



Kumar & Associates, Inc.
Geotechnical and Materials Engineers
and Environmental Scientists

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An Employee Owned Company

Office Locations: Denver (HQ), Parker, Colorado Springs, Fort Collins, Glenwood Springs, and Summit County, Colorado

February 11, 2026
Revised February 12, 2026

Colorado Aggregate Recycling
Attn: Matt Bustamante
8900 Highway 93, Unite A
Golden, Colorado 80403

Subject: Laboratory Test Results, Class 6 Aggregate Base Course/Recycled Concrete,
2026 Colorado Aggregate Recycling, North Yard -Golden Pit, Colorado

Project No. 26-1-168

Dear Mr. Bustamante:

Attached are the results of laboratory testing performed on a bulk sample of recycled concrete material submitted to our Denver laboratory by a representative of Colorado Aggregate Recycling. The sample was assigned Kumar & Associates, Inc. (K+A) laboratory sample number 93680. We understand the sample was requested to be tested to evaluate the material's suitability to be classified as CDOT Class 6 aggregate base course (ABC). The sample originated from Colorado Aggregate Recycling's Golden Pit. Laboratory testing was performed to determine the material classification parameters, including Atterberg Limits, gradation, and moisture-density relationships (modified Proctor). R-Value (Hveem-stabilometer) and Los Angeles Abrasion testing was also performed. The results of the testing are summarized in the attached Table and figures.

Based on the testing results, the submitted sample meet the gradation and Atterberg limit specifications for Class 6 ABC presented on Table 703-2 in the Colorado Department of Transportation's (CDOT) 2021 *Standard Specifications for Road and Bridge Construction*. The testing indicated the material had an R-value of 79 at an exudation pressure of 300 psi and a 37% loss as evaluated by the Los Angeles Abrasion test.

If you have questions or need further information, please call.

Sincerely,

KUMAR & ASSOCIATES, INC.

Justin Cupich, P.E.

JDC/db
Attachments
cc: File





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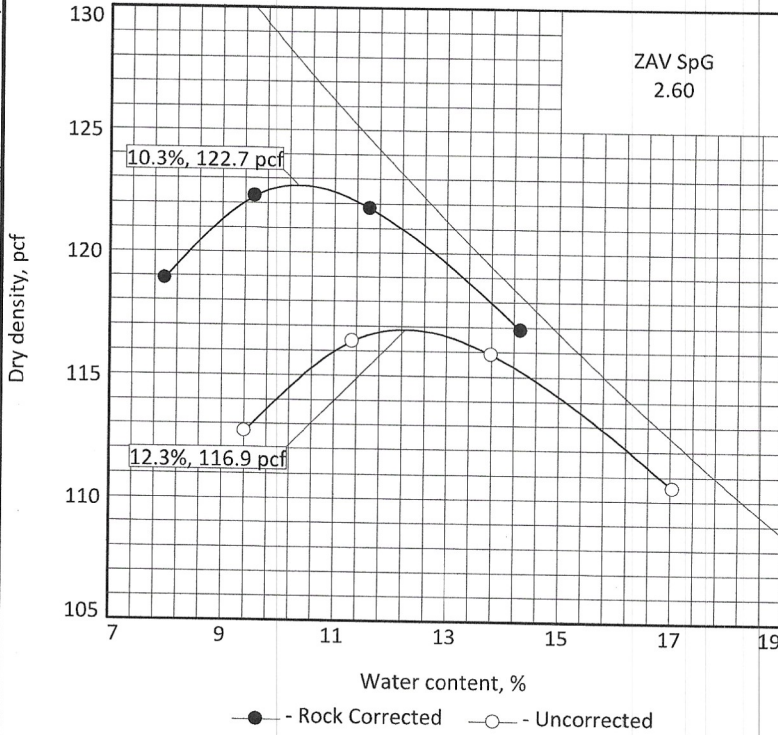
TABLE 1
SUMMARY OF LABORATORY TEST RESULTS
NORTH YARD (GOLDEN)

PROJECT NO.: 26-1-168
PROJECT NAME: 2026 COLORADO AGGREGATE RECYCLING LABORATORY TESTING
DATE RECEIVED: 1/19/2026

SAMPLE NO.	DATE TESTED	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)	GRADATION		PERCENT PASSING No. 200 SIEVE	ATTERBERG LIMITS		R-VALUE @ 300 PSI	LOS ANGELES ABRASION (ASTM C-131)		SOIL OR BEDROCK TYPE
				GRAVEL (%)	SAND (%)		LIQUID LIMIT (%)	PLASTICITY INDEX (%)		GRADING	PERCENT LOSS (%)	
93680	1/28/26	122.7	10.3	40	51	9	29	1	79	B	37	WELL-GRADED SAND WITH SILT AND GRAVEL ABC CLASS 6 (RECYCLED CONCRETE)

