



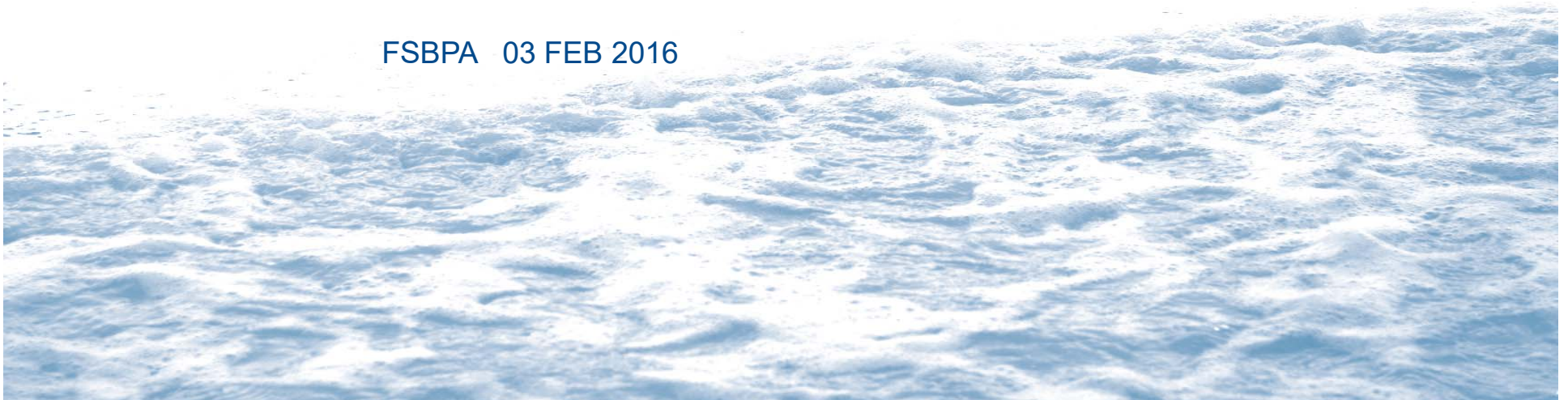
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PREDICTING THE LOSS OF FINE SEDIMENT FROM THE BORROW AREA TO THE BEACH

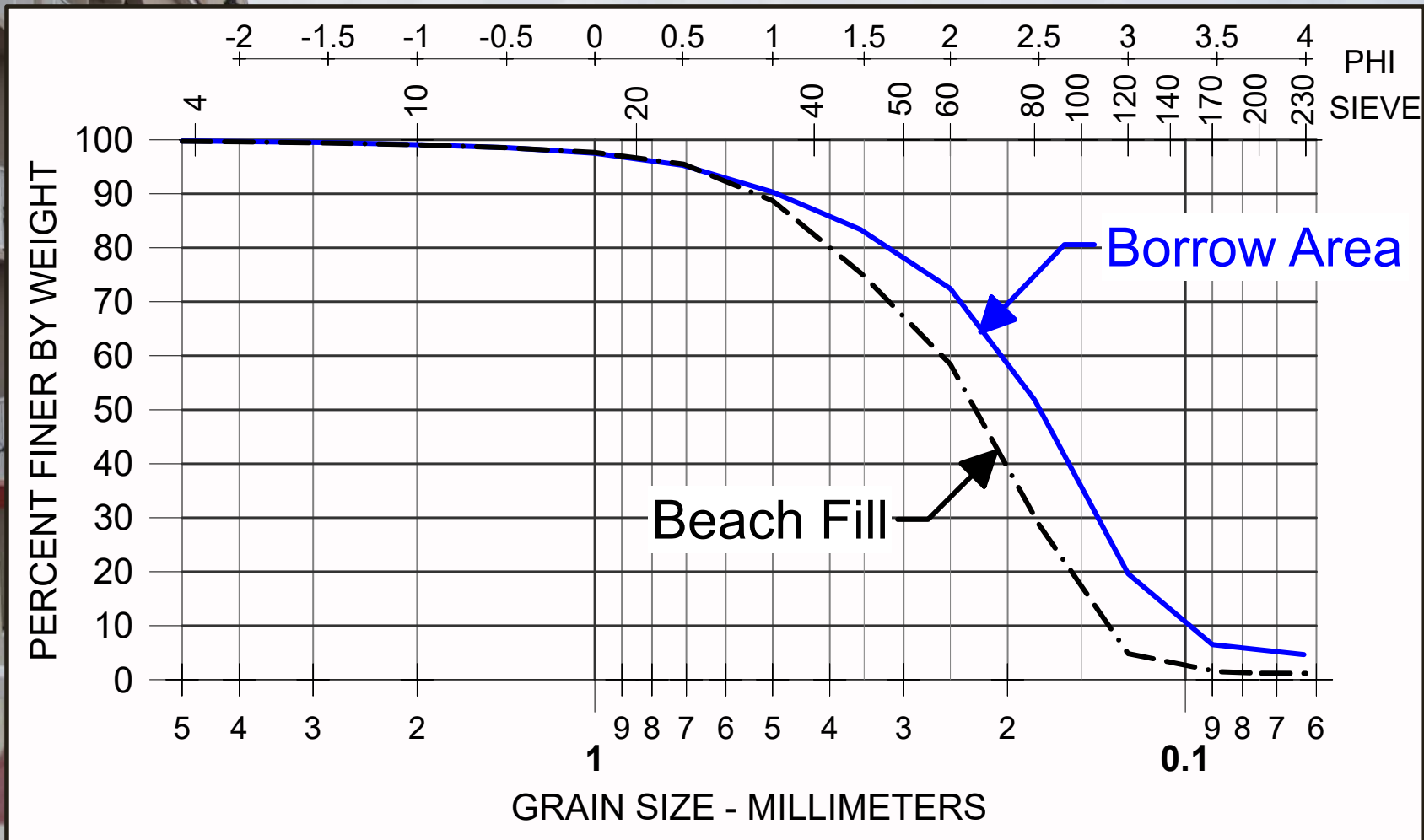
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FSBPA 03 FEB 2016



2011 Duval Borrow Area to Beach Comparison





Vibracore Rig

Vibracore Sample



Split Cores



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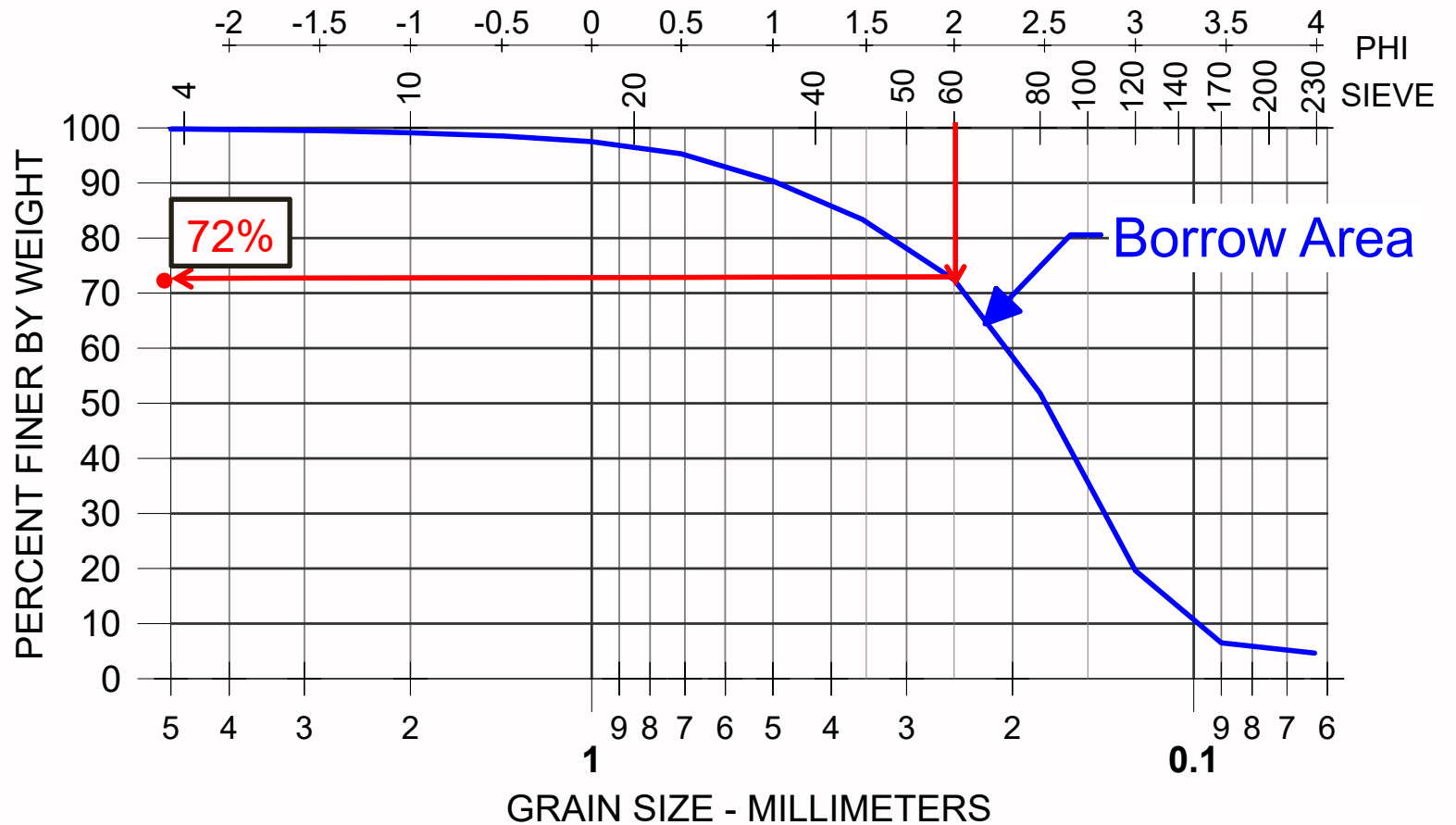
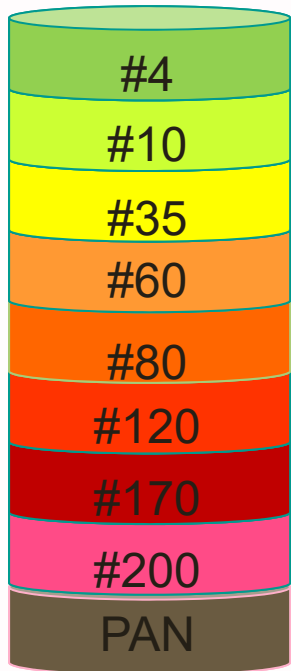
Determining the Distribution of Sizes in a Sample

