



GEORGETOWN SAND & GRAVEL

P.O. Box 127 Georgetown PA 15043

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January 1, 2023

PennDOT Ref. #: GRCWVC14
Material Type: 2A Limestone

To Whom It May Concern:

This letter is to verify that Georgetown Sand & Gravel, Georgetown, PA produces the material provided for your use. The above referenced material meets the requirements of PennDOT Publication 408, Section 703 for aggregate and ASTM C33 for concrete aggregates.

Sincerely,

Caleb T. Bryan

David T. Giehll

Quality Test Report

BMG Research & Development Center

3507 Neville Road, Pittsburgh PA 15225



Plant Georgetown Sand & Gravel - GSG04A14
Product 2A Limestone
Source Greer Limestone - GRCWVC14
Specification PaDOT 408 Section 703

Sample Information

Sample No	Average	Weather	-
Start Date	5/1/2022	Temp	-
Finish Date	12/27/2022	Split Sample	<input type="checkbox"/>
Sampled By	Greg Sico	Resample	<input type="checkbox"/>
Tested By	David Giehl	Lot/Sublot	-
Type	Production Sample	Quantity	50 lbs
Method	Stockpile		

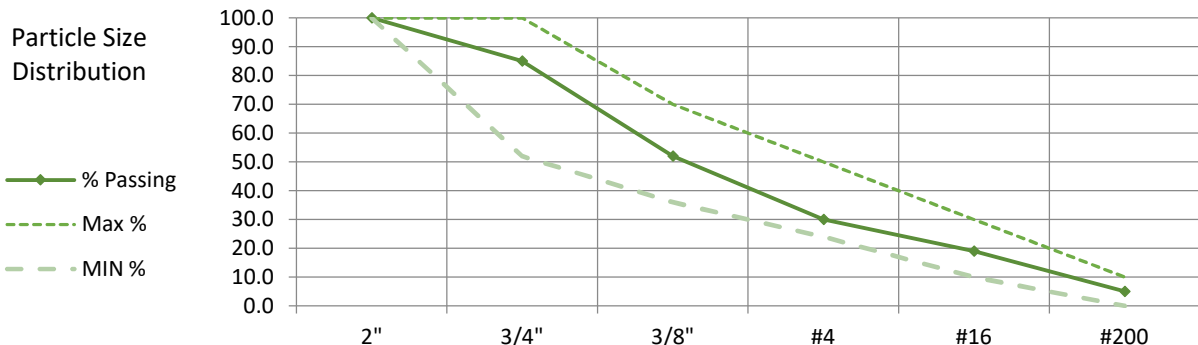
Gradation Results

Units	Moist Mass	Dry Mass	Moisture %	Wash ST	Wash End	Wash Loss %
lbs	36.50	35.45	2.95%	10.850	10.355	4.56%

Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification %
2"	0.00	0.00	0.0	0.0	100.0	100	100
1 1/2"	0.00	0.00	0.0	0.0	100.0	-	-
3/4"	5.32	5.32	15.0	15.0	85.0	76	52
1/2"	8.15	13.47	23.0	38.0	62.0	-	-
3/8"	3.55	17.02	10.0	48.0	52.0	53	36
#4	7.80	24.82	22.0	70.0	30.0	37	24
#16	3.90	28.71	11.0	81.0	19.0	20	10
#200	4.96	33.68	14.0	95.0	5.0	5	0

Other Test Results

Test Name	Date	Result	Unit	Target	Specification %
Wash Loss (#200)	AVG	4.56%	%	5	0



LABORATORY COMPACTION CHARACTERISTICS OF SOIL

CORRECTION OF UNIT WEIGHT AND WATER CONTENT FOR SOILS CONTAINING OVERSIZE PARTICLES - ASTM D4718

Client	Neville Aggregates	Boring	N/A
Client Project	Greer	Depth	N/A
Project No.	45468	Sample	Greer
		Lab Sample No.	45468001
Visual Description:	Gray Gravelly Sand with Silt		

