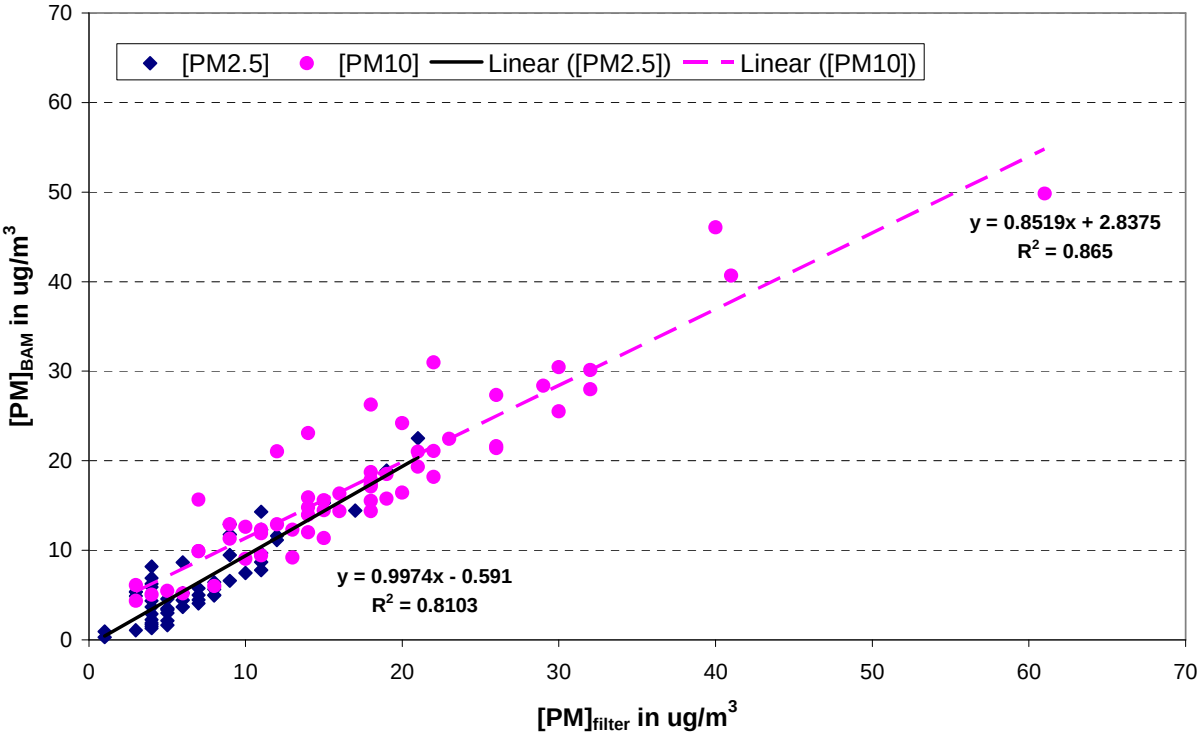
Appendix C

Comparisons of PM Sampling Methods

A. BAM vs. Federal Reference Methods

Figure C-1. Matched PM data comparison - BAM vs. FRM at SLT-Sandy Way in 2003.



B. Two-Week-Sampler vs. BAM

Figure C-2a. Matched PM data - TWS versus BAM at Big Hill.

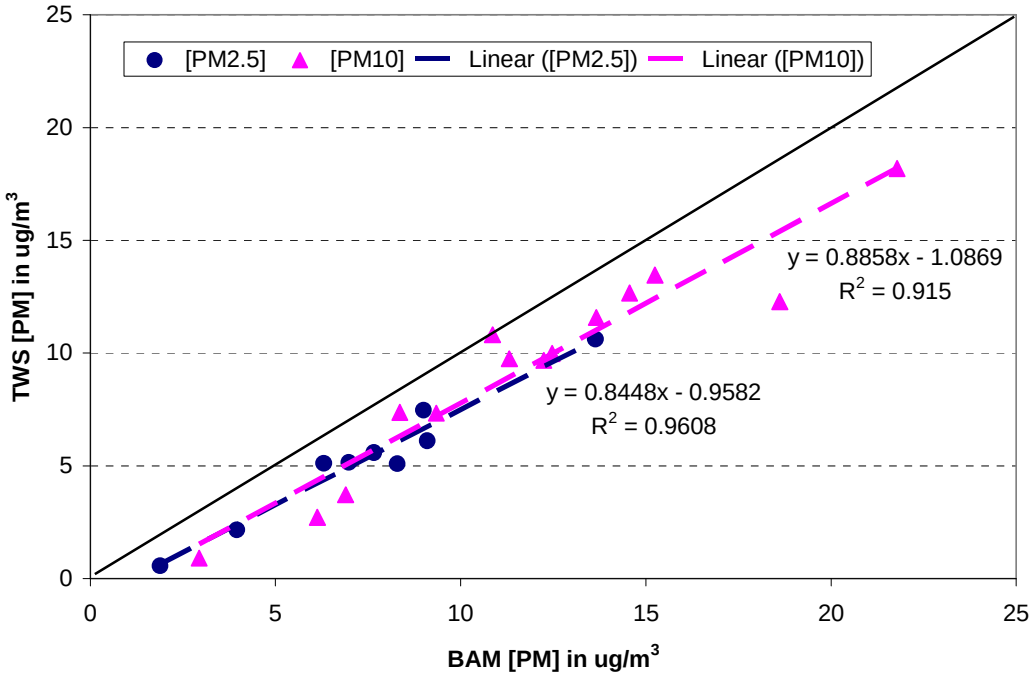


Figure C-2b. Matched PM data - TWS versus BAM at Thunderbird Lodge.