COMPACTION TEST REPORT

Curve No. 4683



Preparation Method	
Rammer: Wt. <u>10 lb.</u> Drop <u>18 in.</u>	Type <u>Manual</u>
Layers: No. <u>five</u> Blows per <u>25</u>	Mold Size <u>0.03333 cu. ft.</u>
Test Performed on Material	
Passing <u>3/8 in.</u> Sieve	
%>3/8 in. <u>17</u>	%<No.200 <u>9.0</u>
Atterberg (D 4318): LL <u>29</u> PI <u>1</u>	
NM (D 2216) _____	Sp.G. (D 854) <u>2.6</u>
USCS (D 2487) _____	SW-SM _____
AASHTO (M 145) _____	A-1-a _____
Date: Sampled <u>1/19/26</u>	Received <u>1/19/26</u>
	Tested <u>1/29/26</u>
Tested By _____	AS _____

COMPACTION TESTING DATA
ASTM D 1557-12 Method B Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

	1	2	3	4	5	6
WM + WS	6266.0	6361.0	6396.0	6358.0		
WM	4398.0	4398.0	4398.0	4398.0		
WW + T #1	348.6	404.0	381.4	365.8		
WD + T #1	331.9	378.6	353.7	335.4		
TARE #1	154.5	154.4	153.0	157.1		
WW + T #2						
WD + T #2						
TARE #2						
MOIST.	8.0	9.6	11.6	14.3		
DRY DENS.	118.9	122.3	121.8	116.9		

SIEVE TEST RESULTS

Opening Size	% Passing	Specs.
1"	100	100
3/4"	100	95-100
3/8"	83	
#4	60	30-65
#8	49	25-55
#16	36	
#30	25	
#50	17	
#100	12	
#200	9.0	3-12

ROCK CORRECTED TEST RESULTS

UNCORRECTED

Material Description

Maximum dry density = 122.7 pcf

116.9 pcf

Optimum moisture = 10.3 %

12.3 %

well-graded sand with silt and gravel
ABC Class 6 (Recycled Concrete)

Remarks:

Project No. 26-1-168 **Client:** Colorado Aggregate Recycling
Project: Colorado Aggregate Recycling - 2026 Various Laboratory Projects

Checked by: _____ JJM

○ **Location:** North Yard (Golden) **Sample Number:** 93680

Title: Lab Manager

Kumar & Associates, Inc.