WET DENSITY					TEST PARAMETERS	
Mold ID	1	1	1	1	Test Method	ASTM D698
Compaction Point #	1	2	3	4	Compaction Energy	Standard
Wt. Mold & WS, gm.	11147	11434	11490	11380	Test Procedure	C (Rock Corr.)
Wt. Mold, gm.	6448	6448	6448	6448	Mold Diameter, in	6
Wt. WS, gm.	4699	4986	5042	4932	Compacted Layers	3
Mold Volume, cc	2122	2122	2122	2122	Blows Per Layer	56
Wet Density, gm./cc	2.21	2.35	2.38	2.32	Rammer Weight / Fall	5.5 lbs / 12 in.
Wet Density, pcf	138.2	146.6	148.3	145.0	Size of Material Used	-3/4" Sieve
					Use: 5% > 3/4" < 30%	
WATER CONTENT					OVERSIZE PARTICLE CORRECTION	
Tare Number	756	740	738	206	Oversize Material, % (+3/4" Sieve) =	6.7
Wt. Tare & WS, gm.	1317.9	1699.4	1422.8	1867.2	W.C. of Oversize Rock % (Measured) =	.8
Wt. Tare & DS, gm.	1238.3	1570.8	1290.8	1660.8	Gs of Oversize Rock (Measured) =	2.69
Wt. Tare, gm.	183.6	188.1	177	181	Percent Fines, % (-3/4" Sieve) =	93.3
Water Content, %	7.5	9.3	11.9	13.9	W.C. of Finer Material, % (-3/4" Sieve) =	1.4
DRY DENSITY vs. WATER CONTENT					SAMPLE SUMMARY	
LABORATORY TEST VALUES						
Water Content, %	7.5	9.3	11.9	13.9	Lab Optimum Water Content, %	10.1
Dry Density, pcf	128.5	134.2	132.6	127.3	Lab Maximum Dry Density, pcf	134.6
FIELD CORRECTED TEST VALUES						
Water Content, %	7.1	8.7	11.1	13.1	Field Optimum Water Content, %	9.4
Dry Density, pcf	130.5	136.0	134.5	129.4	Field Maximum Dry Density, pcf	136.4
Note: Maximum Density and Optimum Water Content reported from estimated best fit smooth curve!						
<p>The graph plots Dry Density (pcf) on the y-axis (ranging from 125.0 to 140.0) against Water Content (%) on the x-axis (ranging from 6 to 15). It features two sets of data points: laboratory data (black dots) and field data (green dots). Each set has a corresponding best-fit curve. A horizontal dashed red line indicates the 95% Field Maximum Dry Density (MDD) at 129.6 pcf. Vertical dashed lines connect the field data points to the x-axis. A diagonal dashed line represents the 100% relative compaction line.</p>						
Note: Compacted with automatic compaction machine						

