Asphalt Pavement And Recycling Technologies, Inc.

5207 Minter Field Avenue
Shafter, CA 93263
Telephone: (661) 393-2748
Fax: (661) 393-2804
bobs@apartshafter.com
michaels@apartshafter.com

Report: 17-1013

November 2, 2017

Customer: Biobased Spray Systems, LLC – Mike Freisthler

Project: Darke County, Ohio

Samples submitted:

Two pavement core samples (1 untreated and 1 treated with BIORESTOR)

The cores were taken on 09-07-17.

One quart of PG 58-28 asphalt binder dated:

09-07-17

Requested Testing:

Extract and recover the asphalt binder from the top 3/8-inch layer of each core. Subject the PG 58-28 to Rolling Thin Film Oven aging. Test the recovered binder of each core and the aged PG 58-28 sample for equivalent penetration and viscosity. In addition, determine the Dynamic Shear Rheological (DSR) properties at 60°C. These properties include viscosity, phase angle, complex, elastic, and viscous moduli.

Summary of Testing:

The top 3/8-inch of each core was removed for testing. The asphalt from each core was extracted and recovered as prescribed by California Test Method 365. The PG 58-28 was aged as per ASTM D2872. Viscosities were determined using a sliding plate microviscometer (CTM 348) and penetrations were calculated from a nomograph. DSR properties were determined as prescribed by AASHTO T315. Test data are reported by Tables I and II.

Robert Stanforth

Table I

Biobased Spray Systems, LLC

Darke County, Ohio
BIORESTOR Preservative Seal
Top 3/8" of Core Samples

Sample Identification	Microviscosity, 25°C, MP		Equivalent Penetration
	0.05 sec^{-1}	0.001 sec^{-1}	
PG 58-28	1.442	1.416	74
Core Specimens			
Untreated	9.351	8.644	31
Treated	4.233	3.480	45
% Increase in Penetration	45		
% Decrease in Viscosity	121		

Table II

Biobased Spray Systems, LLC

Darke County, Ohio
BIORESTOR Preservative Seal
Top 3/8" of Core Samples

Sample Identification	Viscosity 60°C, Poises	Phase Angle, °	MODULUS, 60°C, Pa		
			Complex	Elastic	Viscous
PG 58-28	1979	84.9	1992	175	1972
Core Specimens					
Untreated	9471	81.2	9496	1460	9383
Treated	7258	83.4	7280	1035	7187