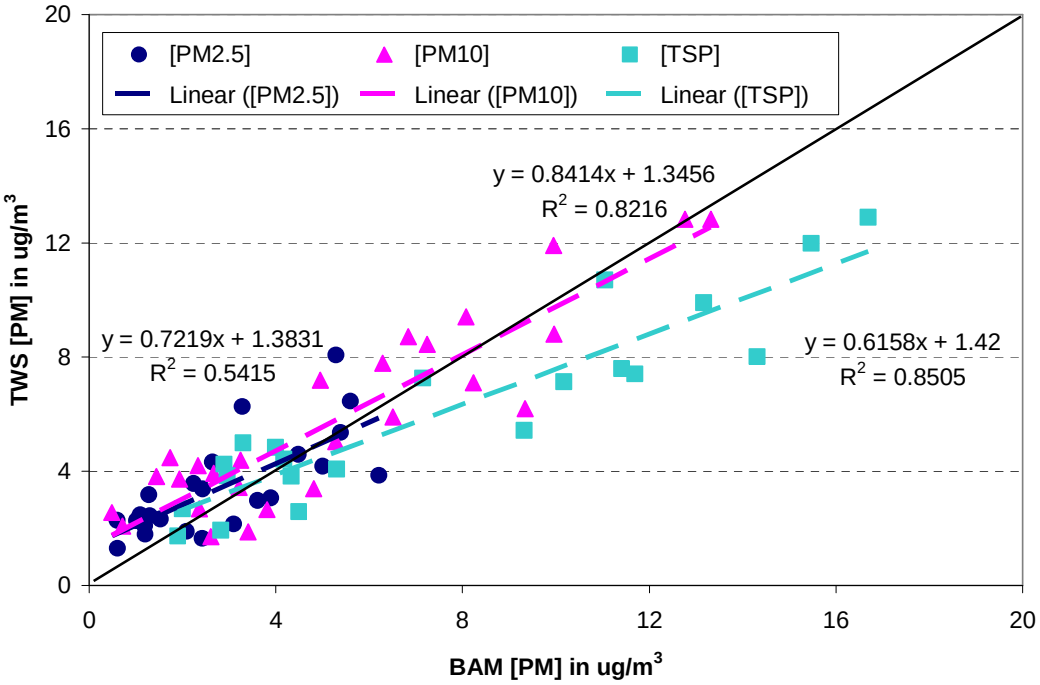


Figure C-2c. Matched PM data - TWS versus BAM at Lake Forest.

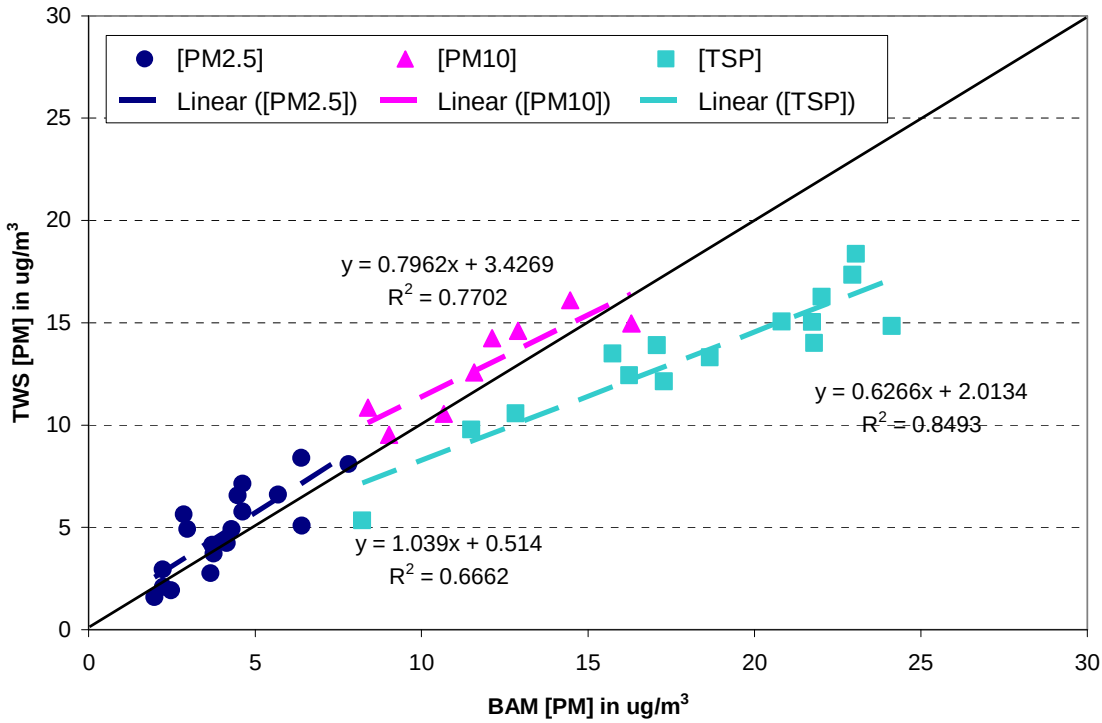


Figure C-2d. Matched PM data - TWS versus BAM at SLT – Sandy Way.

