This supporting information is composed of six pages, four figures and one table. Table S1 contains a comparison of ambient RH and RH sampled through the silica gel dryer in Baltimore across the different seasons. Figure S1 presents seasonal daytime and nighttime $WSOC_{p,dry}/WSOC_p$ ratios. Figure S2 depicts the summertime diurnal profiles of isoprene, $WSOC_g$ and $WSOC_g$ concentrations shifted 3 h prior to their measurement. Figure S3 shows boxplot of $WSOC_p$ and evaporated $WSOC_p$ concentrations as a function of isoprene concentrations at 9 h time delay relative to isoprene concentrations. Finally, Figure S4 illustrates the median evaporated $WSOC_p$ concentrations as a function of $WSOC_g$ concentrations at different time delays relative to $WSOC_g$ concentrations.

Table S1. Comparison of ambient RH and RH sampled through the silica gel dryer across the different seasons.

Ambient RH (%)	RH-through dryer Mean ± 1σ (%)			
	Fall	**Winter**	**Spring**	**Summer**
20			10.7 ± 0.5	
30			19.8 ± 0.4	
40			21.1 ± 0.5	32.7 ± 0.7
50		15.5 ± 0.2	16.5 ± 0.3	35.0 ± 0.9
60	46.0 ± 0.7	19.2 ± 0.8	31.4 ± 0.3	36.6 ± 0.4
70	42.3 ± 1.9	20.8 ± 0.7	32.0 ± 0.4	35.1 ± 0.1
80	42.5 ± 0.5	22.8 ± 0.9	22.5 ± 0.6	40.0 ± 0.1
90	42.2 ± 1.2	23.6 ± 0.8		
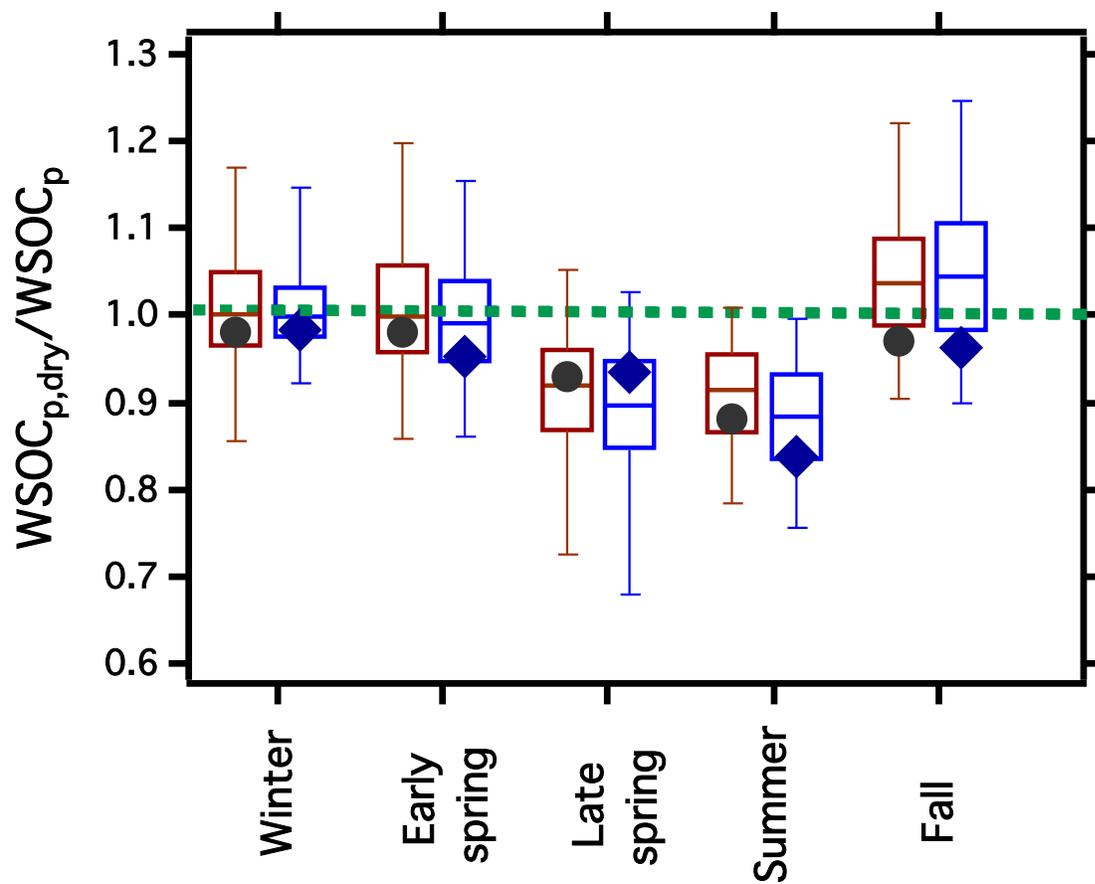
Figure S1. Daytime (red) and nighttime (blue) seasonal $WSOC_{p,dry}/WSOC_p$ ratios. Circles and diamonds represent the daytime and nighttime averages, respectively. The green dotted line at unity is for visual reference.