(Sieve Analysis)



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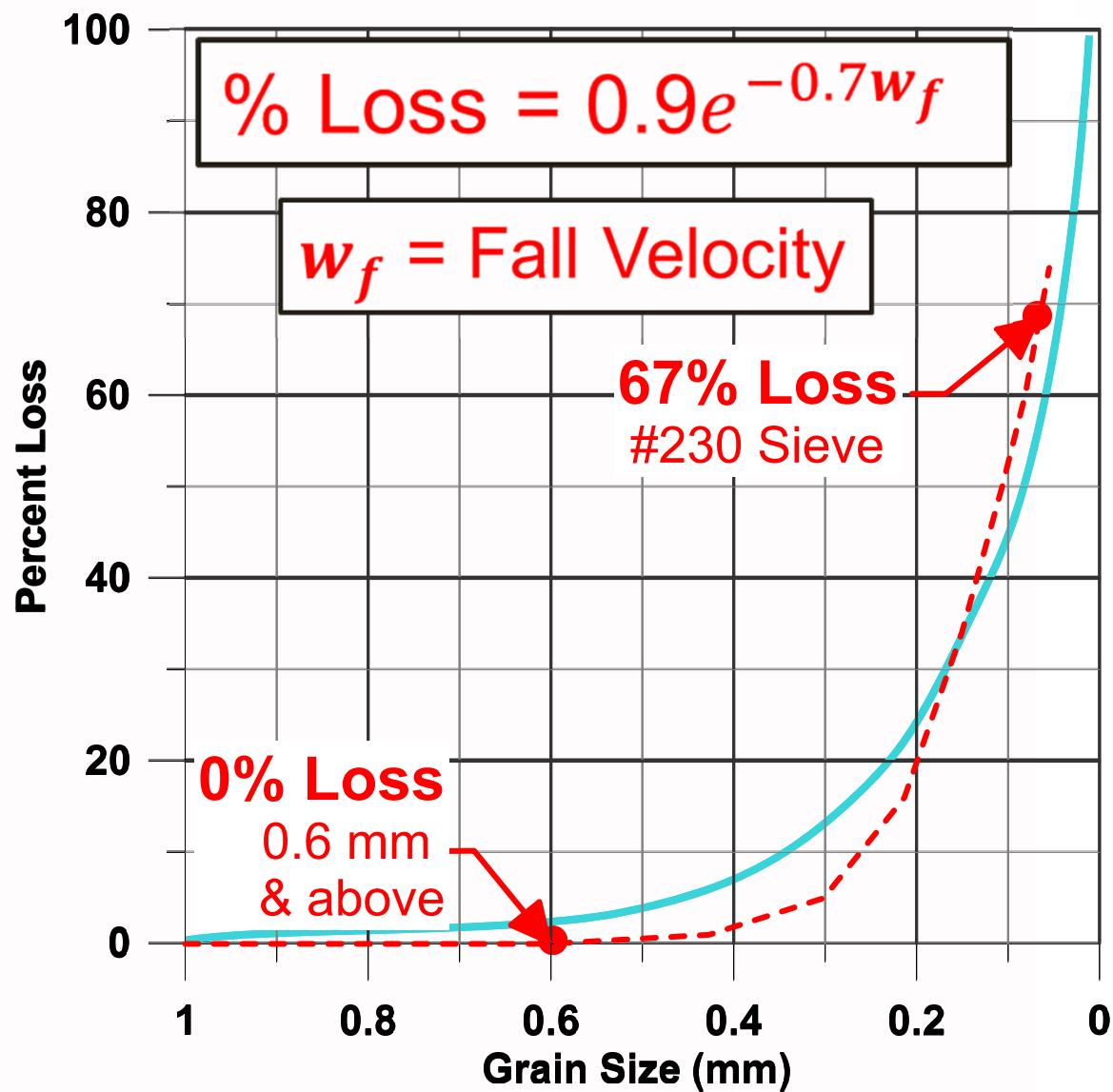
Grain Size Distribution Curve