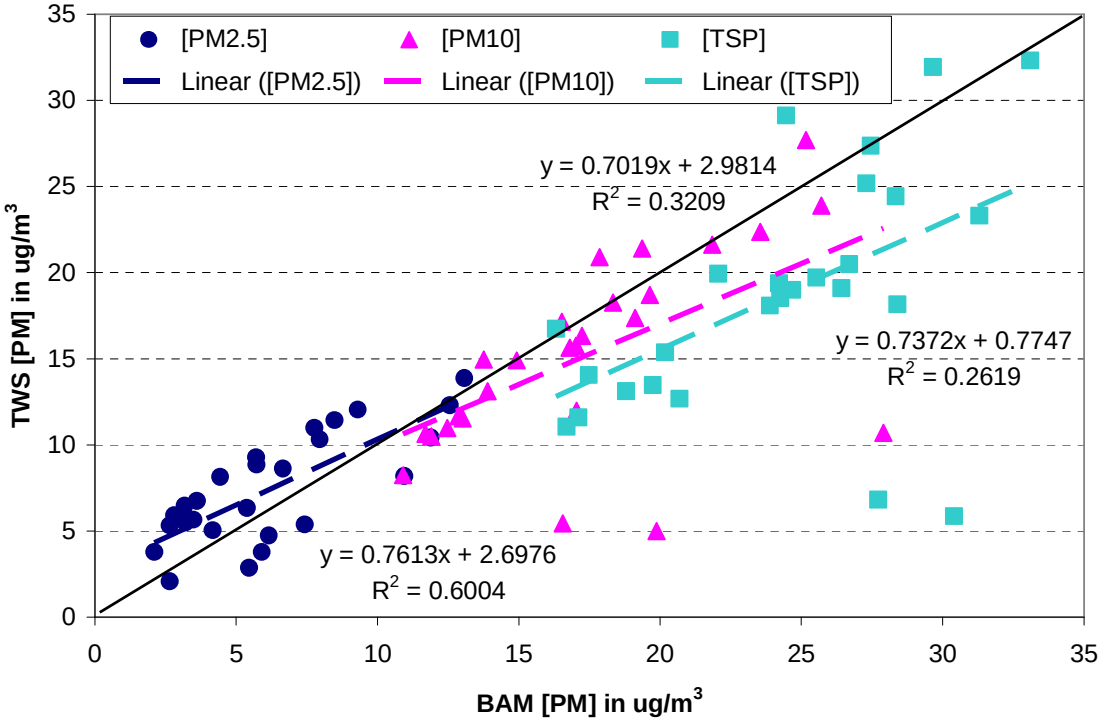


Figure C-2e. Matched PM data - TWS versus BAM at SLT – SOLA.

