Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project:	Y1 Subtidal	**Date Received:**	May 4, 2018
Project #:	18S140	**Sampled By:**	Others
Client :	Wood	**Date Reported:**	June 13, 2018
Source:	Multiple	**Tested By:**	B. goble
MTC Sample#:	Multiple		

CASE NARRATIVE

1. Six samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. The data is provided in summary tables and plots.
4. There were no other noted anomalies in this project.

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Project: Y1 Subtidal
Project #: 18S140
Date Received: May 4, 2018
Date Tested: June 2, 2018

Client: Wood
Sampled by: Others
Tested by: B. goble

Apparent Grain Size Distribution Summary

Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.0	15.6	7.8	3.9	2.0	1.0
LDW-Y1-SU-ENR-CA-CORE	100.0	99.8	78.0	58.1	37.7	17.4	9.6	7.7	6.9	5.5	4.0	2.8	1.9	1.5
	100.0	96.3	76.8	56.5	37.2	17.0	9.2	7.2	6.9	5.3	3.8	2.8	1.8	1.4
	100.0	99.9	78.1	58.0	37.9	18.0	10.2	8.3	6.9	6.3	3.9	2.8	1.9	1.4
LDW-Y1-SU-ENR-CB-CORE	100.0	97.7	77.9	57.6	36.5	15.0	6.8	5.0	4.0	3.1	2.2	1.5	1.0	0.8
LDW-Y1-SU-ENR-CC-CORE	100.0	99.5	80.1	61.5	39.9	16.6	7.2	5.3	4.0	3.1	2.2	1.5	1.0	0.9
LDW-Y1-SU-ENR+AC-CA-CORE	100.0	88.2	75.8	61.0	42.2	22.0	14.1	11.9	11.3	8.3	5.0	3.3	2.2	1.7
LDW-Y1-SU-ENR+AC-CB-CORE	100.0	99.5	79.8	62.0	42.1	24.9	18.7	16.8	14.4	10.6	6.5	4.3	2.9	2.2
LDW-Y1-SU-ENR+AC-CC-CORE	100.0	98.4	84.8	69.4	50.9	30.5	22.4	20.2	17.4	11.7	6.3	4.4	3.1	2.3

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Date Tested: June 2, 2018

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Sampled by: Others
Tested by: B. goble

Apparent Grain Size Distribution Summary

Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10-18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15.6	15.6-7.8	7.8-3.9	3.9-2.0	2.0-1.0	<1.0	<230 (<62)
LDW-Y1-SU-ENR-CA-CORE	22.0	19.9	20.5	20.3	7.8	1.9	0.8	1.4	1.5	1.2	0.9	0.4	1.5	7.7
	23.2	20.3	19.3	20.2	7.8	2.0	0.3	1.6	1.5	1.1	0.9	0.4	1.4	7.2
	21.9	20.1	20.1	19.9	7.7	1.9	1.5	0.6	2.4	1.1	0.9	0.4	1.4	8.3
LDW-Y1-SU-ENR-CB-CORE	22.1	20.3	21.2	21.5	8.2	1.8	1.0	0.9	0.8	0.7	0.5	0.1	0.8	5.0
LDW-Y1-SU-ENR-CC-CORE	19.9	18.6	21.6	23.2	9.5	1.9	1.2	0.9	0.9	0.7	0.5	0.1	0.9	5.3
LDW-Y1-SU-ENR+AC-CA-CORE	24.2	14.8	18.8	20.2	7.9	2.2	0.6	3.0	3.3	1.7	1.1	0.5	1.7	11.9
LDW-Y1-SU-ENR+AC-CB-CORE	20.2	17.8	19.9	17.2	6.2	1.9	2.4	3.8	4.2	2.2	1.4	0.7	2.2	16.8
LDW-Y1-SU-ENR+AC-CC-CORE	15.2	15.4	18.5	20.4	8.1	2.2	2.7	5.7	5.5	1.9	1.3	0.8	2.3	20.2

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Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
LDW-Y1-SU-ENR-CA-CORE	100.0	99.8	78.0	58.1	37.7	17.4	9.6	7.7	6.9	5.5	4.0	2.8	1.9	1.5
	100.0	96.3	76.8	56.5	37.2	17.0	9.2	7.2	6.9	5.3	3.8	2.8	1.8	1.4
	100.0	99.9	78.1	58.0	37.9	18.0	10.2	8.3	6.9	6.3	3.9	2.8	1.9	1.4
AVE	100.0	98.6	77.6	57.5	37.6	17.5	9.7	7.7	6.9	5.7	3.9	2.8	1.9	1.5
STDEV	0.0	1.7	0.6	0.7	0.3	0.4	0.4	0.5	0.0	0.4	0.1	0.0	0.0	0.1
%RSD	0.0	1.7	0.8	1.3	0.8	2.3	4.5	6.1	0.1	7.7	1.6	0.6	1.8	3.6