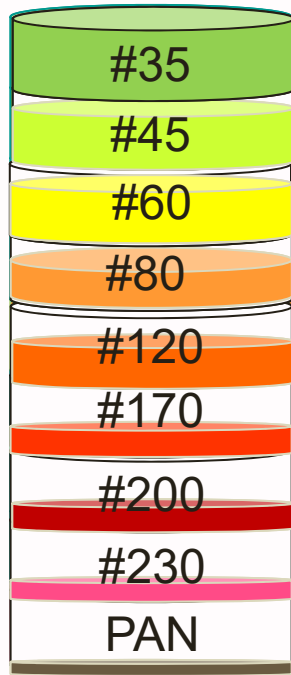


As-Built Samples from Beach

Predicting Sediment Coarsening

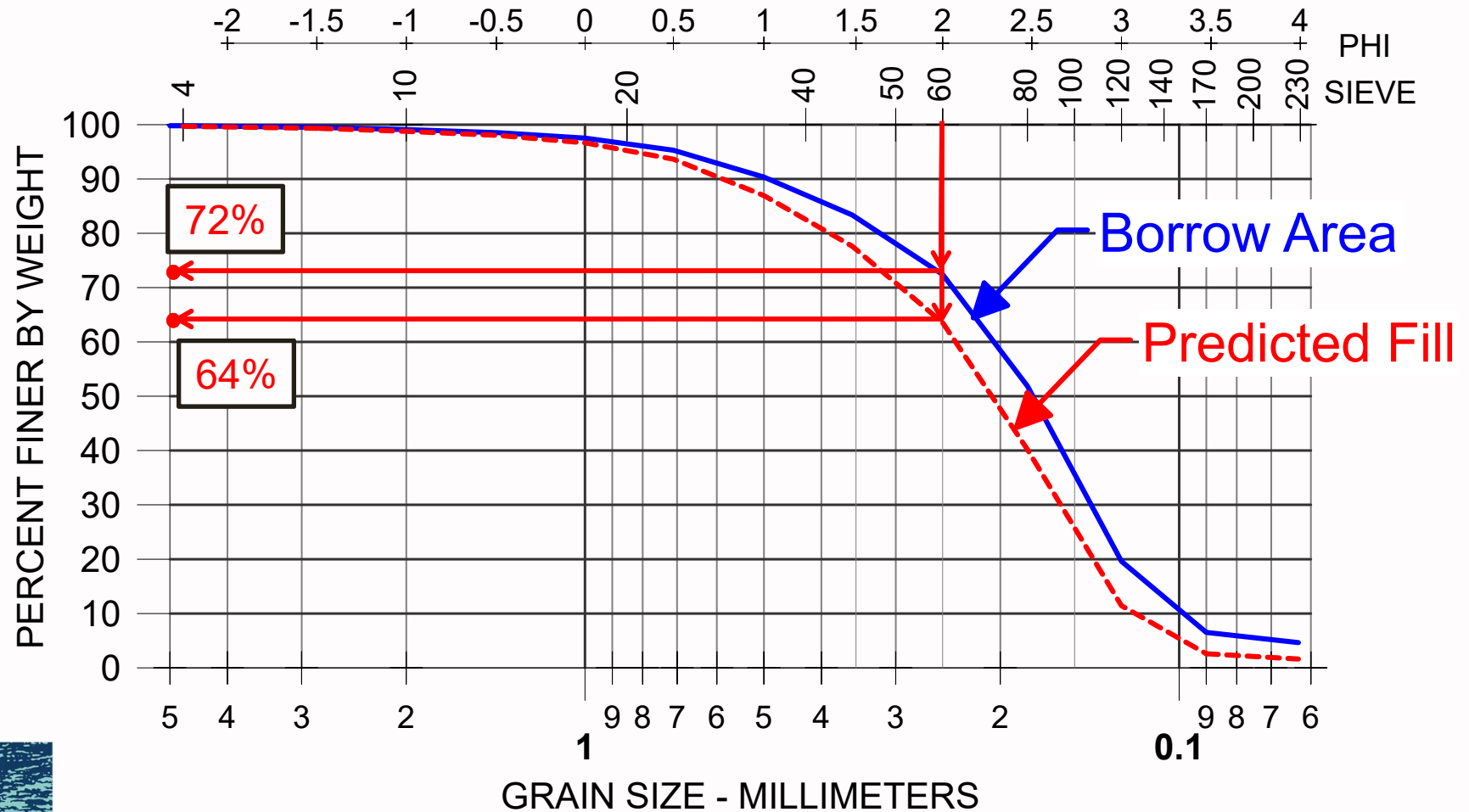


Predicting Sediment Coarsening Fall Velocity Filter



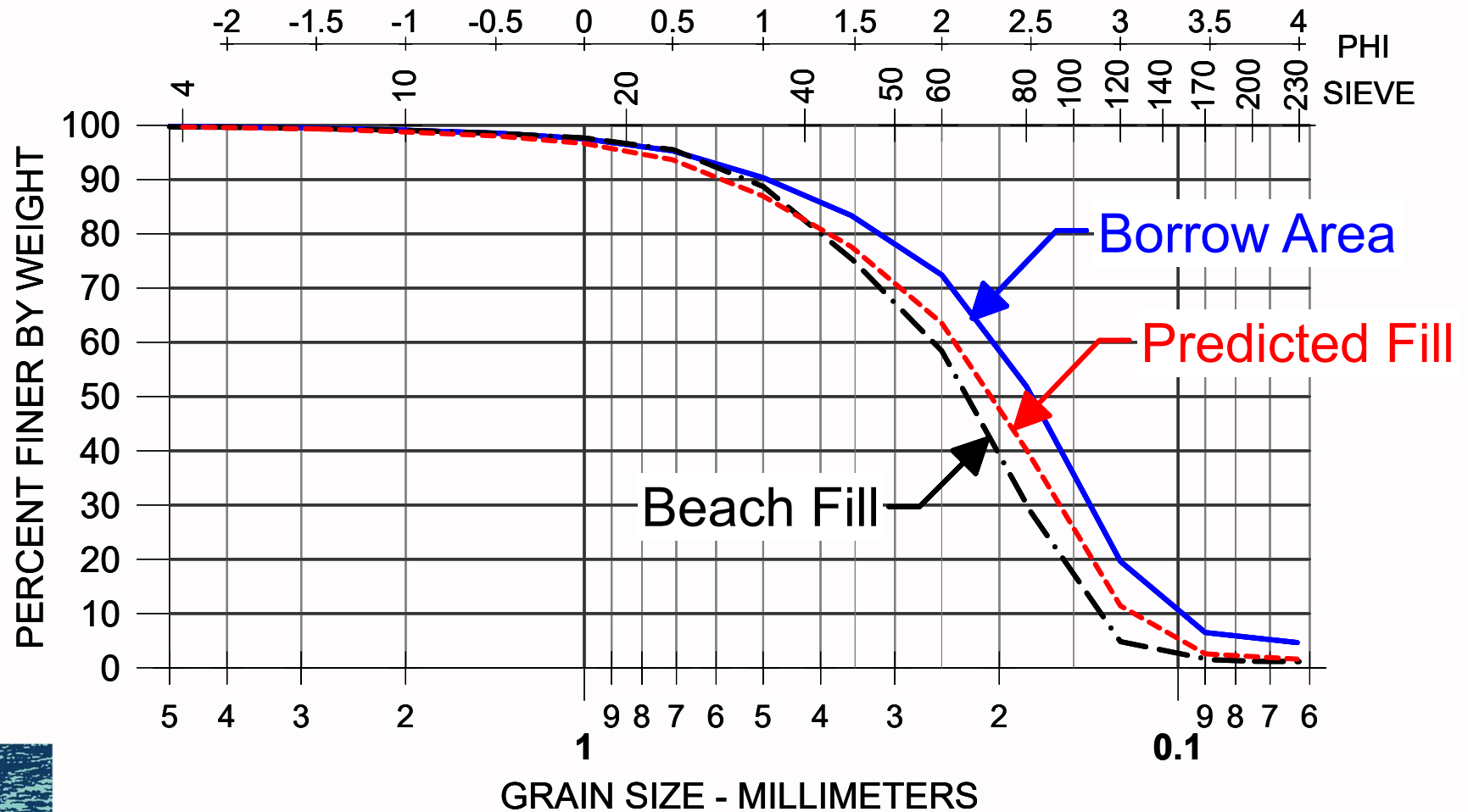
Range of Sizes	Percent Loss
0.5 – 0.71 mm	0%
0.35 – 0.5 mm	1%
0.25 – 0.35 mm	5%
0.18 – 0.25 mm	16%
0.13 – 0.18 mm	34%
0.09 – 0.13 mm	50%
0.074 – 0.09 mm	60%
0.063 – 0.074 mm	67%
< 0.063 mm	74%

