

ECMS 9397 Milford Bushkill #2
Proposed ABR Capping Material
Item 9000-0110

Two Sources:

- MB-2
 - Silty Sand (SM)
 - Material finer than #200 = 37.0%
 - Unit Weight (PTM 106) 117.2 PCF
 - Permeability 6.1×10^{-6}
- Baghouse Fines
 - Silty Clay (CL-ML)
 - Material finer than #200 = 100%
 - Unit Weight (PTM 106) 102.2 PCF
 - Permeability 1.3×10^{-6}



GEO-SCIENCE ENGINEERING CO., INC.

CONSULTING GEOTECHNICAL ENGINEERS

January 12, 2016

Leeward Construction, Inc.
9 Collan Park
Honesdale, PA 18431

Attention: Mr. Aaron Pickarski

Reference: Proposed ABR Capping Material
ECMS 9397
GSE Project No. 15330

Mr. Pickarski:

As per your request we have completed laboratory testing on the **MB-2 and Baghouse Fines** samples delivered to our office for the above referenced project.

These samples were analyzed for ABR cap material according to section 206.2 of the Pub 408 and the project special provisions. Additionally each sample was analyzed for permeability according to ASTM D5856; falling head method. Test reports are attached below for your review.

Should you have any questions or require additional information please do not hesitate to contact our office.

Respectfully Submitted,
Geo-Science Engineering Co., Inc

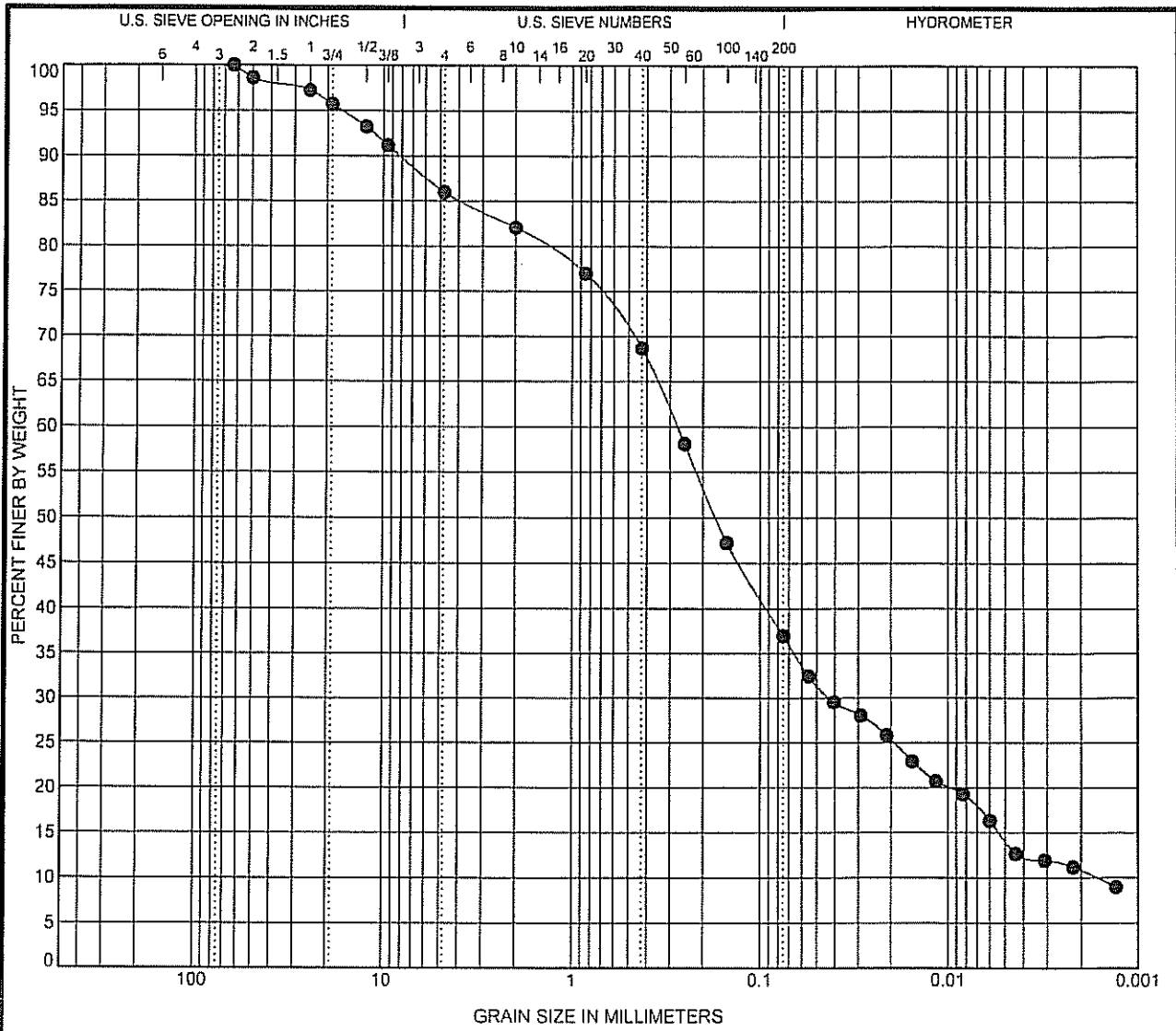
Jeremy C. Wint
Director of Laboratory Services

Leeward Construction, Inc.
9 Collan Park
Honesdale, PA 18431
GSE Project No. 15330