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
LDW-Y1-SU-ENR-CA-CORE	5/3/2018	5/21/2018	6/2/2018	100.0		9.6
	5/3/2018	5/21/2018	6/2/2018	99.8		9.1
	5/3/2018	5/21/2018	6/2/2018	101.0		10.5
LDW-Y1-SU-ENR-CB-CORE	5/3/2018	5/21/2018	6/2/2018	100.6		6.3
LDW-Y1-SU-ENR-CC-CORE	5/3/2018	5/21/2018	6/2/2018	100.8		6.8
LDW-Y1-SU-ENR+AC-CA-CORE	5/3/2018	5/21/2018	6/2/2018	99.1		14.6
LDW-Y1-SU-ENR+AC-CB-CORE	5/3/2018	5/21/2018	6/2/2018	100.5		19.7
LDW-Y1-SU-ENR+AC-CC-CORE	5/3/2018	5/21/2018	6/2/2018	100.8		18.6

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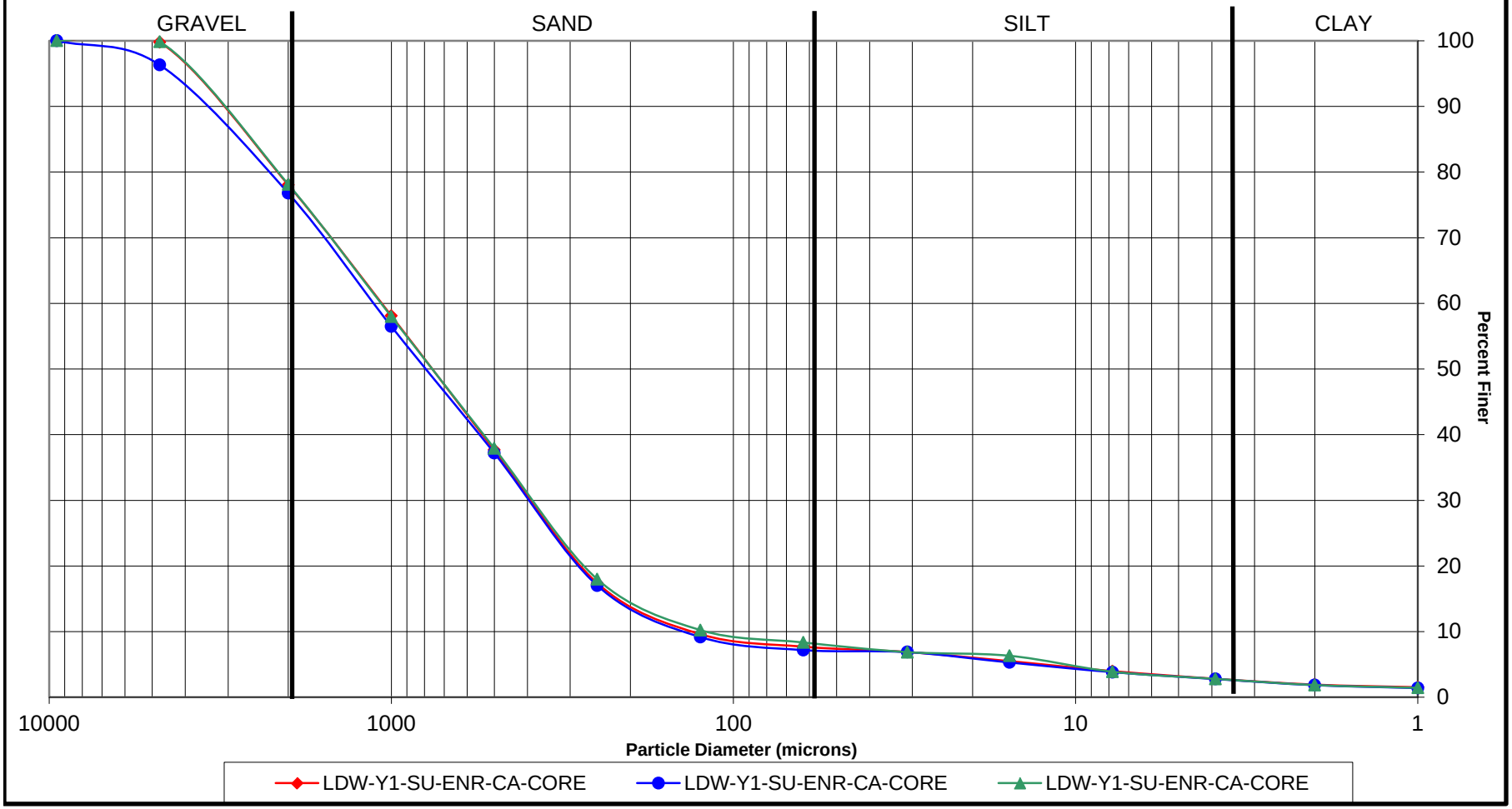
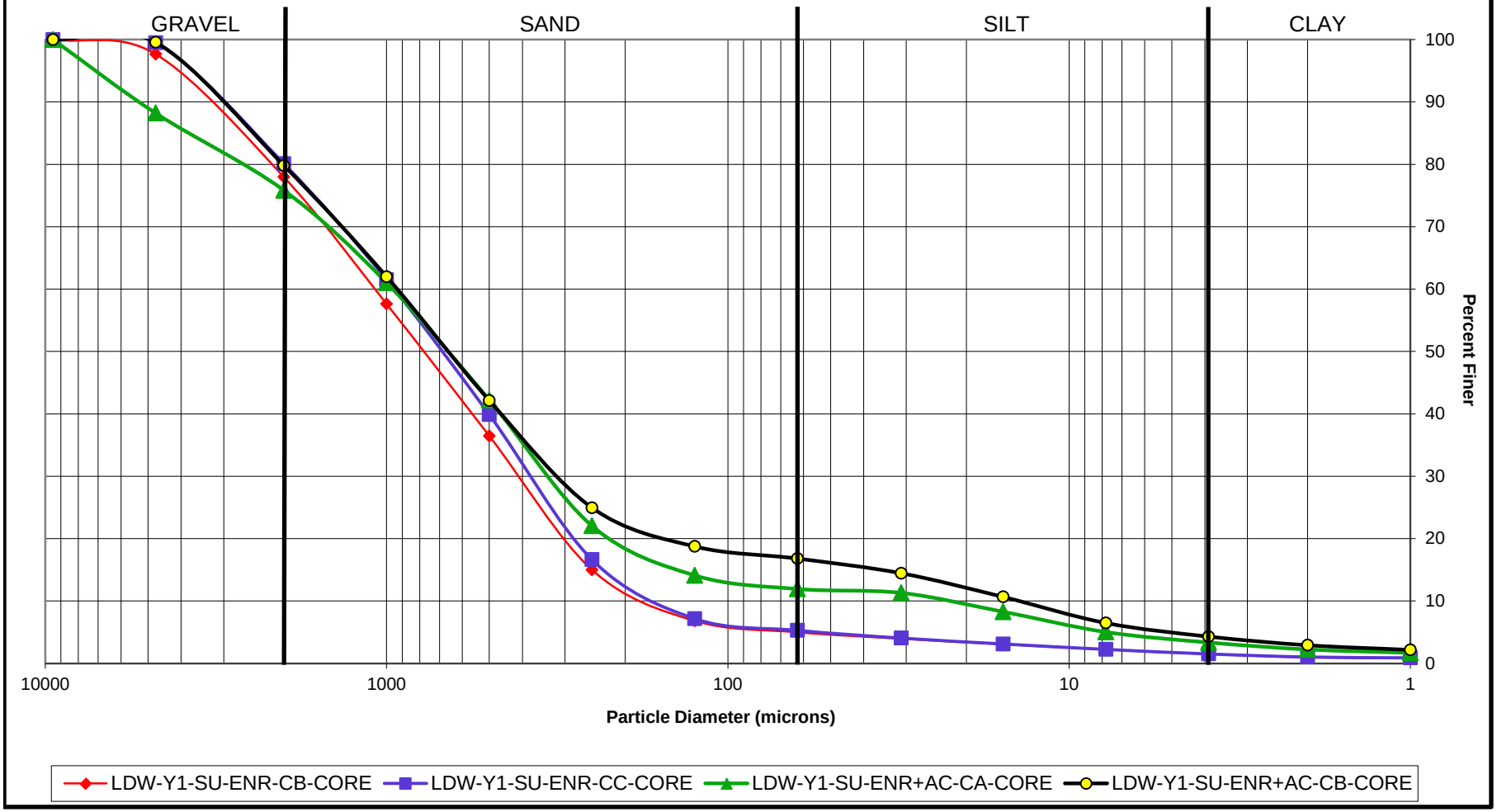
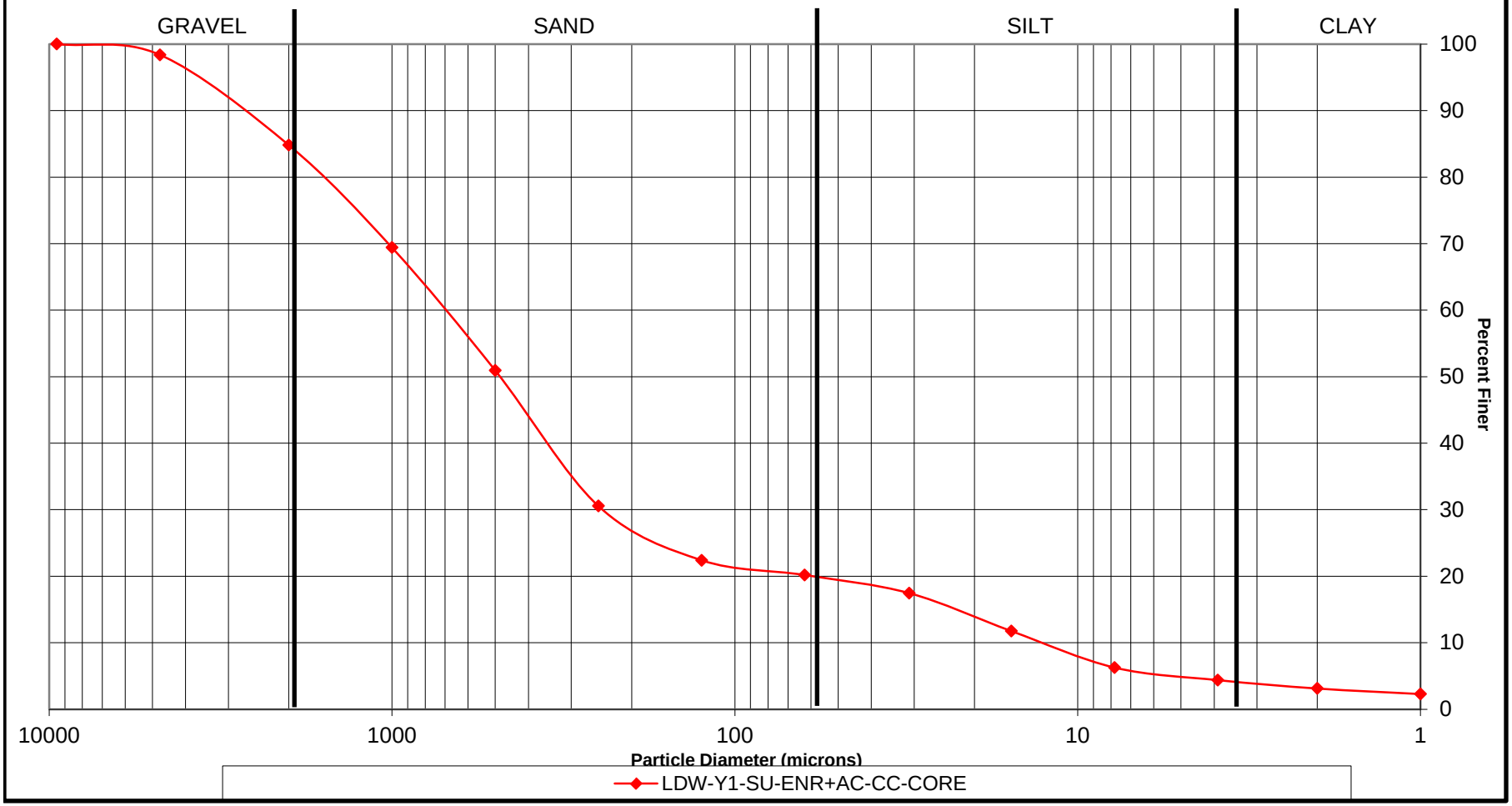
PSEP Grain Size Distribution

Triplicate Sample Plot



PSEP Grain Size Distribution



PSEP Grain Size Distribution