Example Filter Application

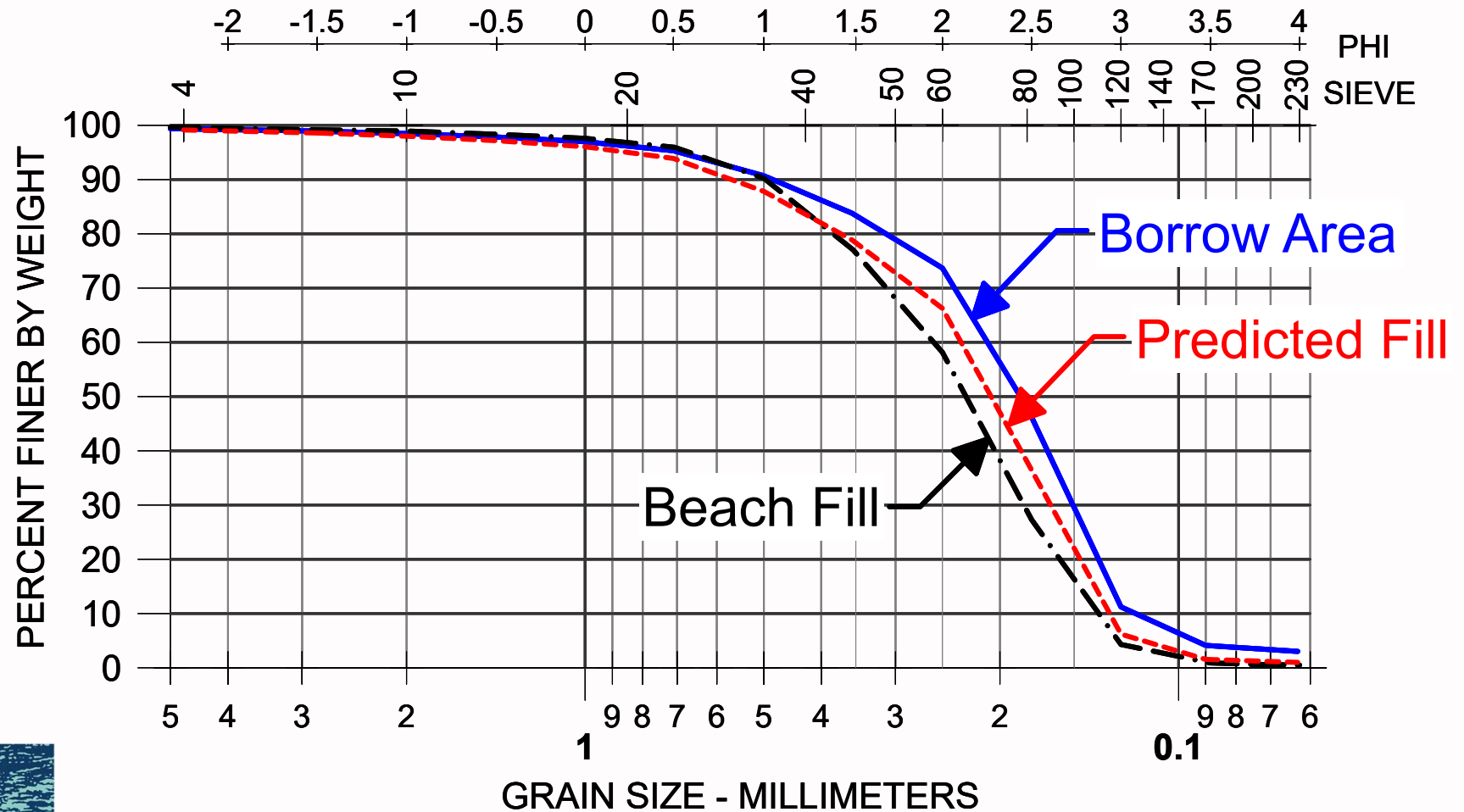




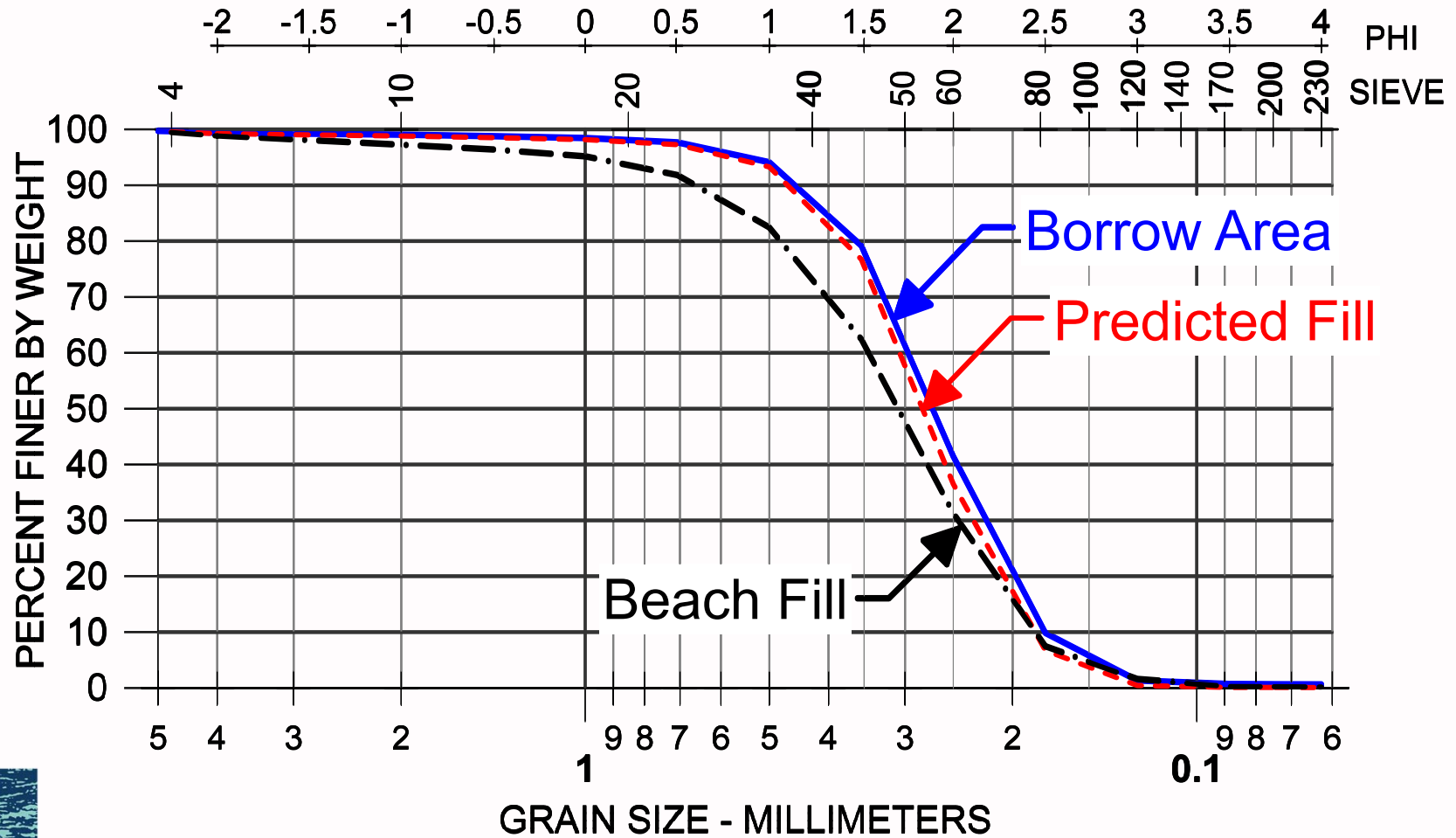
Duval County, FL – 2011



Duval County, FL – 2005

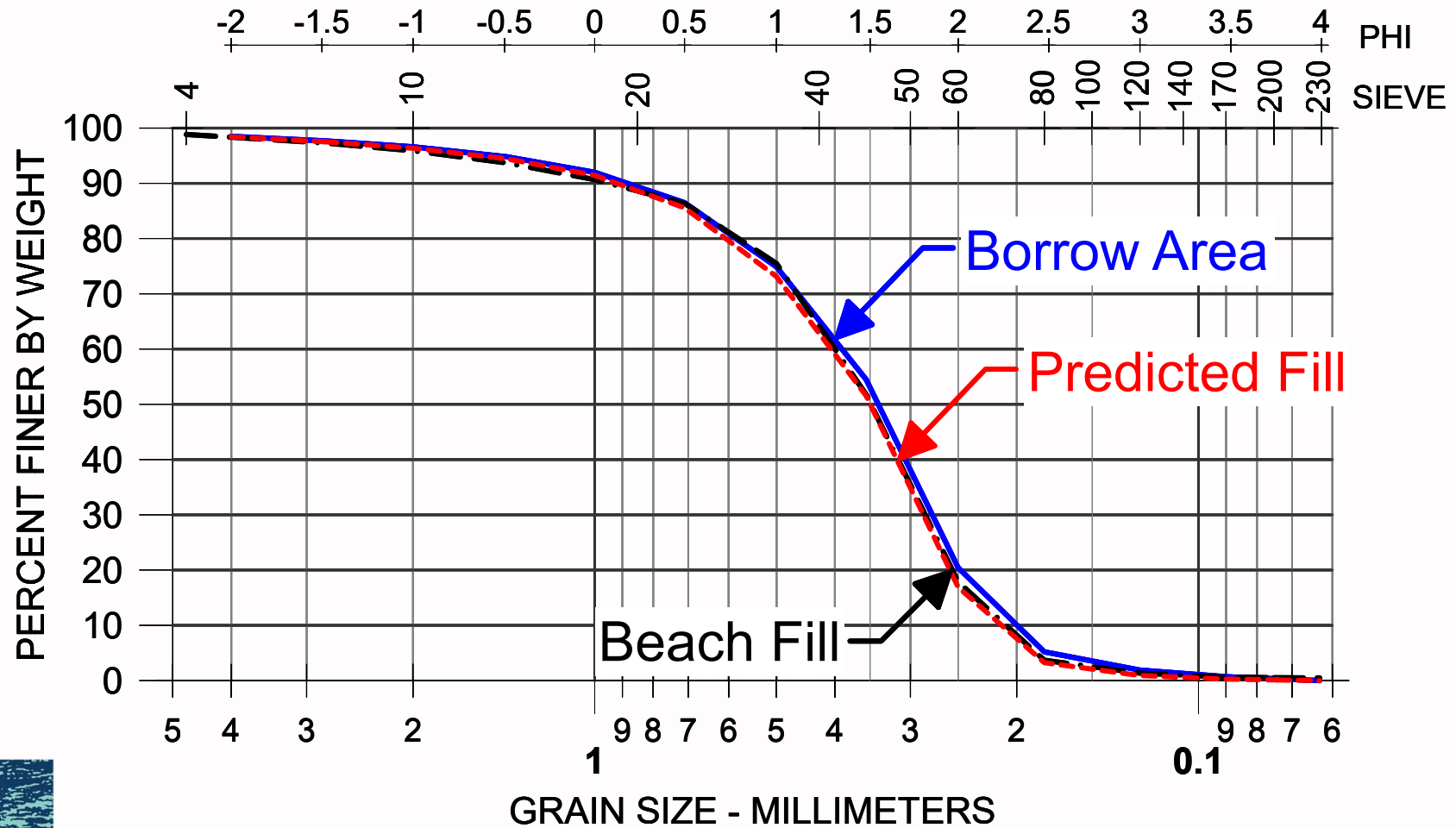


Baldwin County, AL – 2012-2013

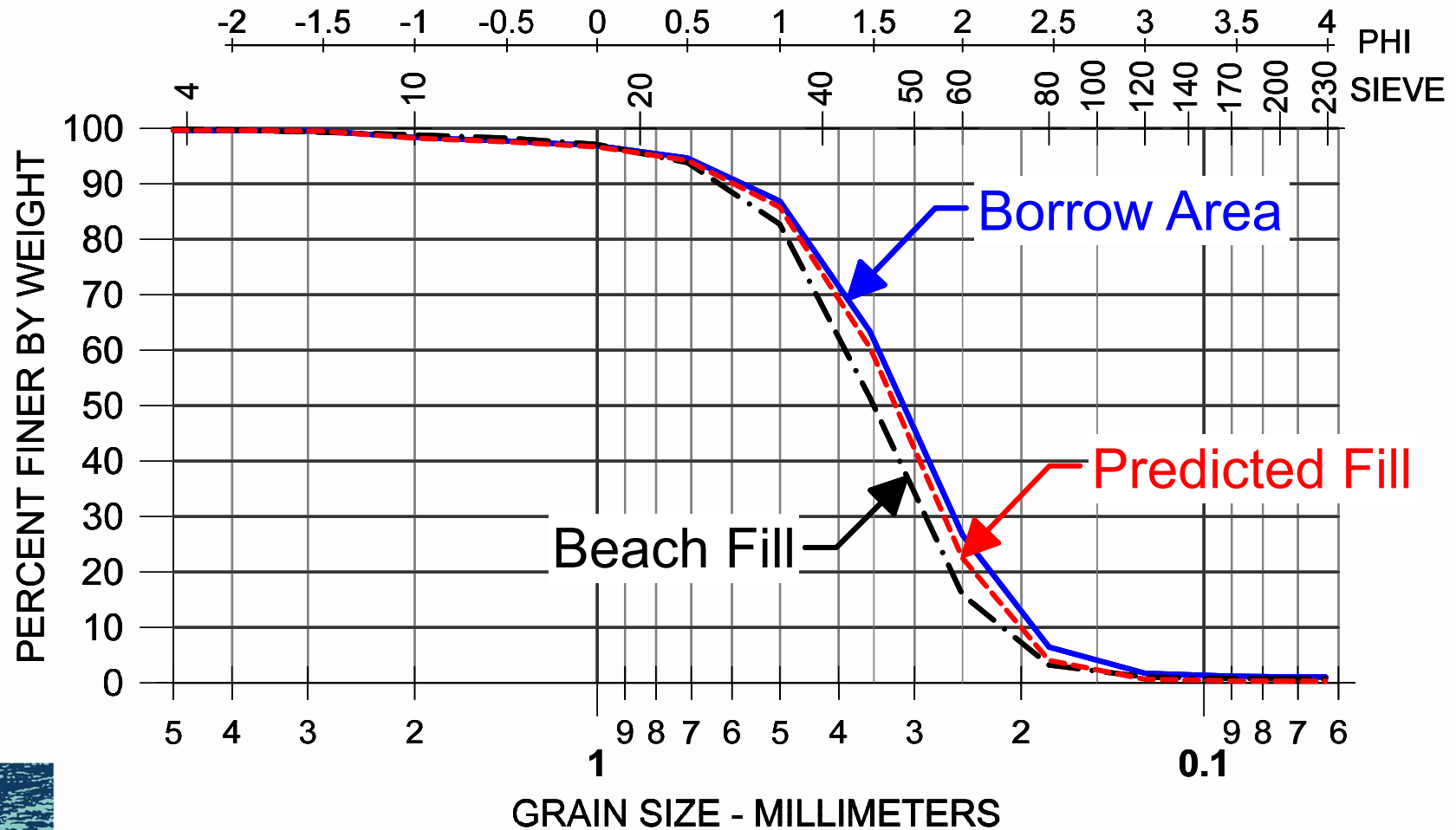


Brevard County, FL – 2010

South Reach