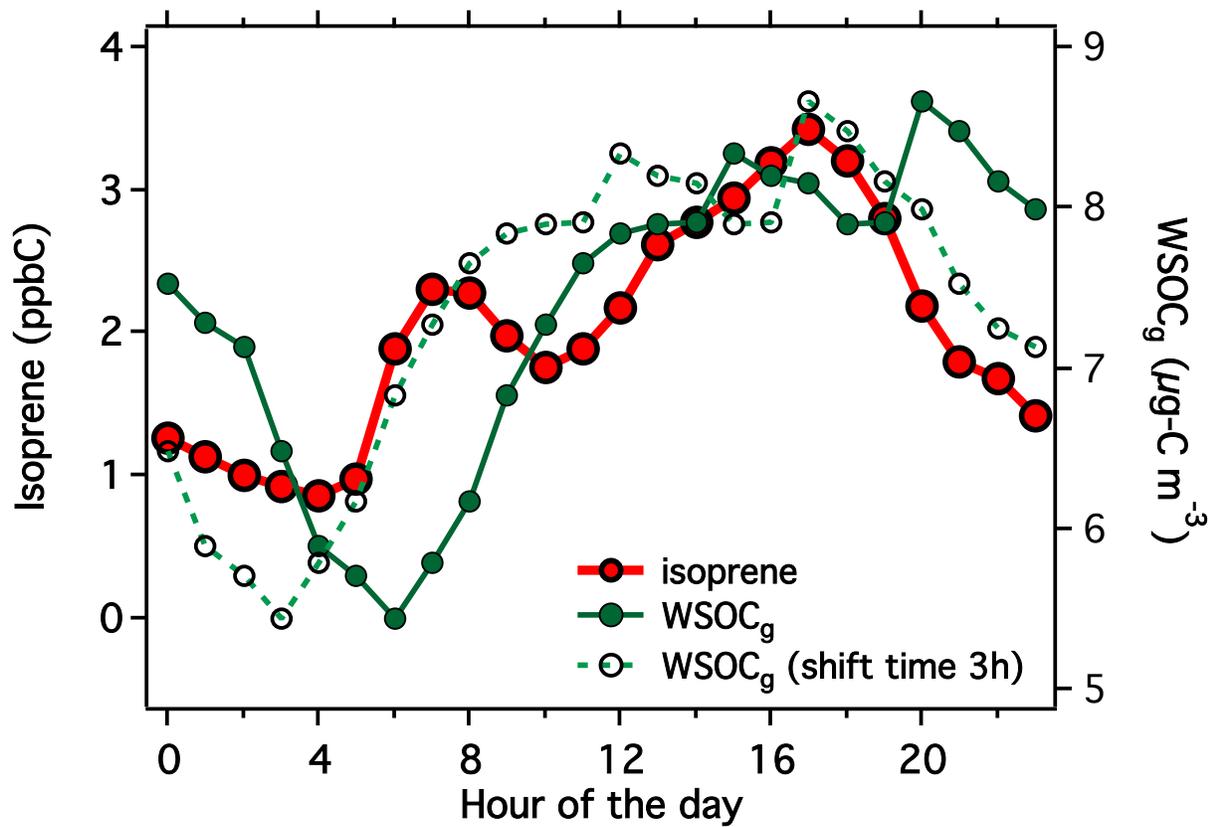
Figure S2. Summertime diurnal profiles of isoprene concentrations (red), $WSOC_g$ concentrations (solid green) and $WSOC_g$ concentrations shifted 3 h prior to their measurement (dotted green). All concentrations pertain to the summer, ozone season (starting from early June until late August of 2015) when hourly isoprene measurements were carried out by MDE.