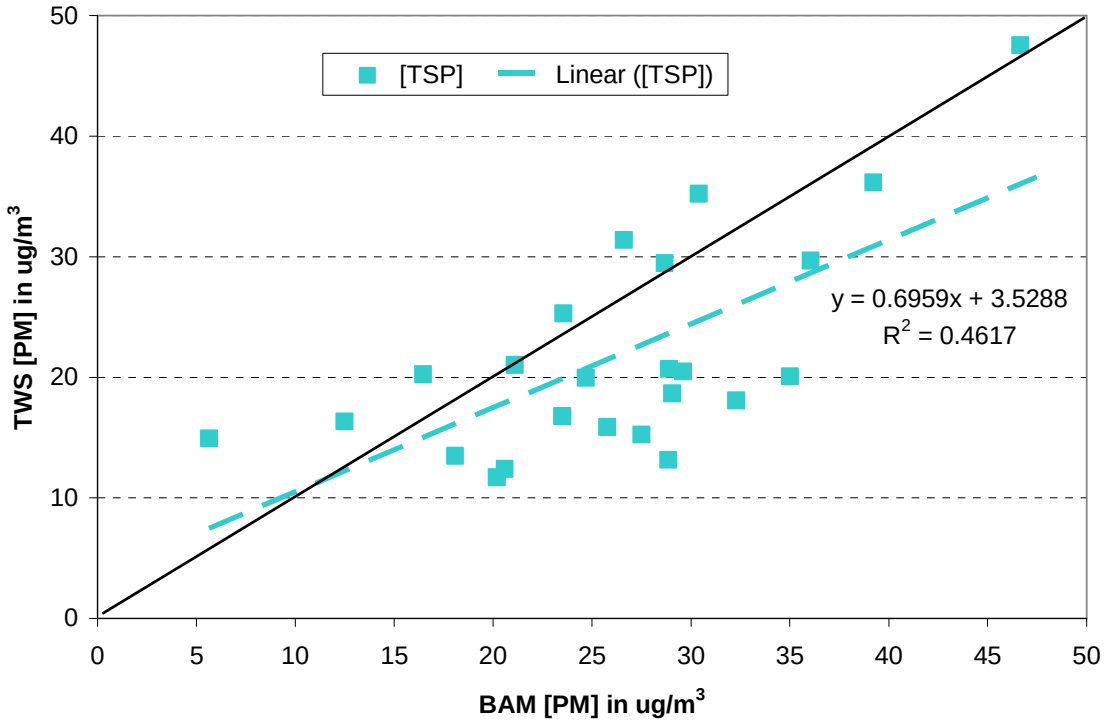
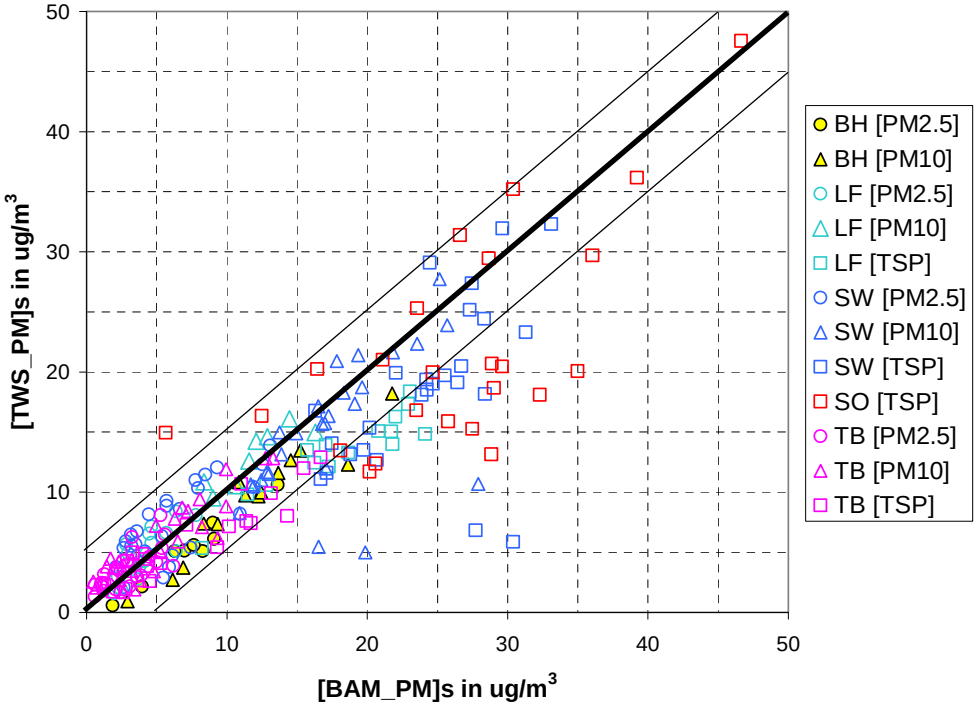
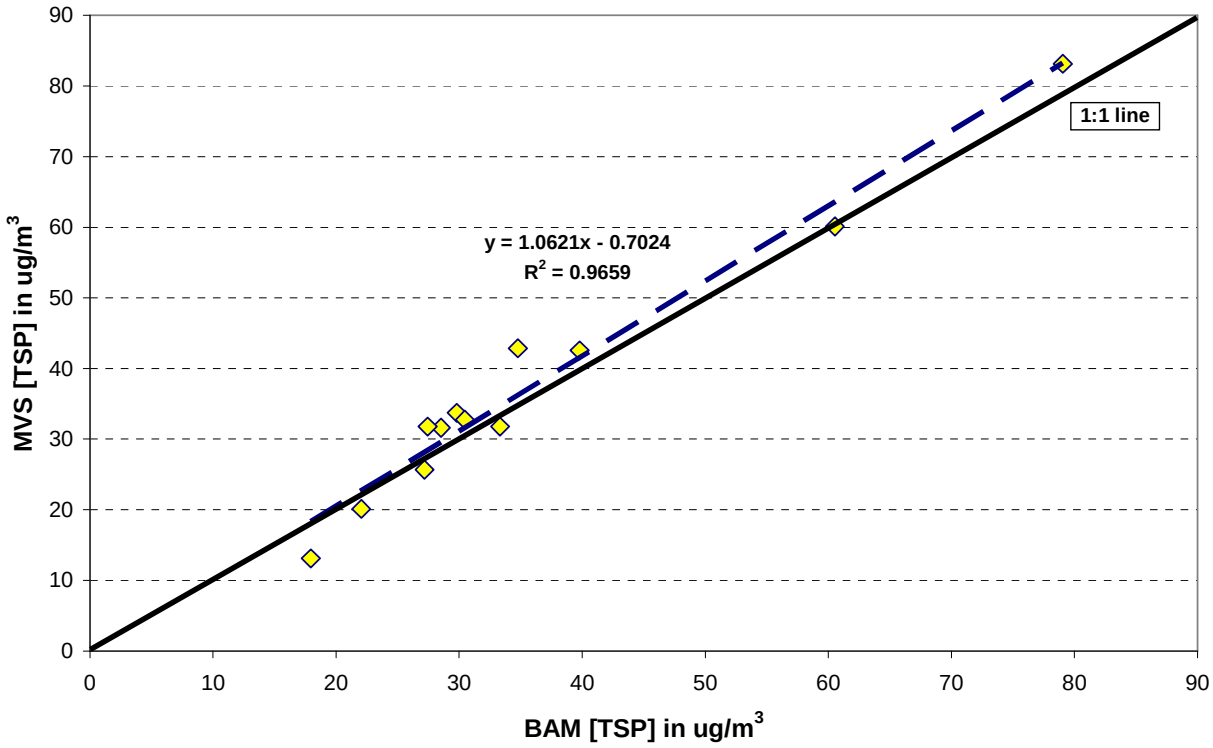


Figure C-2f. Matched PM data - composite plot of TWS versus BAM.