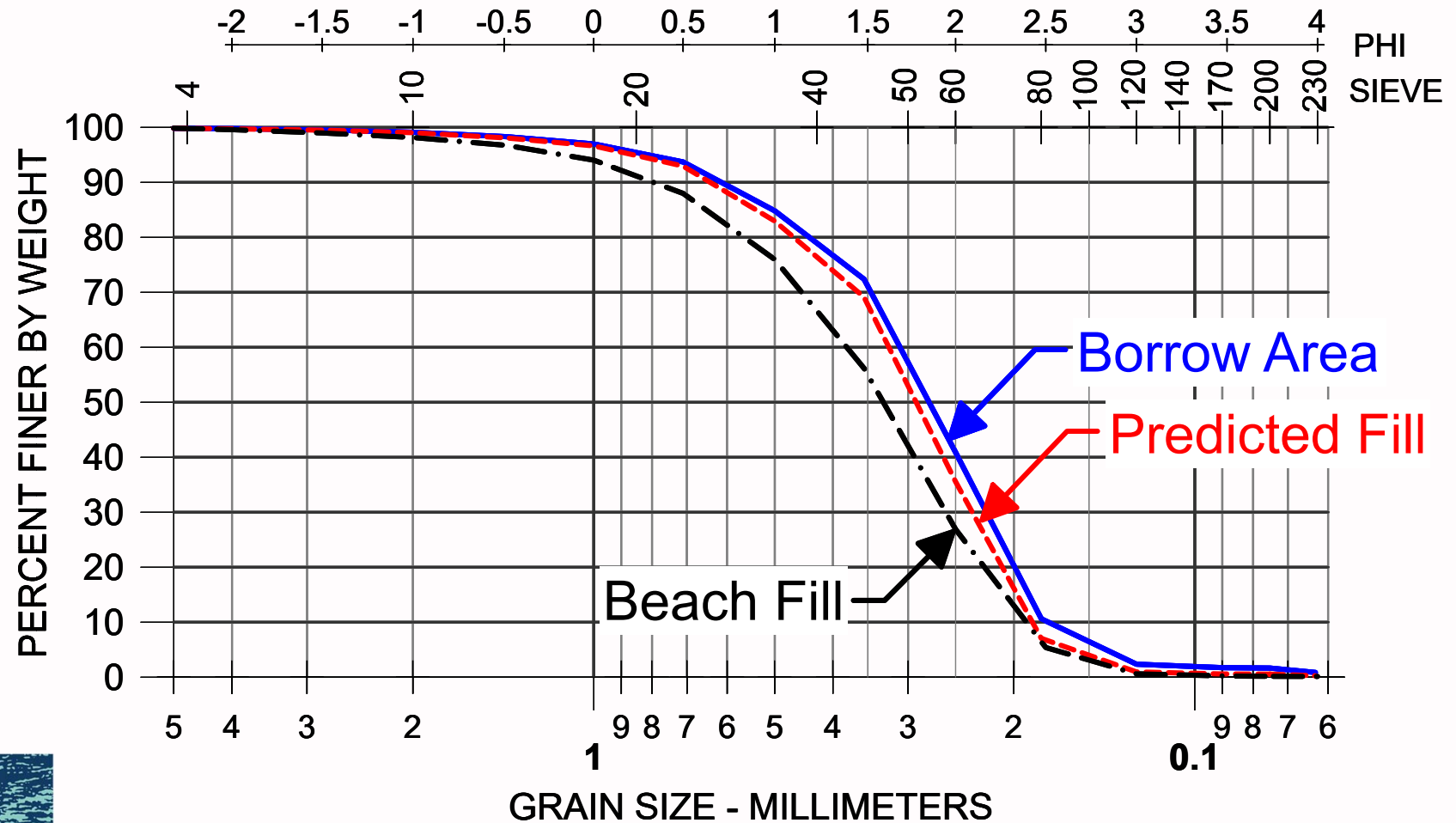


Pensacola Beach, FL 2005-2006



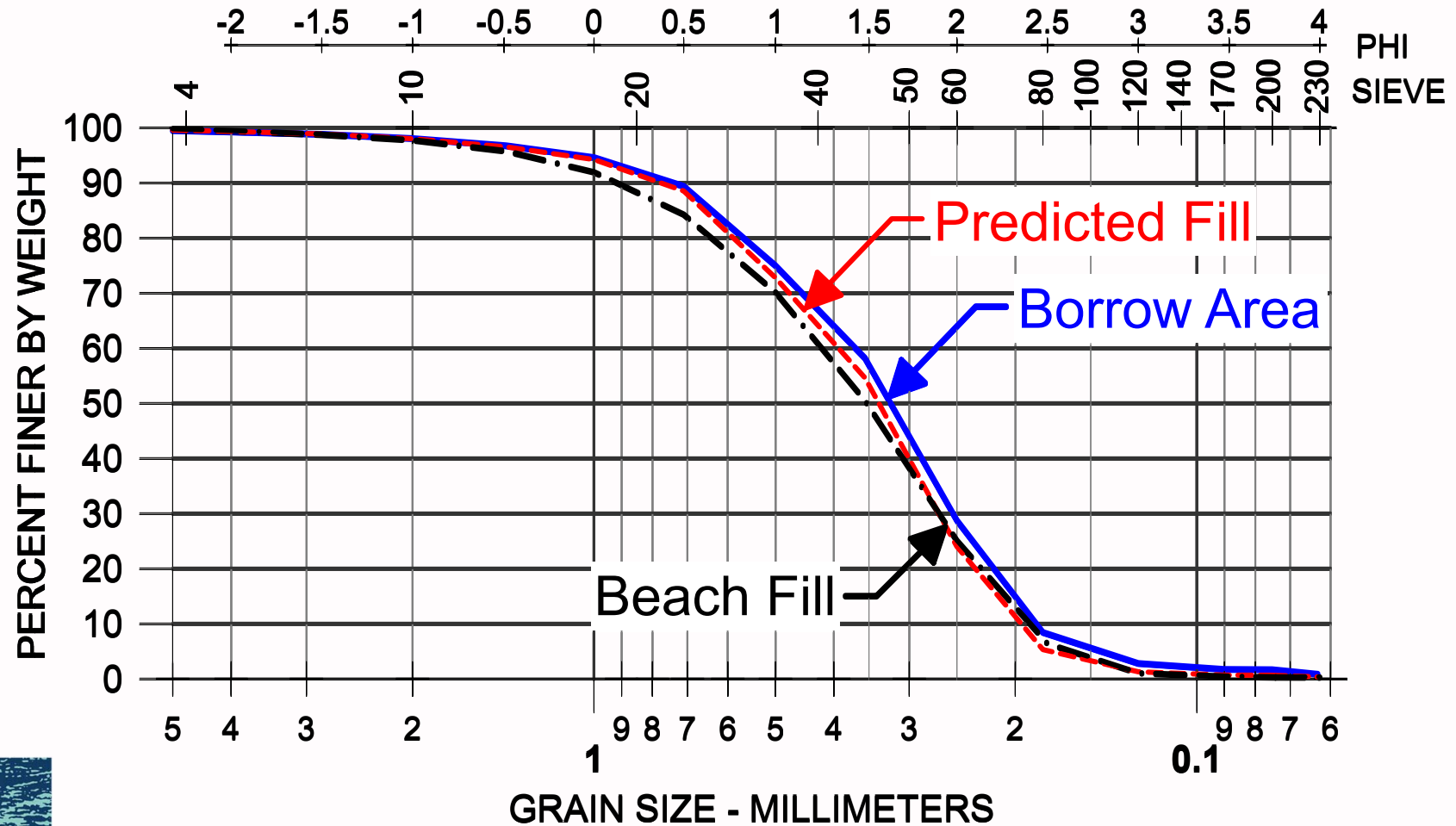
Broward County, FL – 2005-2006

Segment III - BA II



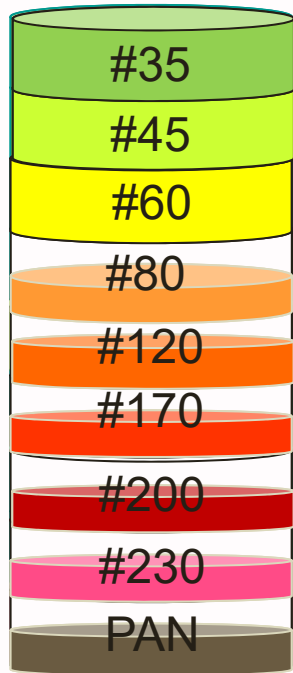
Broward County, FL – 2005-2006

Segment III - BA I



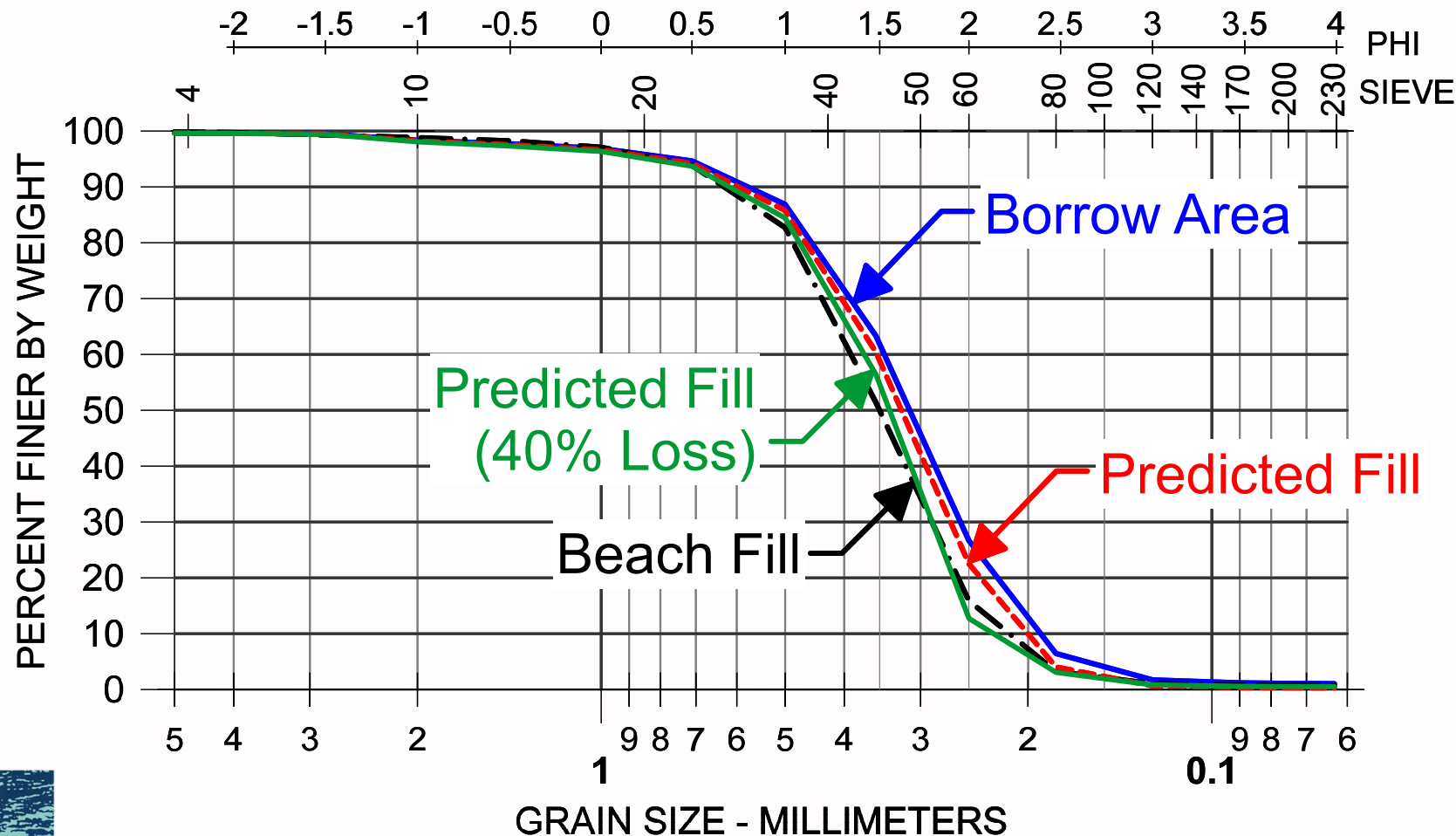