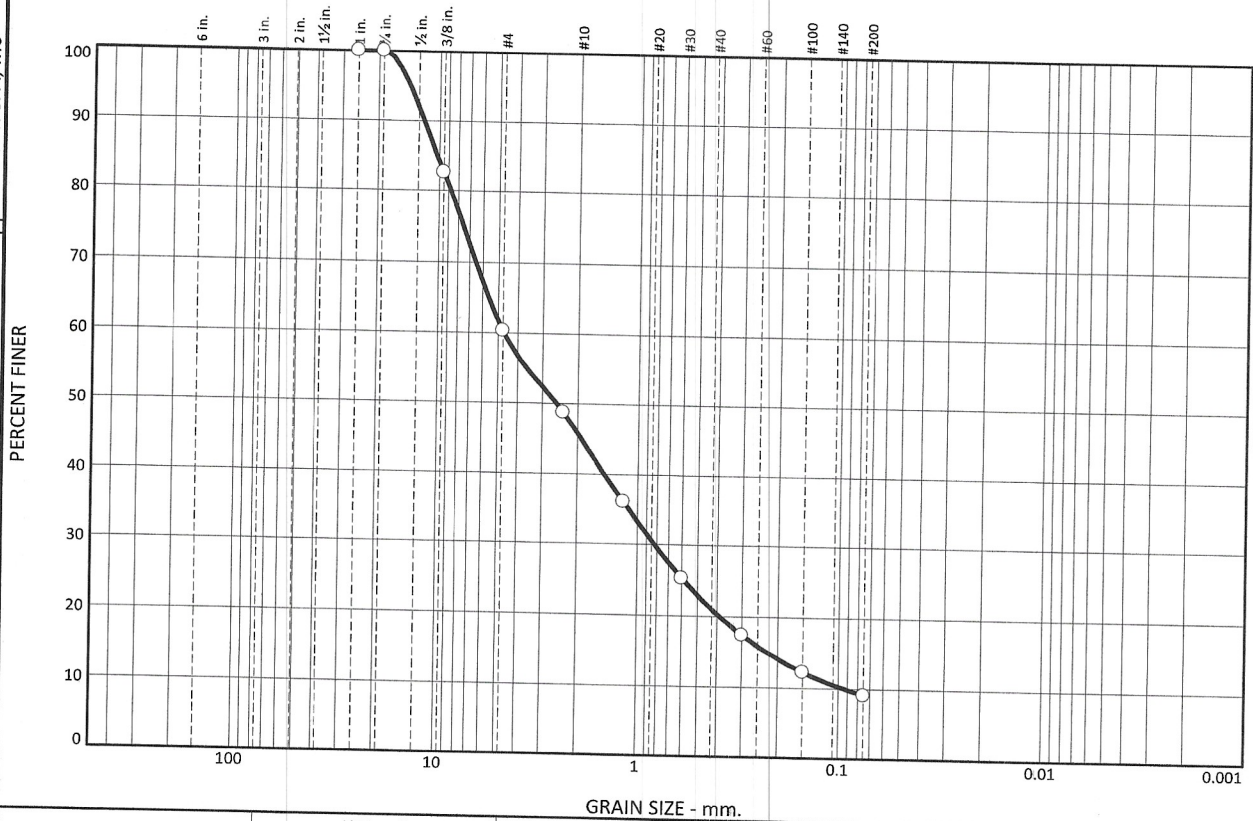
Denver, Colorado

Figure

These test results apply only to the samples which were tested. the testing report shall not be reproduced, except in full, without the written approval of K & A, Inc

Particle Size Distribution Report

ASTM C136



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	40	14	25	12		9

Test Results (ASTM C136)				
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
1"	100	100		
3/4"	100	95-100		
3/8"	83			
#4	60	30-65		
#8	49	25-55		81
#16	36			60
#30	25			42
#50	17			29
#100	12			20
#200	9.0	3-12		15

Material Description
well-graded sand with silt and gravel
ABC Class 6 (Recycled Concrete)

Atterberg Limits
PL= 28 LL= 29 PI= 1

Classification
USCS= SW-SM AASHTO= A-1-a

Test Remarks

* CDOT - ABC Class 6

Location: North Yard (Golden)
Sample Number: 93680

Sample Date: 1/19/26

Kumar & Associates, Inc. Denver, Colorado	Client: Colorado Aggregate Recycling Project: Colorado Aggregate Recycling - 2026 Various Laboratory Projects
	Project No: 26-1-168

