GRANITE ENGINEERING GROUP

January 31, 2022

Project No. 221-123

Mr. Matt Bustamante
Colorado Aggregate Recycling
8900 CO-93, Unit A
Golden, CO 80403

Re: Physical Properties Testing
Crushed Concrete and Recycled Asphalt
Project Number-221-123

Dear Mr. Bustamante:

This report presents results of physical properties testing performed on materials delivered to our office from the Colorado Aggregate Recycling Yard. Representative samples were identified as a Recycled Asphalt product and Crushed Concrete from the South plant Stockpile. Testing was performed to determine the material's compliance with Colorado Department of Transportation (CDOT) specifications. The following testing was performed in general conformance with the applicable standards.

Recycled Asphalt	Crushed Concrete
Material Finer Than No. 200 Sieve by Washing	Material Finer Than No. 200 Sieve by Washing
Sieve Analysis	Sieve Analysis
Modified Proctor (AASHTO T180)	R-Value (ASTM D2884) performed by ATT
	Los Angeles Abrasion (AASHTO T96) Performed by ATT
	Modified Proctor (AASHTO T180)

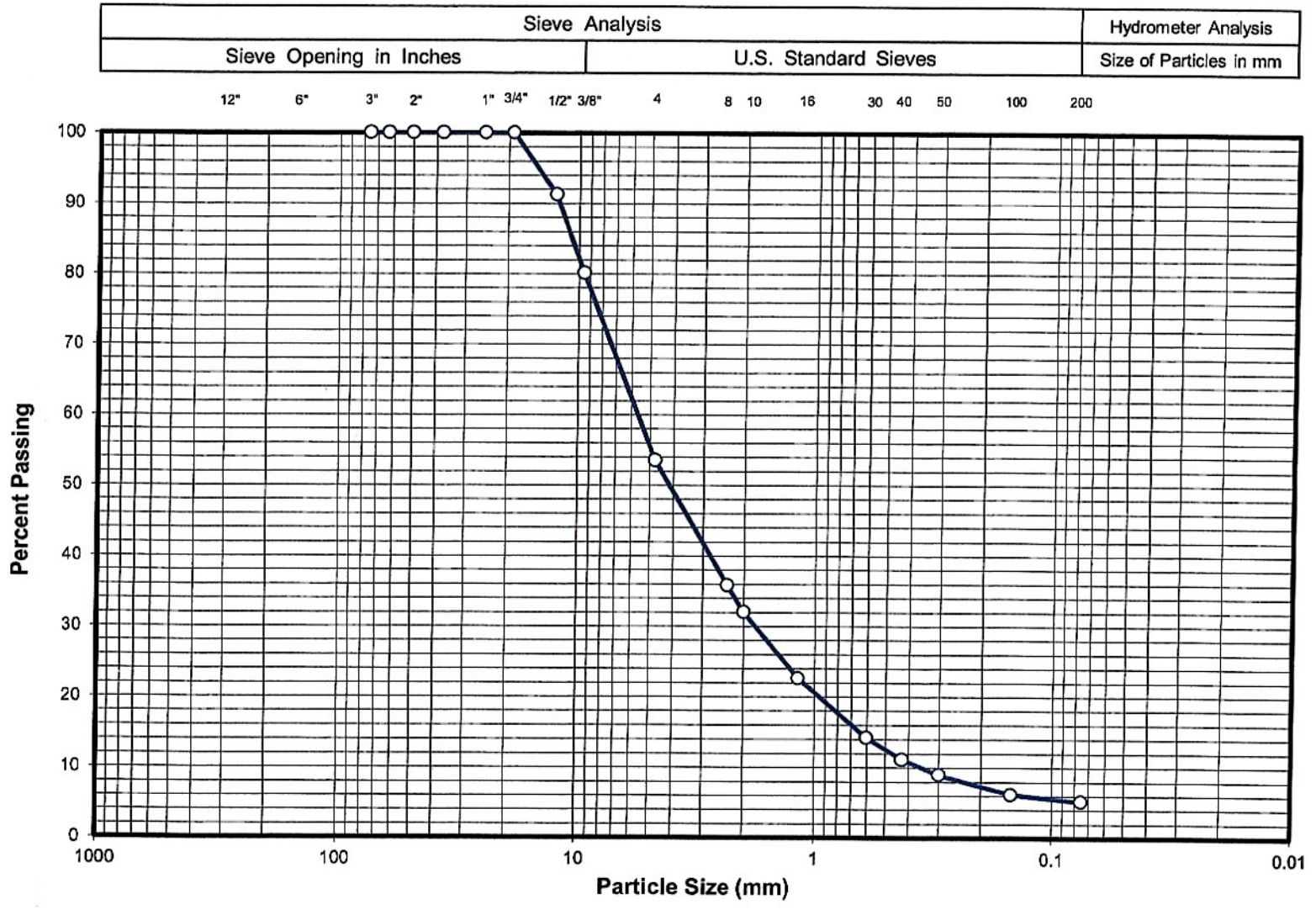
A summary of the test results is attached. If you have any questions regarding this report, please call.