Predicting Sediment Coarsening

Simple Filter



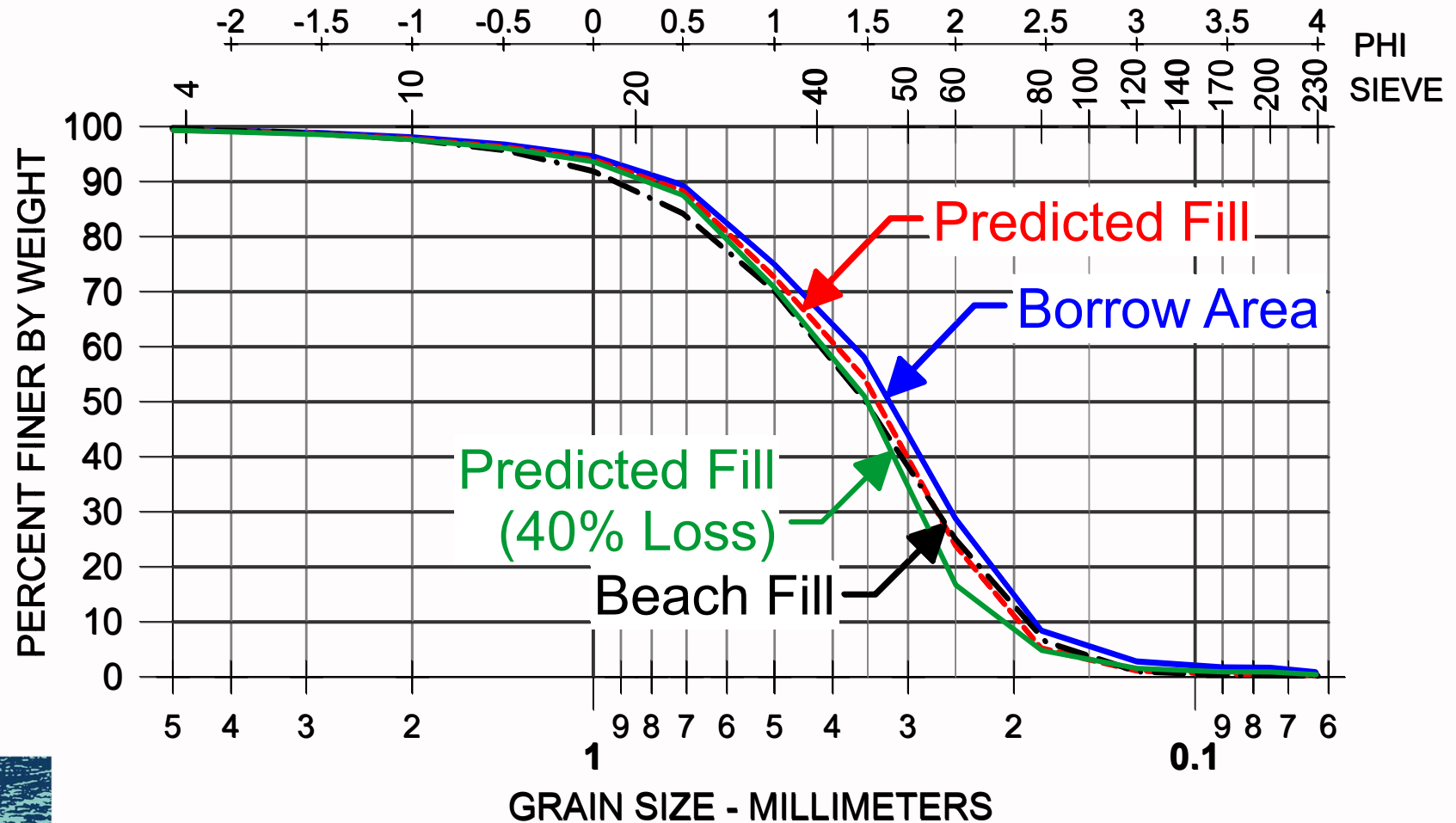
Range of Sizes	Percent Loss	
0.5 – 0.71 mm	0%	➔ 0%
0.35 – 0.5 mm	1%	
0.25 – 0.35 mm	5%	
0.18 – 0.25 mm	16%	➔ 40%
0.13 – 0.18 mm	34%	
0.09 – 0.13 mm	50%	
0.074 – 0.09 mm	60%	
0.063 – 0.074 mm	67%	
< 0.063 mm	74%	

Pensacola, FL 2005-2006