Figure

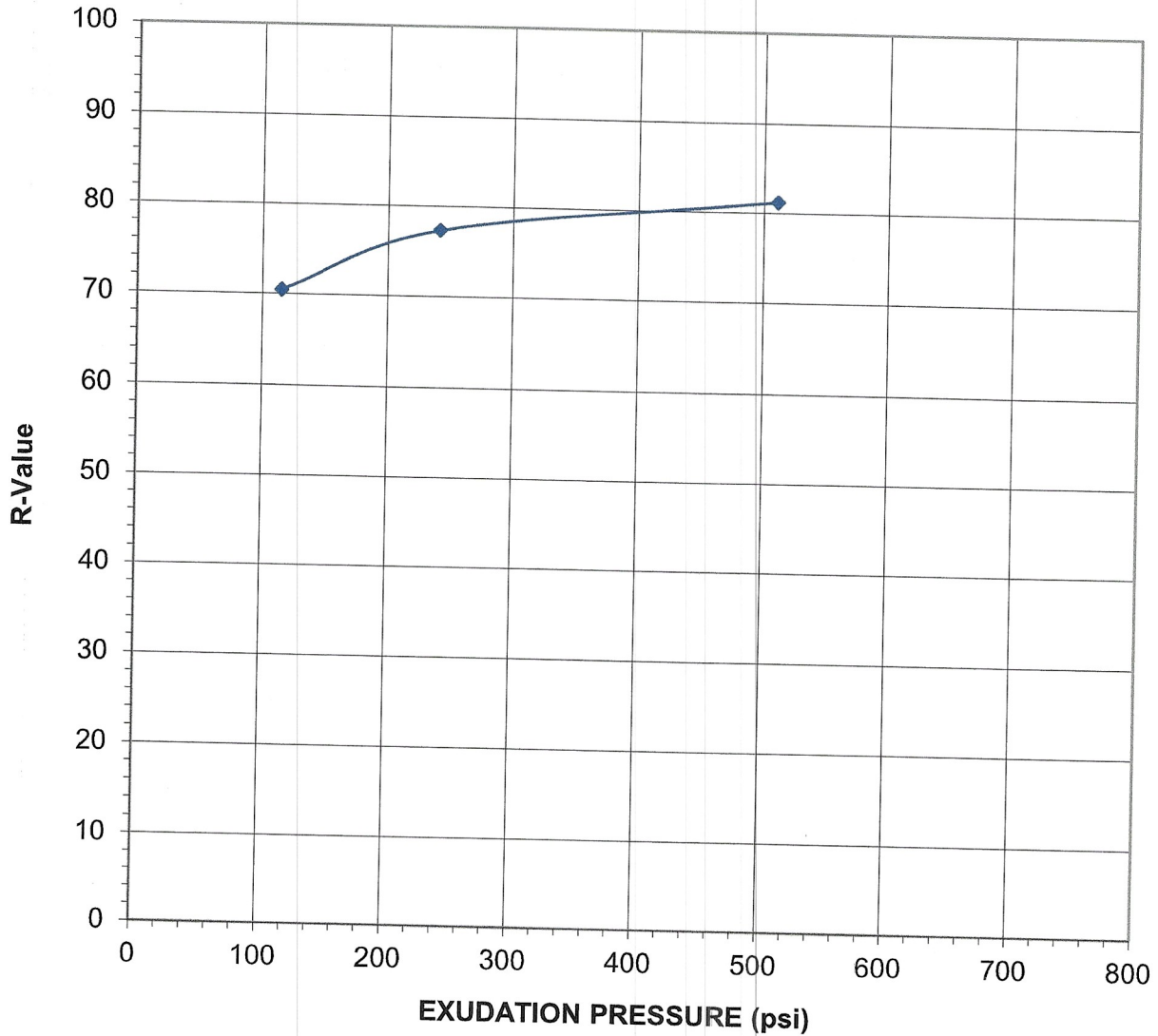
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Tested By: BB

Checked By: JJM

R-VALUE

TEST SPECIMEN	1	2	3	4	R-VALUE (300 psi)
MOISTURE CONTENT (%)	18.7	18.4	18.2		
DENSITY (pcf)	107.7	106.8	108.6		
EXPANSION PRESSURE (psi)	0.000	0.000	0.000		
EXUDATION PRESSURE (psi)	116	242	511		
R-VALUE	70	77	81		
					79



SOIL TYPE: Well-Graded Sand with Silt and Gravel - ABC Class 6 (Recycled Concrete)

LOCATION: North Yard (Golden)

DATE SAMPLED: 1/19/26

DATE RECEIVED: 1/19/26

DATE TESTED: 2/4/26

GRAVEL: 40

SAND: 51

SILT AND CLAY: 9

LIQUID LIMIT: 29

PLASTICITY INDEX: 1

These test results apply to the samples which were tested. The testing report shall not be reproduced, except in full, without the written approval of Kumar & Associates, Inc. R-value performed in accordance with ASTM D2844. Atterberg limits performed in accordance with ASTM D4318. Sieve analyses performed in accordance with ASTM D422, D1140

26-1-168

KUMAR & ASSOCIATES

HVEEM STABILOMETER TEST RESULTS

93680

Denver (HQ)
 2390 South Lipan Street
 Denver, CO 80223
 Phone: 3037429700

LA Abrasion - Small-Size Coarse Agg

ASTM C131

Client:

Colorado Aggregate Recycling
 8900 Highway 93, Unit A
 Golden, CO 80403

Project:

26-1-168
 Colorado Aggregate Recycling - 2026 Various
 Laboratory Projects
 8900 Highway 93, Unit A
 Golden, CO 80403

Sample Information

Sample Number:	93680	Sample Date:	01/19/2026
Sample From:	Not Given	Sampling Method:	Not Provided
Location Details:	North Yard (Golden)		
Material Description:	Recycled Base Aggregate	Technician:	Client

Lab Test Results

Grading Designation	Nominal Maximum Aggregate Size	Percent Loss (%)
B	19 mm (3/4 inch)	37

Test Completed Date: 01/28/2026 **Test Completed By:** Tsering Chokteng