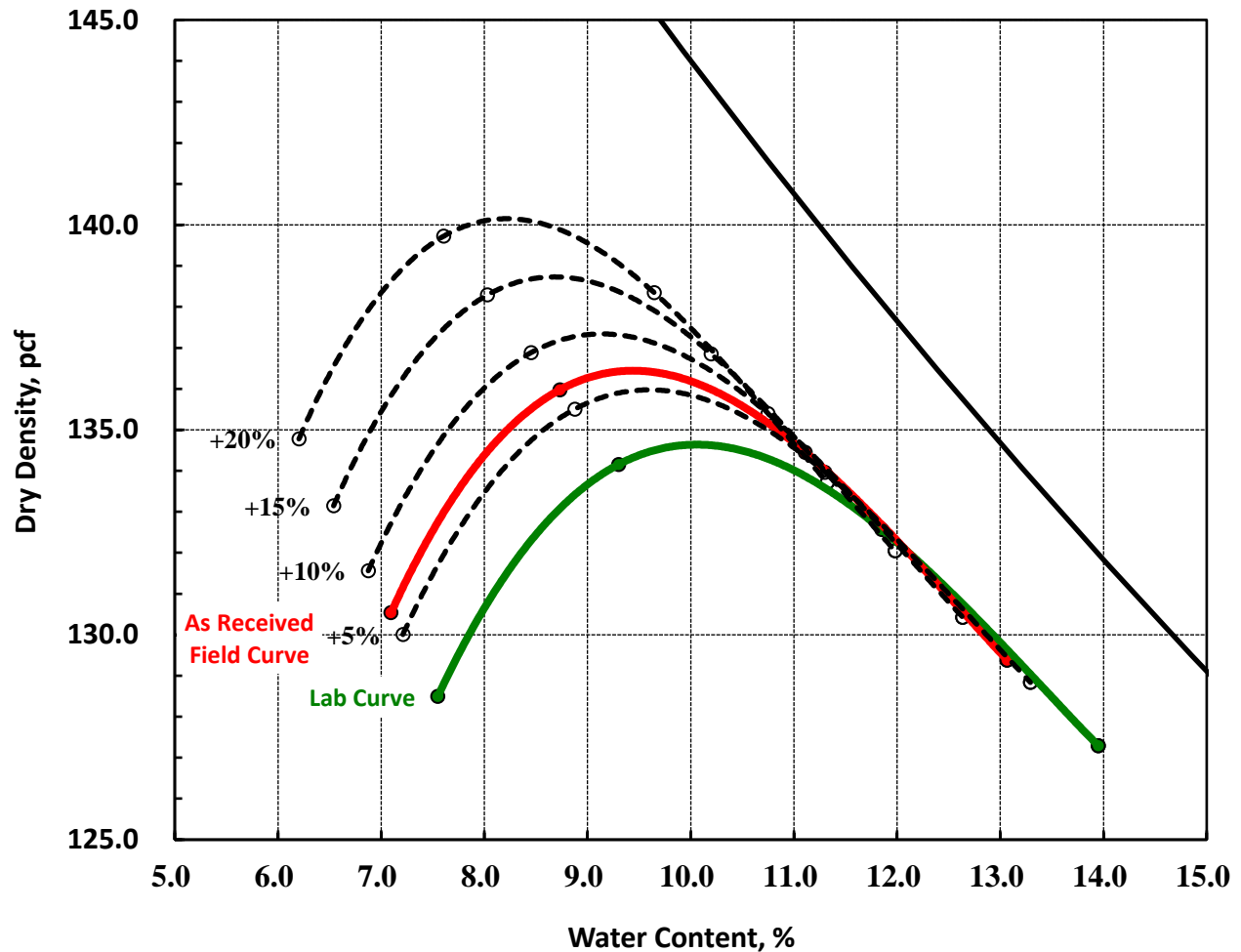
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Client	Neville Aggregates	Boring	N/A
Client Project	Greer	Depth	N/A
Project No.	45468	Sample	Greer
		Lab Sample No.	45468001
Description: Gray Gravelly Sand with Silt			

As-Received WC, %	1.4	Lab Optimum WC, %	10.1	Field Optimum WC, %	9.4
As-Received Coarse Material, %	6.7	Lab Max. Dry Density,	134.6	Field Max. Dry Density, pcf	136.4

Rock Correction Family of Curves for Different Percentages of +3/4" Material in 5 Percent Increments



SPECIFIC GRAVITY AND ABSORPTION OF OVERSIZE FRACTION

TEST VALUES	SYMBOL
Weight of Oven-Dry Test Sample In Air + Tare Weight, gm	4186.9 A + t
Tare Weight, gm	658.6 t
Weight of Oven-Dry Test Sample In Air, gm	3528.3 A
Weight of Saturated-Surface-Dry Sample In Air, gm	3549.2 B
Weight of Saturated Test Sample In Water, gm	2235.2 C

SAMPLE SUMMARY

Bulk Specific Gravity	2.69	A / (B - C)
Bulk Specific Gravity (Saturated-Surface-Dry)	2.70	B / (B - C)
Apparent Specific Gravity	2.73	A / (A - C)
Absorption, %	0.6%	(B - A) / A