Broward County, FL – 2005-2006

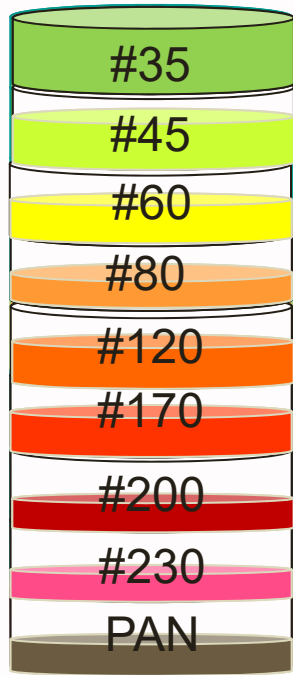
Segment III - BA I



Filter Summary

	Best Predictor	Worst Predictor
No Filter	6%	78%
Fall Velocity Filter	44%	0%
40% Loss Passing #60 Sieve	50%	22%

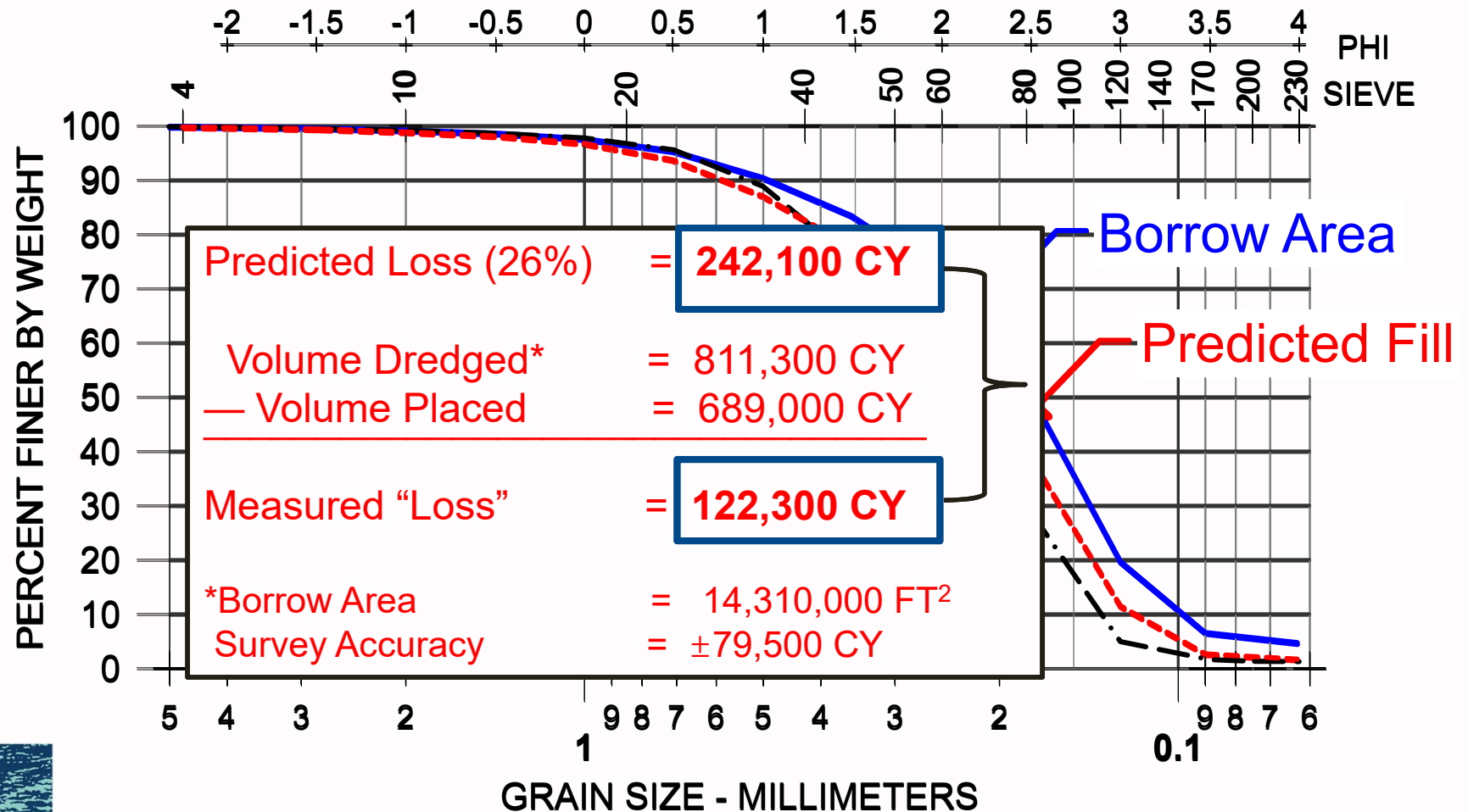
Predicting Sediment Coarsening USACE / ERDC Filter