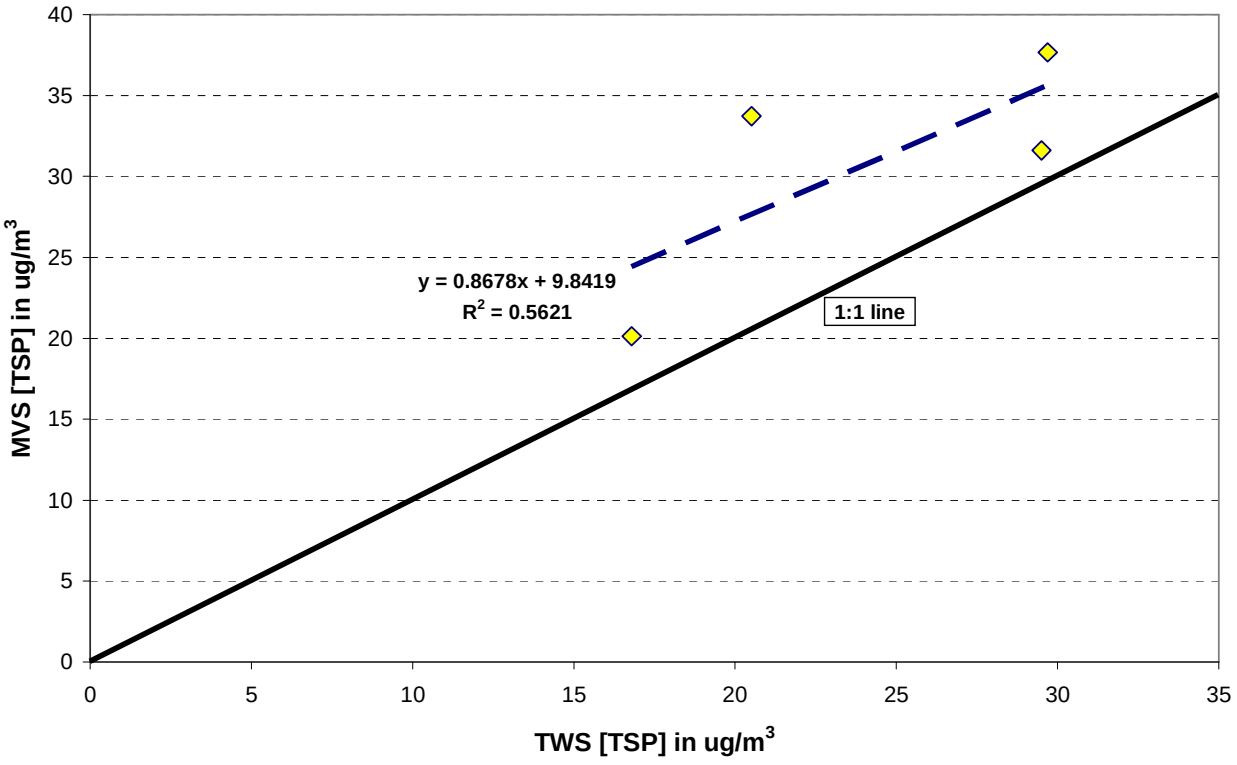
C. BAM vs. Mini-Volume Sampler

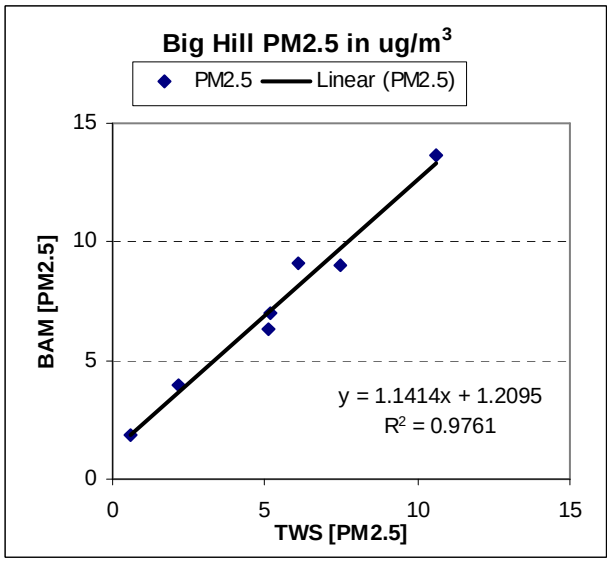
Figure C-3. Matched PM data - MVS versus BAM at SLT - SOLA.

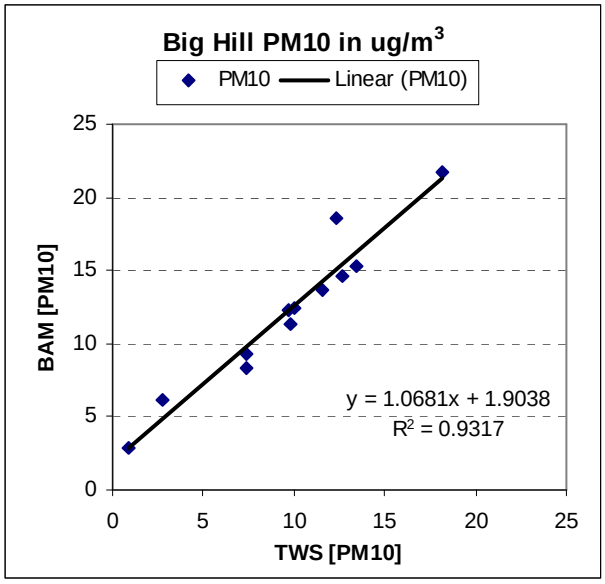


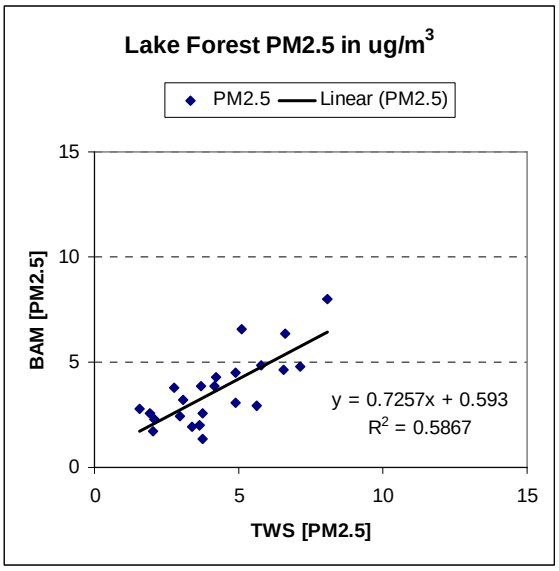
D. Mini-Volume Sampler vs. Two-Week-Sampler

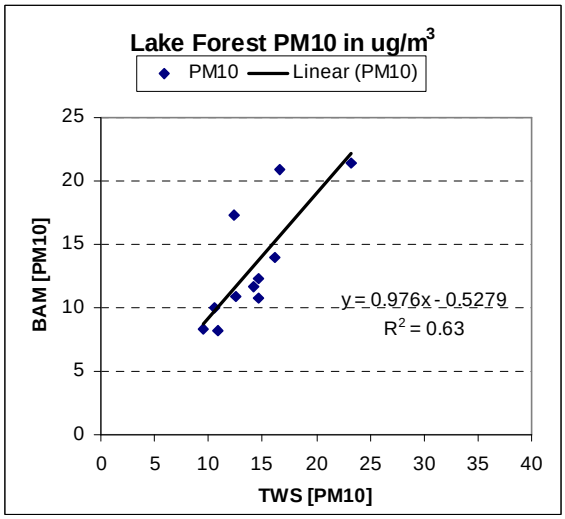
Figure C-4. Matched PM data - MVS versus TWS at SLT - SOLA.