LABORATORY REPORT

Material Tested:	ABR Cap Material
Supplier	Leeward
Date:	January 12, 2016
Sample Identification	MB-2

Material Finer than #200 (%)	37.0
Unit Weight (PTM 106)	117.2 lbs./ft ³
Permeability @ 98%	6.1 x 10 ⁻⁶



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification			LL	PL	PI	Cc	Cu
● MB-2	S-1	SILTY SAND(SM)			17	18	NP	3.96	165.77

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Fines
● MB-2	S-1	63	0.275	0.042	0.002	14.0	49.0	37.0

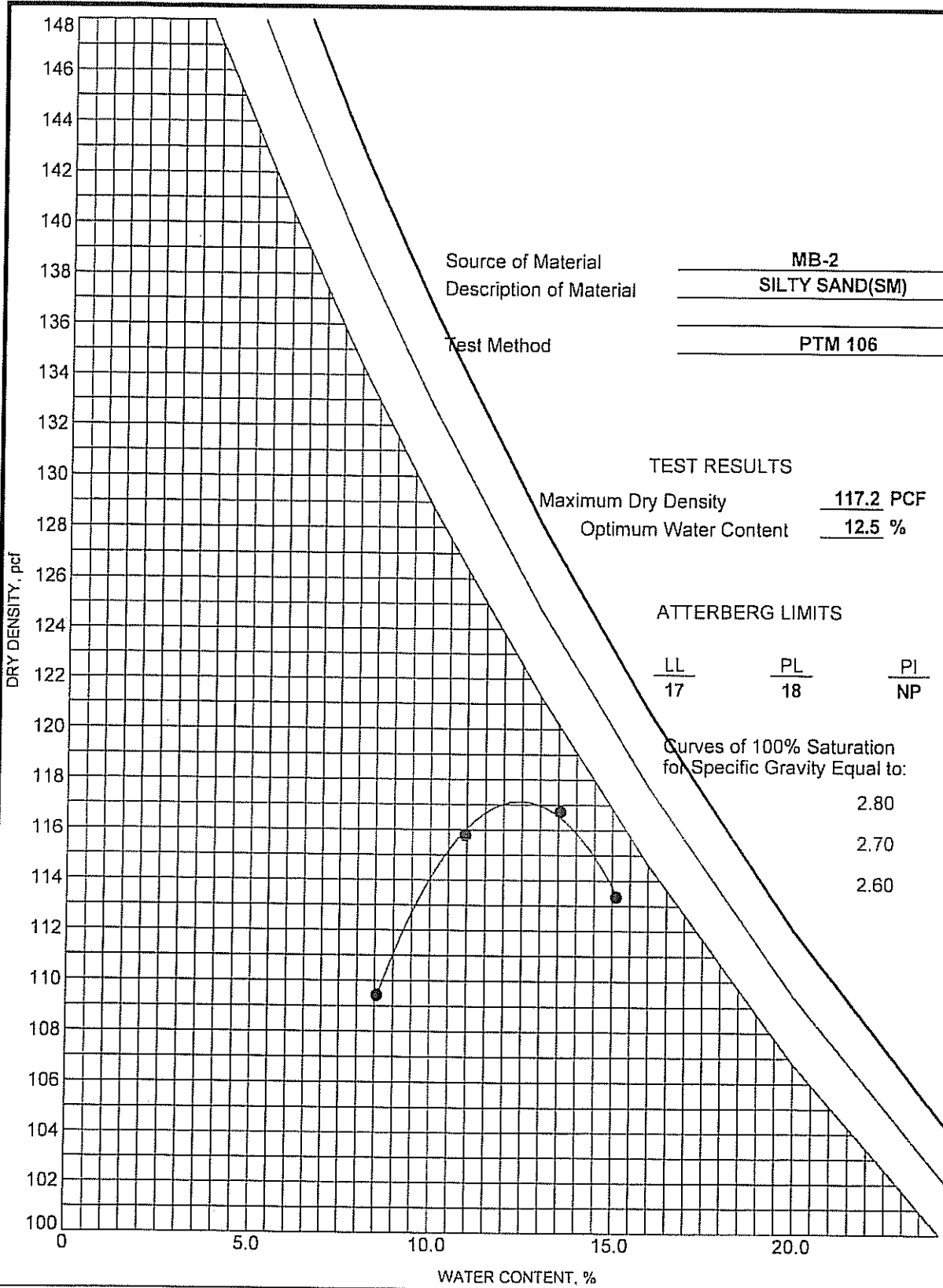
CSSE GRAIN SIZE 15330.GPJ LAB STANDARD.GDT 1/12/16



Geo-Science Engineering Co., Inc.
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 Jessup, PA 18434
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GRAIN SIZE DISTRIBUTION

Project: ECMS 9397
 Location: Leeward
 Number: 15330



Source of Material MB-2
 Description of Material SILTY SAND(SM)
 Test Method PTM 106

TEST RESULTS
 Maximum Dry Density 117.2 PCF
 Optimum Water Content 12.5 %

ATTERBERG LIMITS

<u>LL</u>	<u>PL</u>	<u>PI</u>
17	18	NP

Curves of 100% Saturation
 for Specific Gravity Equal to:

- 2.80
- 2.70
- 2.60

U.S. COMPACTION 15330.GPJ U.S. LAB.GDT 11/2/16



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MOISTURE-DENSITY RELATIONSHIP

Project: ECMS 9397
 Location: Leeward
 Number: 15330