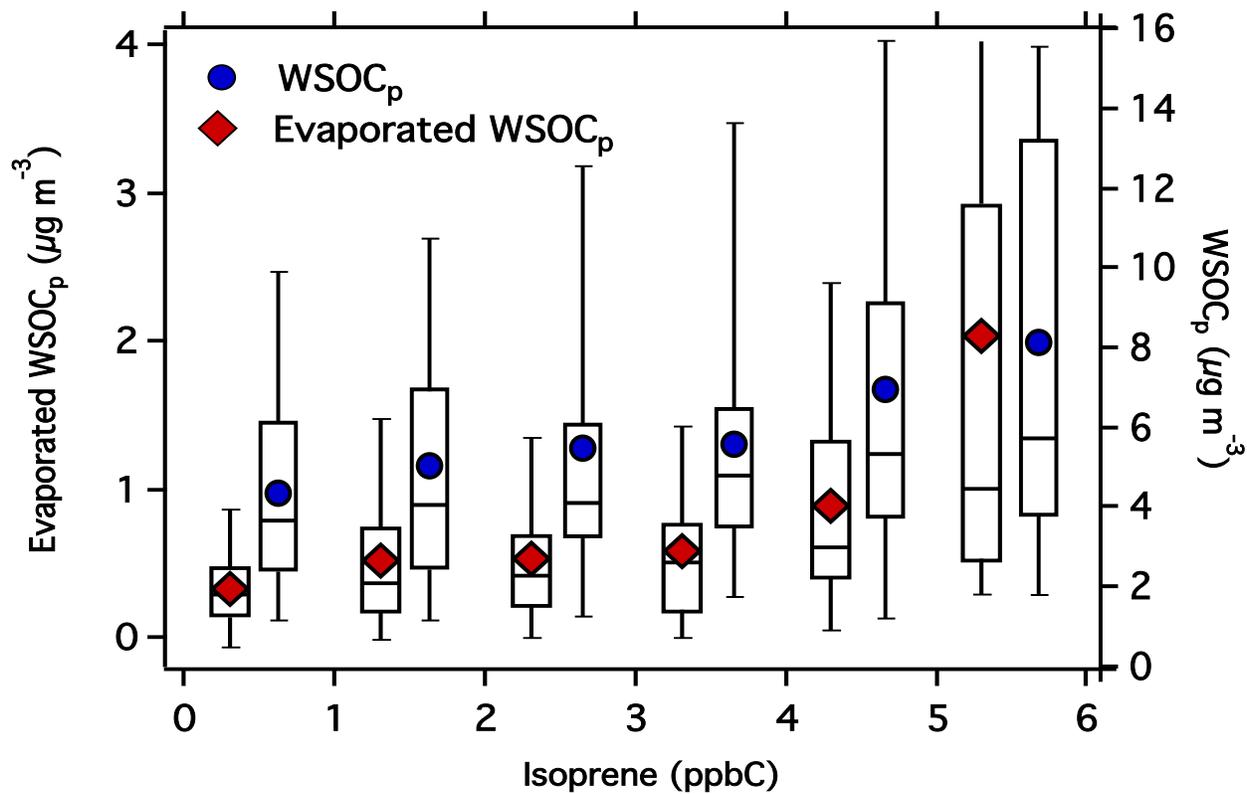
Figure S3. Boxplots of WSOC$_p$ and evaporated WSOC$_p$ concentrations as a function of isoprene concentrations at 9 h time delay (n = 9 h) relative to isoprene concentrations. Blue circles and red diamonds represent the means of the WSOC$_p$ and evaporated WSOC$_p$ concentrations at each isoprene bin, respectively. Note that the 95th percentile of the evaporated WSOC$_p$ concentration for the highest isoprene bin (> 5 ppbC) is off scale (7.6 µg m^{-3}).