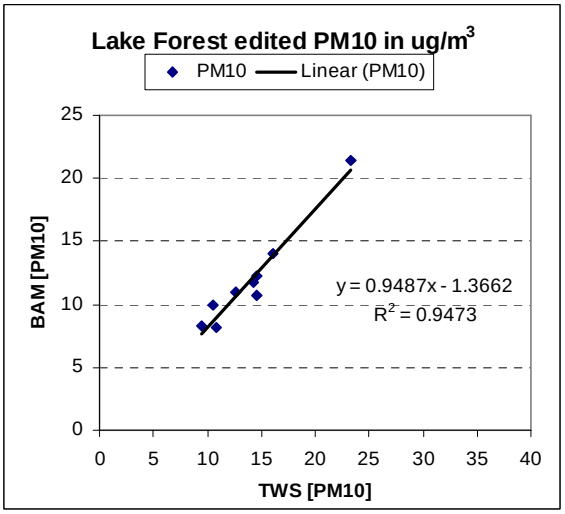


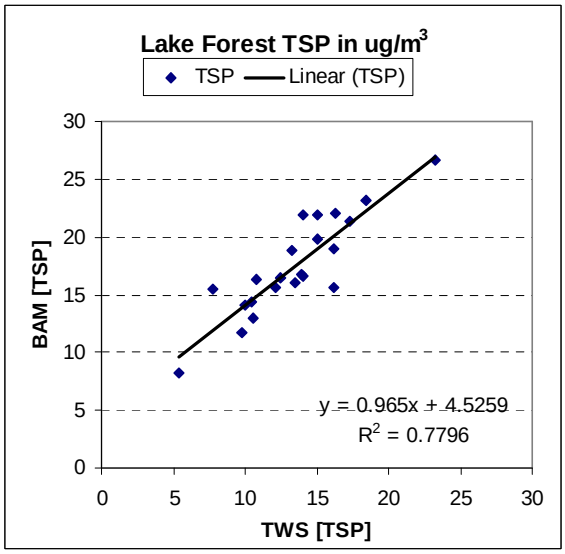

Big Hill PM2.5 in ug/m3
PM2.5
Linear (PM2.5)
BAM [PM2.5]
TWS [PM2.5]
y = 1.1414x + 1.2095
R2 = 0.9761
0
5
10
15

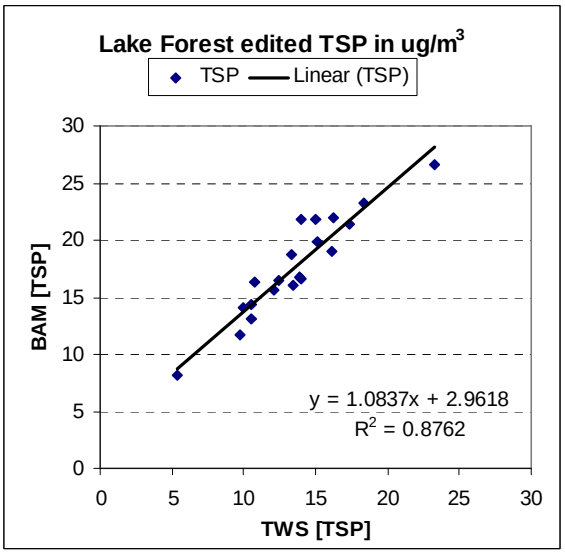

Big Hill PM10 in ug/m3
PM10
Linear (PM10)
BAM [PM10]
TWS [PM10]
y = 1.0681x + 1.9038
R2 = 0.9317
0
5
10
15
20
25

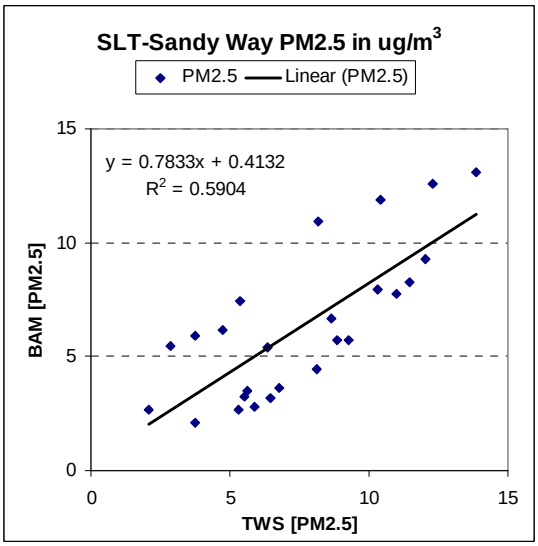

Lake Forest PM2.5 in ug/m3
PM2.5
Linear (PM2.5)
BAM [PM2.5]
TWS [PM2.5]
y = 0.7257x + 0.593
R2 = 0.5867
0
5
10
15

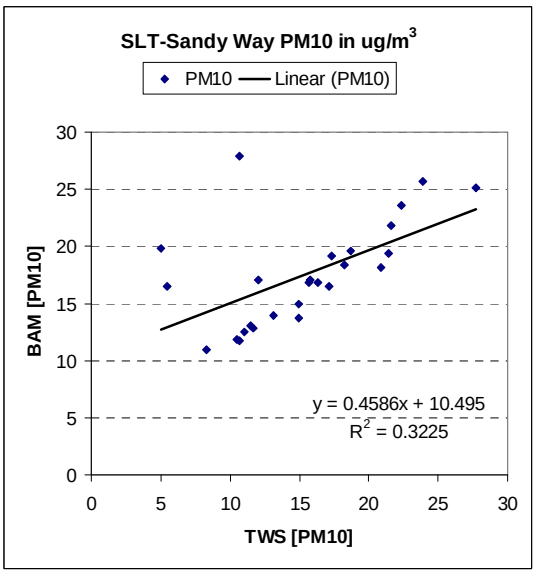

Lake Forest PM10 in ug/m3
PM10
Linear (PM10)
BAM [PM10]
TWS [PM10]
y = 0.976x - 0.5279
R2 = 0.63
0
5
10
15
20
25
30
35
40