Respectfully submitted,
Granite Engineering Group, Inc.

John Ibarra
Construction Manager

Hai Ming Lim, PE
Project Manager

COLORADO LICENSED
HAI MING LIM
51650
1-31-22
PROFESSIONAL ENGINEER



Sieve Size	% Passing
3"	100
2 ½"	100
2"	100
1 ½"	100
1"	100
¾ "	100
½"	91
⅜"	80
#4	53
#50	9
#100	6
#200	5

Gravel (%)	47	LL	NV	Project Name:	CAG On Call Testing
Sand (%)	48	PL	NP	Sample ID:	G-129
Fines (%)	5	PI	NP	Sample Depth (ft.):	Stockpile
Sample Description:	Black Well Graded Sand with Silt & Garvel (RAP)				

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SIEVE ANALYSIS

Drawn By:	KAL	Project No.:	221-123
Checked By:	JI		
Date:	12/29/21	Figure No.:	-

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WORKSHEET FOR SOIL INDEX and MOISTURE DENSITY

Project No:	221-123	Project Name:	CAG on Call Testing		
Sampled by:	Colo. Agg. Rec.	Date Sampled:	12/23/2021	Date Tested:	12/27/2021
Lab No:	G-129	Depth (ft):	Stockpile	Location:	S. Plant Stockpile
Tested by:	K. LeBron		Checked by:	J. Ibarra	
Soil Description:	Black Well-Graded Sand w/ Silt & Gravel (RAP)				

Tests Performed: ☑ Full Soil Class ☐ Gradation ☐ -200 Wash ☐ Moisture ☐ Atterberg ☐ Unit Wt.

Sieve Analysis (ASTM D 421, C 136 & AASHTO T 27)

Sieve Size in. / #	Sieve Size mm.	Accum. Wt., (g)	% Retained	% Passing	Spec's.
3"+	75	0.0	0	100	
2-1/2"	63	0.0	0	100	
2"	50	0.0	0	100	
1-1/2"	37.5	0.0	0	100	
1"	25	0.0	0	100	
3/4"	19	0.0	0	100	
1/2"	12.5	90.3	9	91	
3/8"	9.5	204.9	20	80	
#4	4.75	478.5	47	53	
#8	2.360	660.5	64	36	
#10	2.000	699.7	68	32	
#16	1.180	795.9	77	23	
#30	0.600	882.6	86	14	
#40	0.425	914.2	89	11	
#50	0.300	936.5	91	9	
#100	0.150	964.9	94	6	
#200	0.075	975.5	95	5.2	
Pan		1028.8			
Oven dry Weight		1028.8			
Oven dry weight		1028.8			

Wash - #200 (D 1140, C 117 & T 11) & Moisture Content (D 2216 & T 265)

Dish I.D.	Ralph
Dish wt. (g)	1024.6
Original wt. of soil + dish (g)	2076.7
Oven dry wt. of soil + dish (g)	2053.4
If Split, Dish+Pre-wash Soil (g)	
Wash oven dry wt. of soil + dish (g)	2000.3
% Moisture Content	**2.3%**
% Wash - #200	**5.2%**

Sieve Samples Dried Separately? ☐

Pan Wt. (g)	
Pan + Wet Soil Wt. (g)	
Pan + Dry Soil Wt. (g)	
Pan + Dry Wash Soils (g)	

Unit Weight (By Volume)

Height (in)	Diameter (in)	Moist Weight(g)

One Point Method	Liquid Limit			Plastic Limit	
Blow Counts (20-30)					
Tin ID					
Tin Wt. (g)					
Tin+Wet Soil Wt. (g)					
Tin+ Dry Soil Wt. (g)					
Wt. of Water (g)					
Wt. of Dry Soil (g)					
Moisture Content			PL(s)	NP	

Moist Unit Weight (pcf)

Dry Unit Weight (pcf)

Liquid Limit	NV		Plastic Limit	NP	Plastic Index	NP

Gravel (%)	47	Sand (%)	48	Fines (%)	5

CLASSIFICATION:	AASHTO:	A-1-a	(0)	USCS:	SW-SM

Observation:

Revision: 12-2-18

MOISTURE - DENSITY RELATIONSHIP

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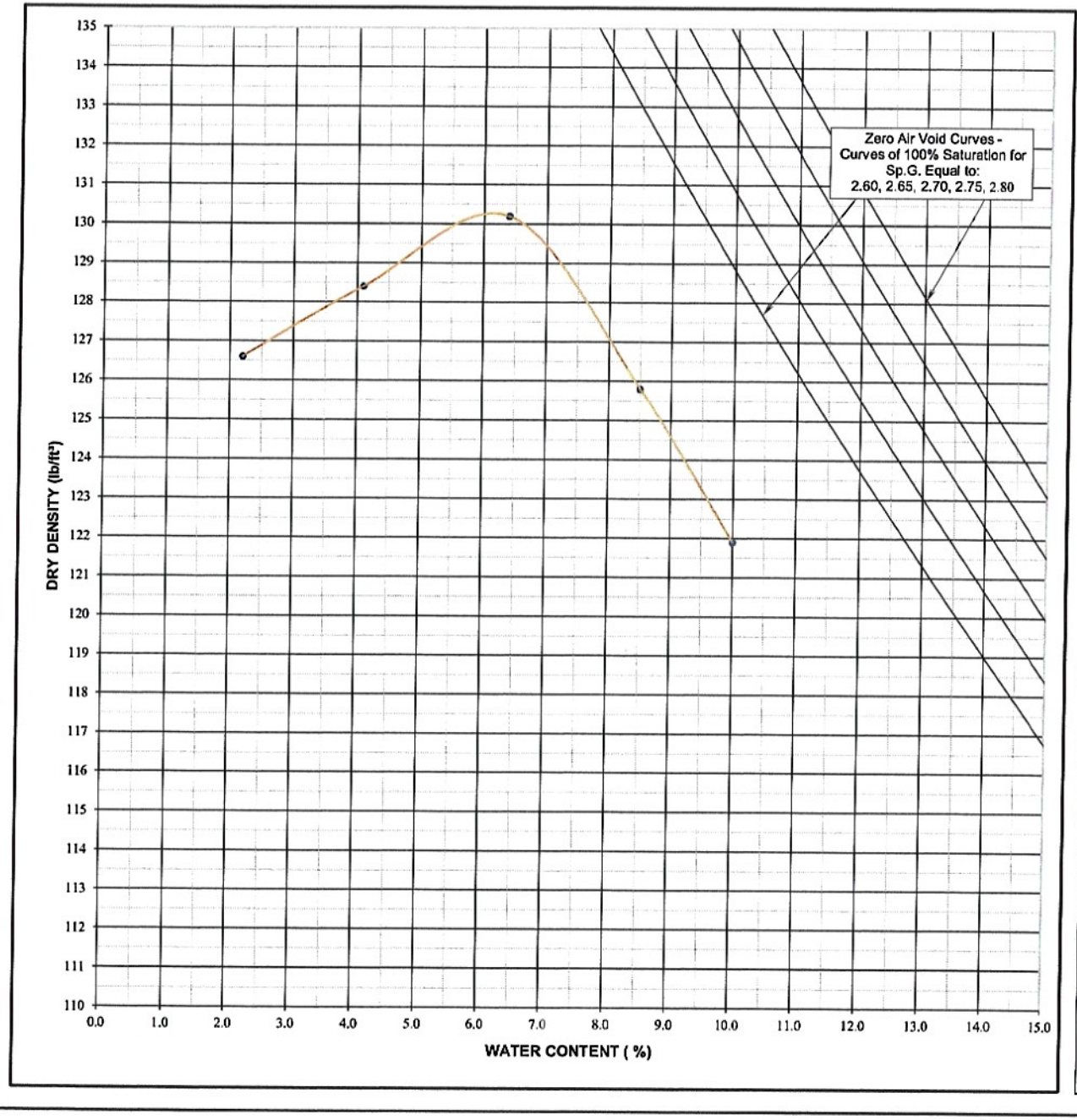

Project No:	221-123
Name: CAG on Call	
Location: Colorado Springs	
Maximum Dry Density (pcf):	130.3
Optimum Moisture Content(%):	6.3
Sample ID:	G-129
Sample Location:	South Plant Stockpile
Soil Description:	Black Well-Graded Sand w/ Silt Gravel (RAP)
USCS Group Name:	SW-SM
AASHTO Group Symbol:	A-1-a
AASHTO Group Index:	0
Specific Gravity:	N/A

Atterberg (ASTM D - 4318)	
LL:	NV
PL:	NP
PI:	NP

Gradation (ASTM D-422, D-136)	
#4	53
#10	32
#40	11
#200	5.2

ASTM Designation:	AASHTO T180
Method:	D
Preparation Method:	Dry
Mold Size:	6 inch
Hammer Type:	10-lb, Manual
Sampled By:	Contractor
Date:	12/23/21
Tested By:	K. LeBron
Date:	12/27/21
Reviewed By:	John Ibarra
Date:	12/29/21