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Client	Neville Aggregates	Boring	N/A
Client Project	Greer	Depth	N/A
Project No.	45468	Sample	Greer
		Lab Sample No.	45468002
Visual Description:	Gray Gravelly Sand with Silt		

WET DENSITY					TEST PARAMETERS	
Mold ID	1	1	1	1	Test Method	ASTM D1557
Compaction Point #	1	2	3	4	Compaction Energy	Modified
Wt. Mold & WS, gm.	11297	11546	11591	11475	Test Procedure	C (Rock Corr.)
Wt. Mold, gm.	6448	6448	6448	6448	Mold Diameter, in	6
Wt. WS, gm.	4849	5098	5143	5027	Compacted Layers	5
Mold Volume, cc	2122	2122	2122	2122	Blows Per Layer	56
Wet Density, gm./cc	2.29	2.40	2.42	2.37	Rammer Weight / Fall	10 lbs / 18 in.
Wet Density, pcf	142.6	149.9	151.2	147.8	Size of Material Used	-3/4" Sieve
					Use: 5% > 3/4" < 30%	
WATER CONTENT					OVERSIZE PARTICLE CORRECTION	
Tare Number	201	890	540	860	Oversize Material, % (+3/4" Sieve) =	6.7
Wt. Tare & WS, gm.	1208.3	1516.4	1603	1875.9	W.C. of Oversize Rock % (Measured) =	.8
Wt. Tare & DS, gm.	1160.6	1431.9	1491.7	1708.9	Gs of Oversize Rock (Measured) =	2.69
Wt. Tare, gm.	181.1	187.5	196.3	188.7	Percent Fines, % (-3/4" Sieve) =	93.3
Water Content, %	4.9	6.8	8.6	11.0	W.C. of Finer Material, % (-3/4" Sieve) =	1.4
DRY DENSITY vs. WATER CONTENT					SAMPLE SUMMARY	
LABORATORY TEST VALUES						
Water Content, %	4.9	6.8	8.6	11.0	Lab Optimum Water Content, %	7.2
Dry Density, pcf	136.0	140.4	139.3	133.2	Lab Maximum Dry Density, pcf	140.5
FIELD CORRECTED TEST VALUES						
Water Content, %	4.6	6.4	8.1	10.3	Field Optimum Water Content, %	6.8
Dry Density, pcf	137.7	141.9	140.9	135.1	Field Maximum Dry Density, pcf	142.1
<p><i>Note: Maximum Density and Optimum Water Content reported from estimated best fit smooth curve!</i></p>						
<p>The graph plots Dry Density (pcf) on the y-axis (ranging from 130.0 to 145.0) against Water Content (%) on the x-axis (ranging from 3 to 12). Laboratory data points are shown as black dots with a solid black best-fit curve. Field data points are shown as green dots with a solid green best-fit curve. Vertical dashed lines indicate the maximum dry density for both: 140.5 pcf for laboratory (at 7.2% water content) and 142.1 pcf for field (at 6.8% water content). A horizontal red dashed line indicates the 95% Field MDD at 135.0 pcf. A diagonal dashed line is also present in the upper right quadrant of the graph.</p>						
<p><i>Note: Compacted with automatic compaction machine</i></p>						