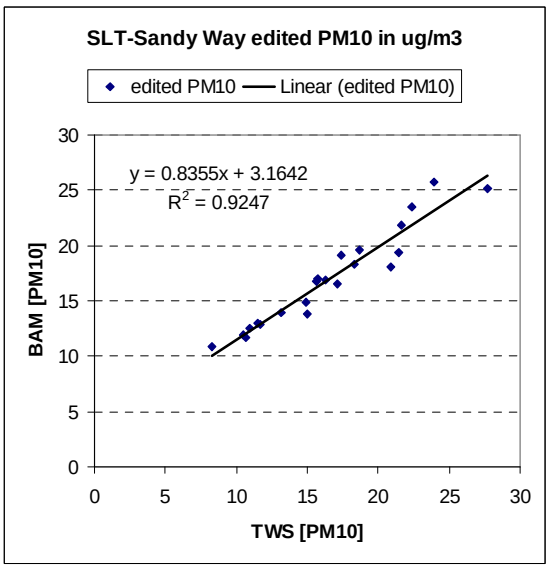

Lake Forest edited PM10 in ug/m3
PM10
Linear (PM10)
BAM [PM10]
TWS [PM10]
y = 0.9487x - 1.3662
R2 = 0.9473
0
5
10
15
20
25
30
35
40

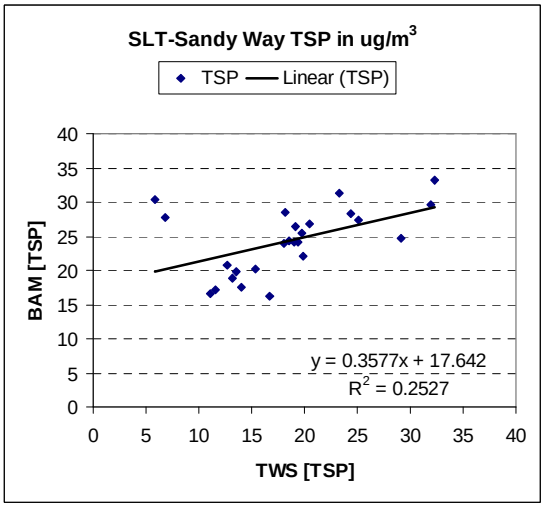

Lake Forest TSP in ug/m3
TSP
Linear (TSP)
BAM [TSP]
TWS [TSP]
y = 0.965x + 4.5259
R2 = 0.7796
0
5
10
15
20
25
30

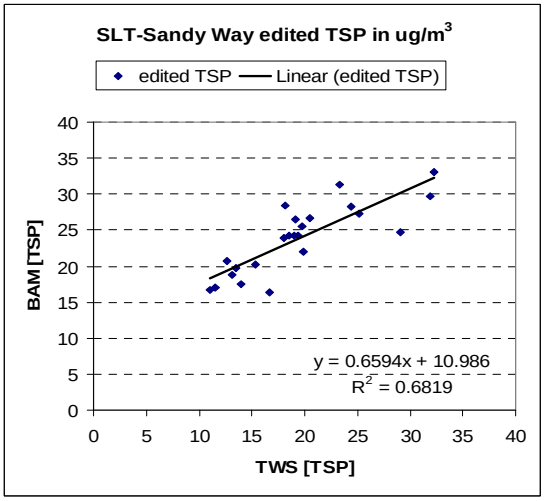

Lake Forest edited TSP in ug/m3
TSP
Linear (TSP)
BAM [TSP]
TWS [TSP]
y = 1.0837x + 2.9618
R2 = 0.8762
0
5
10
15
20
25
30