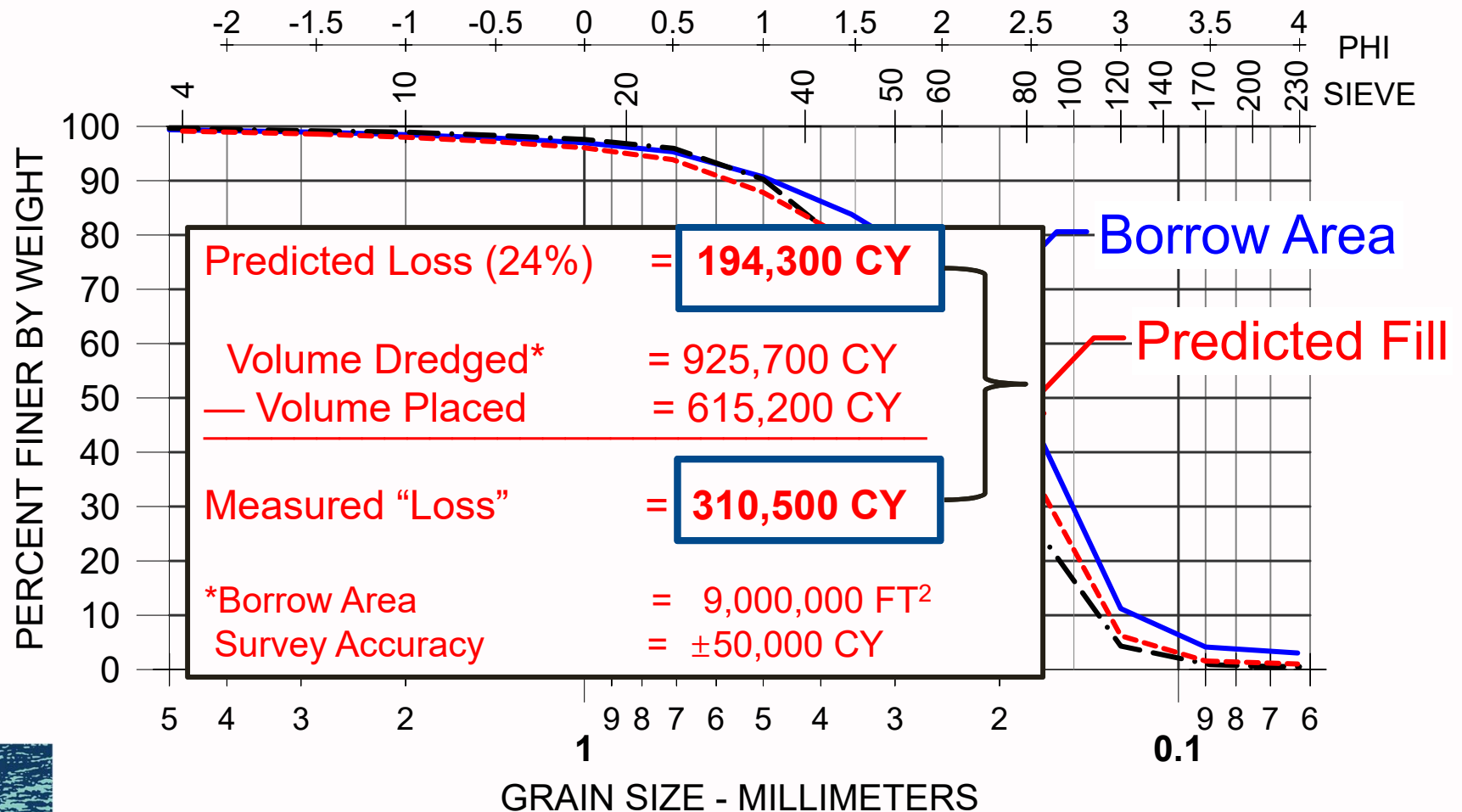
Range of Sizes	Percent Loss Fall Velocity (OAI)	Percent Loss ERDC
0.5 – 0.71 mm	0%	5%
0.35 – 0.5 mm	1%	10%
0.25 – 0.35 mm	5%	15%
0.18 – 0.25 mm	16%	20%
0.13 – 0.18 mm	34%	25%
0.09 – 0.13 mm	50%	30%
0.074 – 0.09 mm	60%	40%
0.063 – 0.074 mm	67%	45%
< 0.063 mm	74%	50%

Fall velocity filter was a better predictor
than USACE filter 75% of the time.

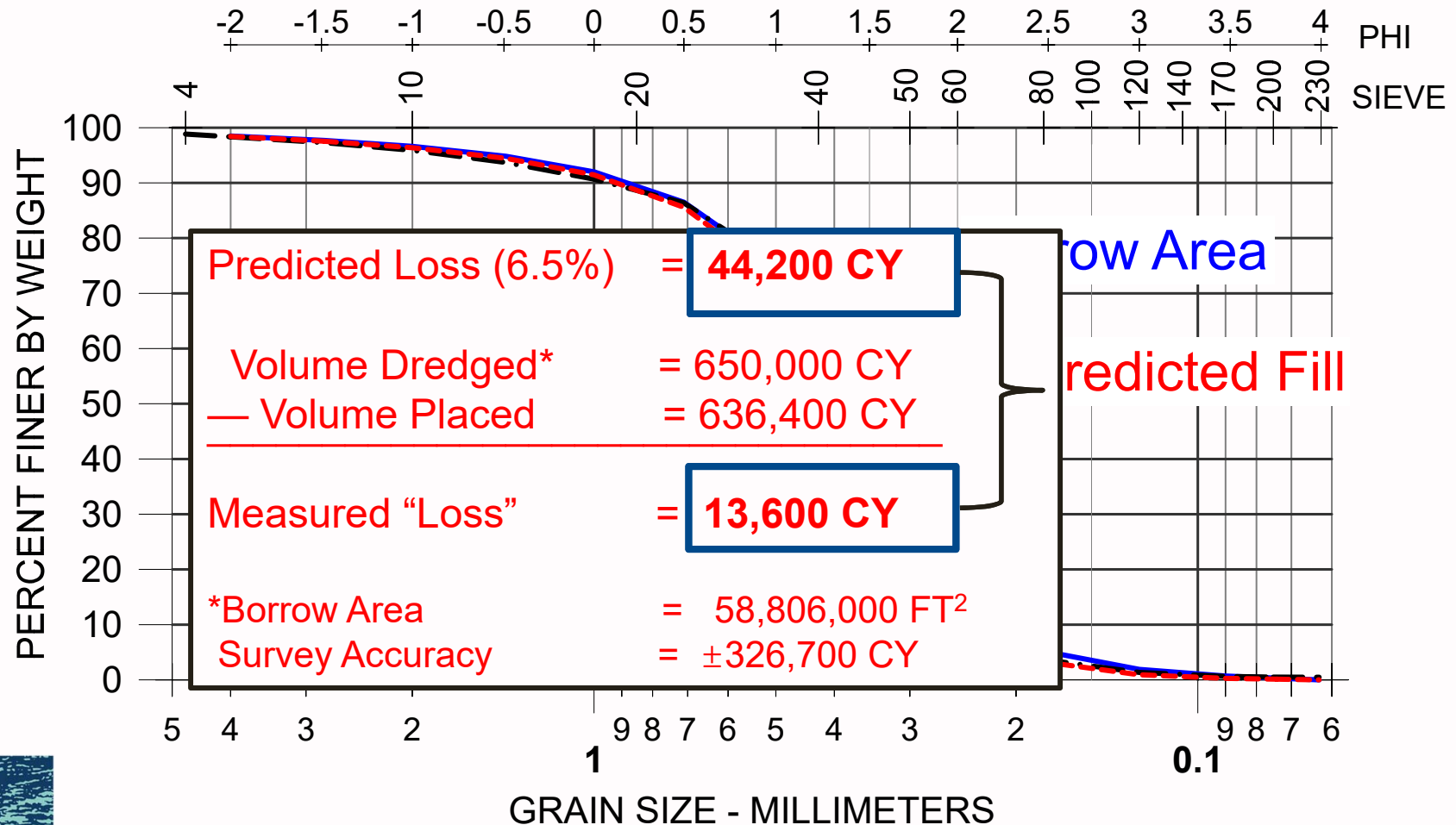
Volume Loss: Duval County, FL – 2011



Volume Loss: Duval County, FL – 2005



Volume Loss: Brevard County, FL – 2010





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SUMMARY

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