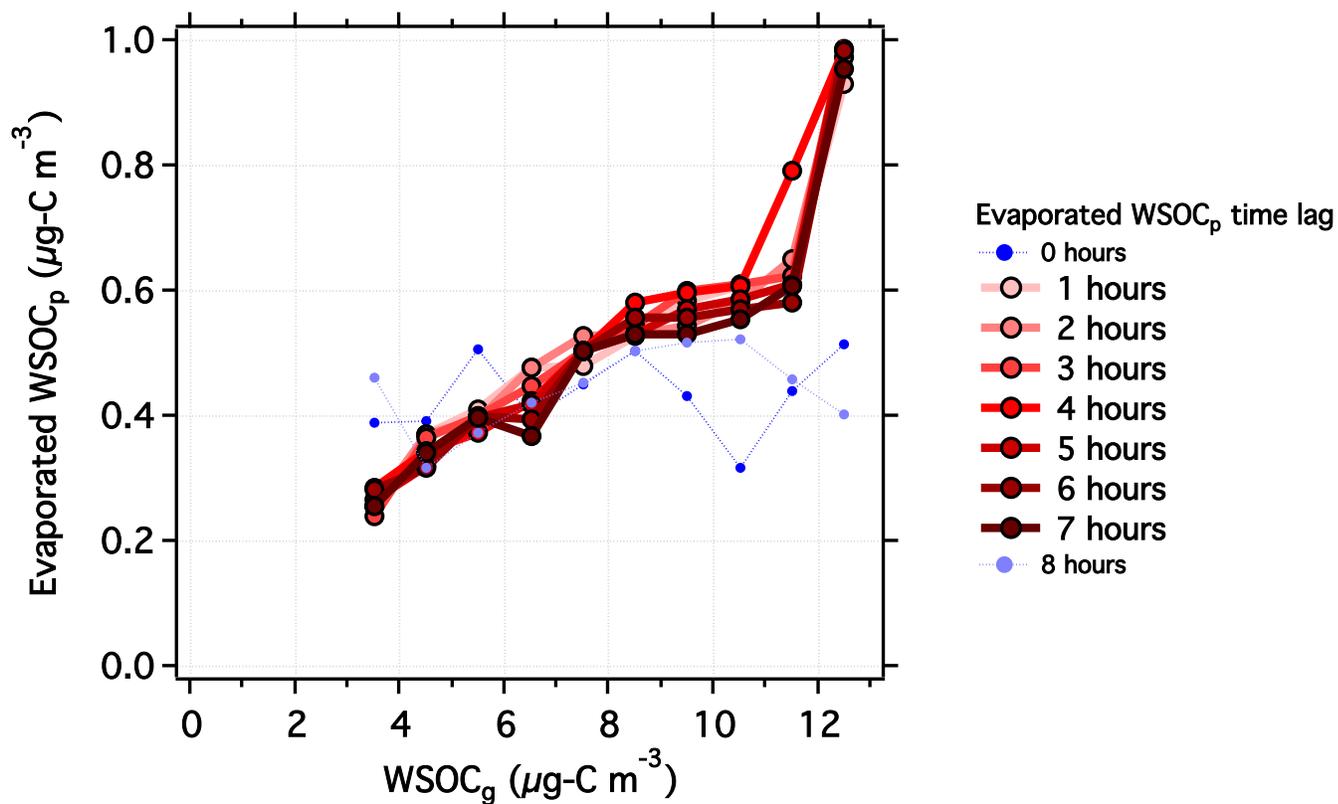
Figure S4. Median evaporated $WSOC_p$ concentrations as a function of $WSOC_g$ concentrations at different time delays relative to the $WSOC_g$ concentrations.