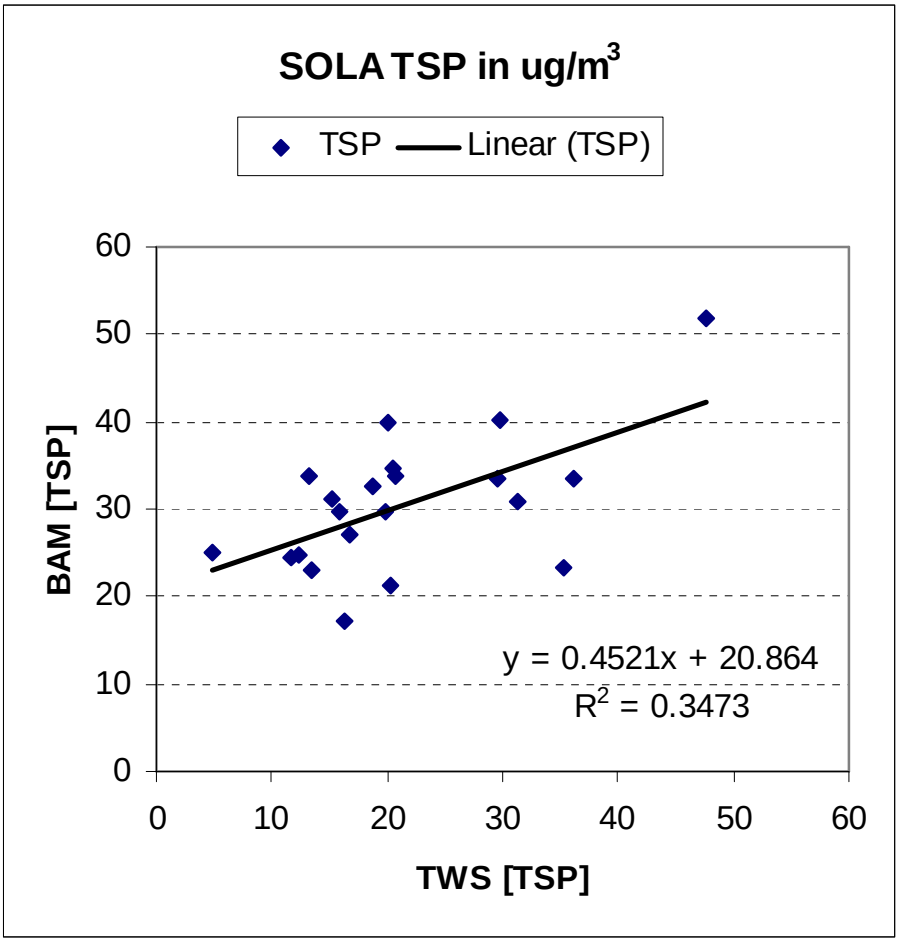

SLT-Sandy Way PM2.5 in ug/m3
PM2.5
Linear (PM2.5)
y = 0.7833x + 0.4132
R2 = 0.5904
BAM [PM2.5]
TWS [PM2.5]
0
5
10
15

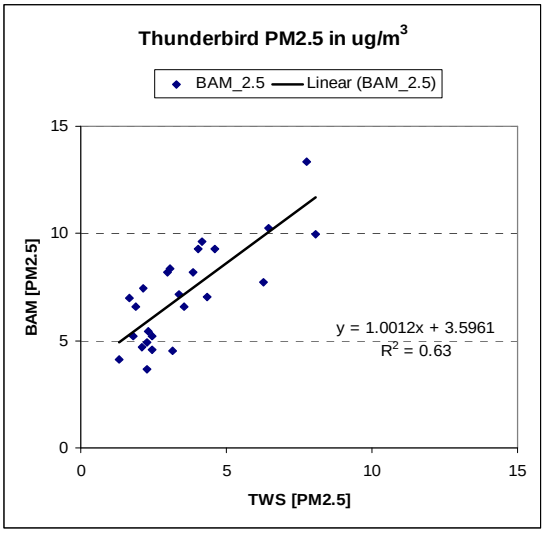

SLT-Sandy Way PM10 in ug/m3
PM10
Linear (PM10)
y = 0.4586x + 10.495
R2 = 0.3225
BAM [PM10]
TWS [PM10]
0
5
10
15
20
25
30


SLT-Sandy Way edited PM10 in ug/m3
edited PM10
Linear (edited PM10)
y = 0.8355x + 3.1642
R2 = 0.9247
BAM [PM10]
TWS [PM10]
0
5
10
15
20
25
30

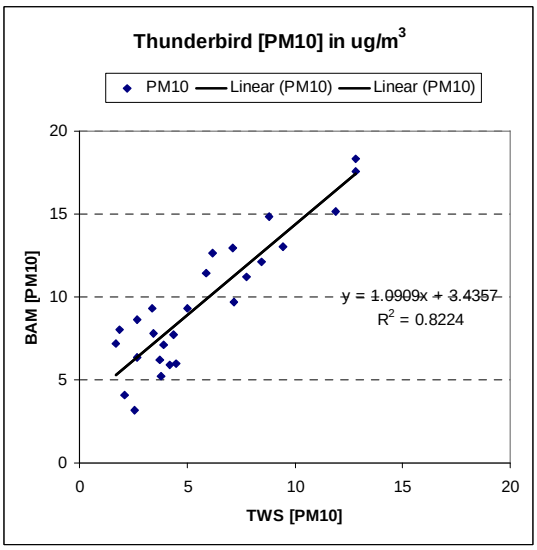

SLT-Sandy Way TSP in ug/m3
TSP
Linear (TSP)
y = 0.3577x + 17.642
R2 = 0.2527
BAM [TSP]
TWS [TSP]
0
5
10
15
20
25
30
35
40

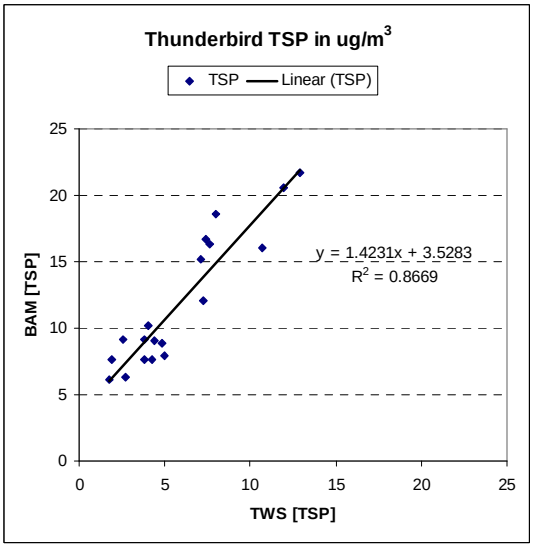

SLT-Sandy Way edited TSP in ug/m3
edited TSP
Linear (edited TSP)
y = 0.6594x + 10.986
R2 = 0.6819
BAM [TSP]
TWS [TSP]
0
5
10
15
20
25
30
35
40


SOLA TSP in ug/m3
TSP
Linear (TSP)
BAM [TSP]
TWS [TSP]
0
10
20
30
40
50
60
y = 0.4521x + 20.864
R2 = 0.3473



The good correlations between the BAM and TWS [PM]s and the "constant" 3.5 ug/m^3 offset observed in all three sampling sizes at the Thunderbird site indicates that the bias there may have been in the BAM monitors.





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