151	87.641	0.632	3.057	90.074
1.75	1.625	0.483	2.499	90.140	0.470	2.274	92.347
2.00	1.875	0.212	1.097	91.236	0.327	1.582	93.929
2.25	2.125	0.000	0.000	91.236	0.127	0.614	94.543
2.50	2.375	0.129	0.667	91.904	0.413	1.998	96.541
2.75	2.625	0.147	0.760	92.664	0.162	0.784	97.325
3.00	2.875	1.040	5.380	98.044	0.461	2.230	99.555
3.25	3.125	0.279	1.443	99.488	0.000	0.000	99.555
3.50	3.375	0.027	0.140	99.628	0.024	0.116	99.671
3.75	3.625	0.021	0.109	99.736	0.015	0.073	99.744
4.00	3.875	0.021	0.109	99.845	0.022	0.106	99.850
5.00	4.500	0.030	0.155	100.000	0.031	0.150	100.000





# Post-Digestion Grain Size Distribution

Onshore Grab Sample: PI-24-BB

**Total Duplicate Digested Mass:** 30.124 grams  
**% Silica in Duplicate:** 61.0 %  
**Total Original Digested Mass:** 32.122 grams  
**% Silica in Original:** 60.9 %

Sieve Size (phi)	Sieve Midpt (phi)	Weight (grams)	Freq Weight %	Cumulative Weight %	Weight of Original (grams)	Freq Weight %	Cumulative Weight %
-2.25	-2.375	0.000	0.000	0.000	0.000	0.000	0.000
-2.00	-2.125	0.000	0.000	0.000	0.000	0.000	0.000
-1.75	-1.875	0.000	0.000	0.000	0.000	0.000	0.000
-1.50	-1.625	0.000	0.000	0.000	0.000	0.000	0.000
-1.25	-1.375	0.000	0.000	0.000	0.000	0.000	0.000
-1.00	-1.125	0.000	0.000	0.000	0.020	0.062	0.062
-0.75	-0.875	0.000	0.000	0.000	0.000	0.000	0.062
-0.50	-0.625	0.000	0.000	0.000	0.004	0.012	0.075
-0.25	-0.375	0.044	0.146	0.146	0.004	0.012	0.087
0.00	-0.125	0.035	0.116	0.262	0.012	0.037	0.125
0.25	0.125	0.090	0.299	0.561	0.021	0.065	0.190
0.50	0.375	0.206	0.684	1.245	0.027	0.084	0.274
0.75	0.625	0.146	0.485	1.730	0.046	0.143	0.417
1.00	0.875	0.129	0.428	2.158	0.125	0.389	0.806
1.25	1.125	0.164	0.544	2.702	0.159	0.495	1.301
1.50	1.375	0.303	1.006	3.708	0.309	0.962	2.263
1.75	1.625	0.464	1.540	5.248	0.483	1.504	3.767
2.00	1.875	1.138	3.778	9.026	1.149	3.577	7.344
2.25	2.125	2.345	7.784	16.811	2.425	7.549	14.893
2.50	2.375	4.486	14.892	31.702	4.333	13.489	28.382
2.75	2.625	9.149	30.371	62.073	9.653	30.051	58.433
3.00	2.875	8.512	28.257	90.330	9.631	29.983	88.416
3.25	3.125	2.452	8.140	98.470	3.156	9.825	98.241
3.50	3.375	0.367	1.218	99.688	0.438	1.364	99.605
3.75	3.625	0.072	0.239	99.927	0.092	0.286	99.891
4.00	3.875	0.015	0.050	99.977	0.024	0.075	99.966
5.00	4.500	0.007	0.023	100.000	0.011	0.034	100.000