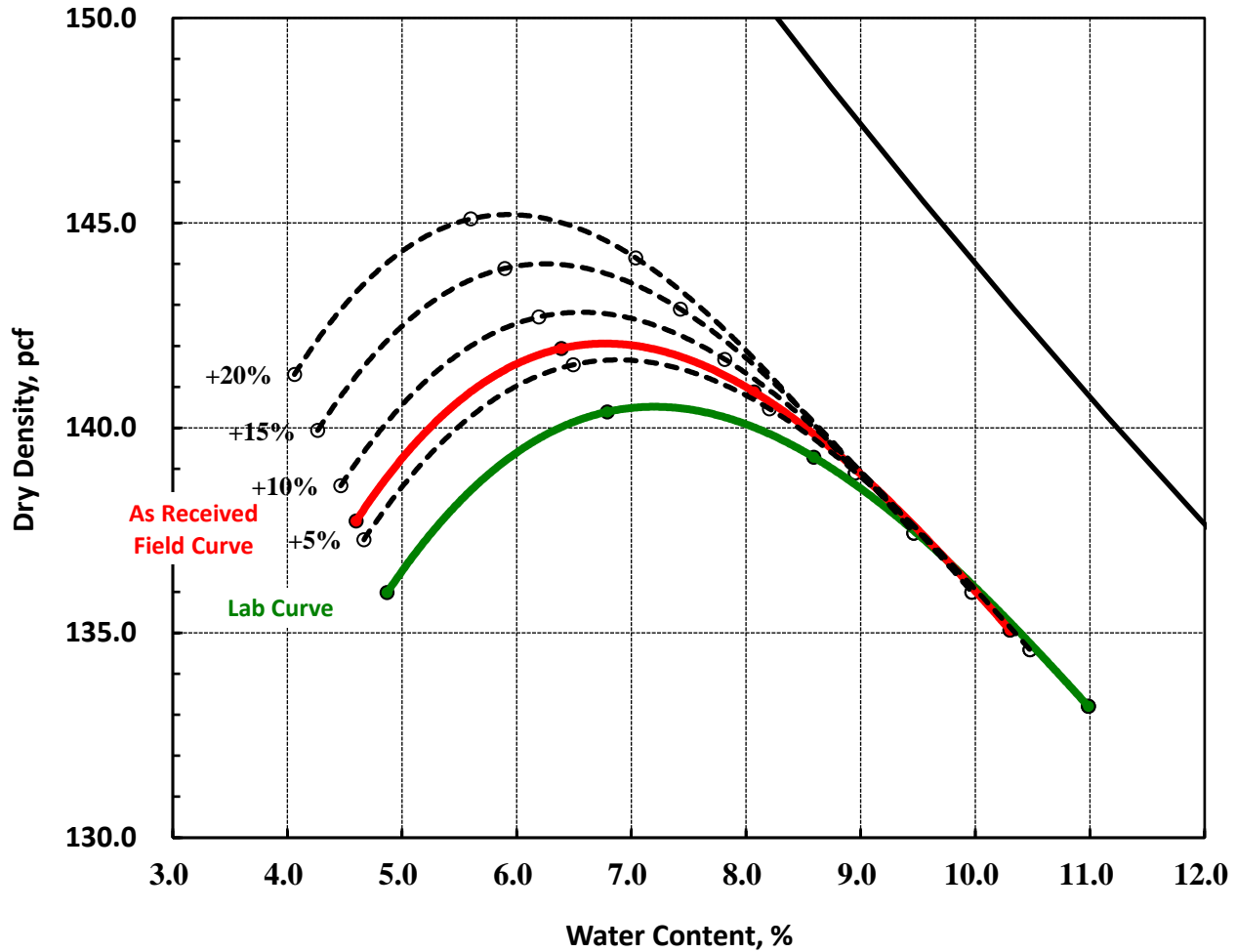
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As-Received WC, %	1.4	Lab Optimum WC, %	7.2	Field Optimum WC, %	6.8
As-Received Coarse Material, %	6.7	Lab Max. Dry Density,	140.5	Field Max. Dry Density, pcf	142.1

Rock Correction Family of Curves for Different Percentages of +3/4" Material in 5 Percent Increments



SPECIFIC GRAVITY AND ABSORPTION OF OVERSIZE FRACTION

TEST VALUES	SYMBOL
Weight of Oven-Dry Test Sample In Air + Tare Weight, gm	4186.9 A + t
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Weight of Oven-Dry Test Sample In Air, gm	3528.3 A
Weight of Saturated-Surface-Dry Sample In Air, gm	3549.2 B
Weight of Saturated Test Sample In Water, gm	2235.2 C

SAMPLE SUMMARY

Bulk Specific Gravity	2.69	A / (B - C)
Bulk Specific Gravity (Saturated-Surface-Dry)	2.70	B / (B - C)
Apparent Specific Gravity	2.73	A / (A - C)
Absorption, %	0.6%	(B - A) / A