

**APPENDIX V**  
**MATES IV**  
**FINAL REPORT**

**Comparison Between the  
West Long Beach Sites in MATES III and MATES IV**

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**Table V-1. Average concentration of selected PM, VOC and carbonyl species, their respective 95% confidence interval, and the p-value for the difference between the mean at the MATES III and MATES IV West Long Beach sites.**

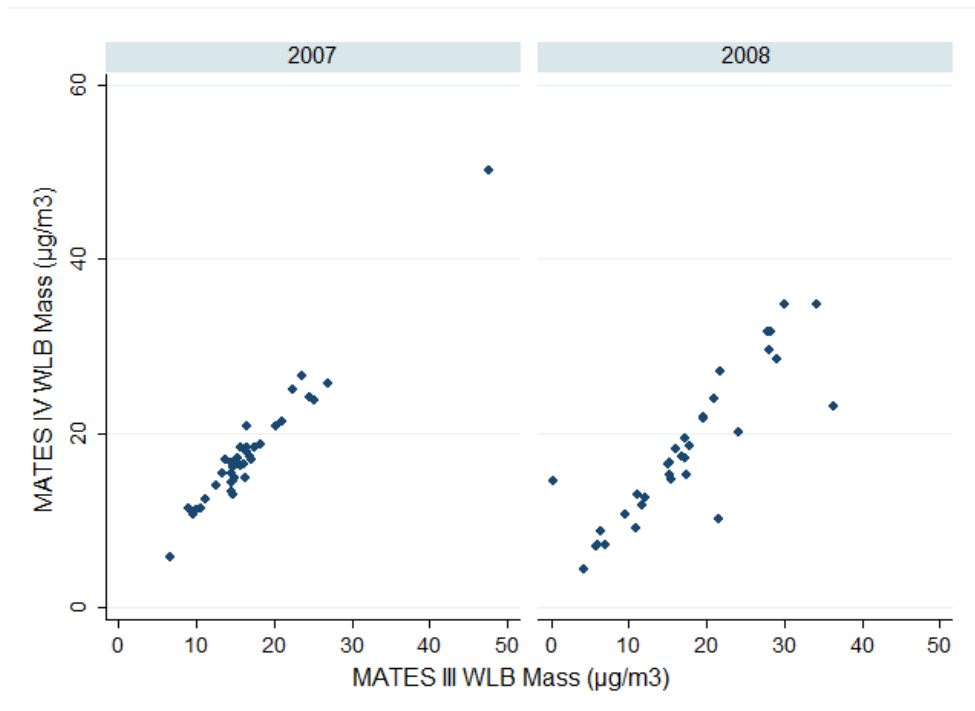
	PM2.5 Mass ( $\mu\text{g}/\text{m}^3$ )	PM2.5 OC ( $\mu\text{g}/\text{m}^3$ )	PM2.5 EC ( $\mu\text{g}/\text{m}^3$ )	Nitrate ( $\mu\text{g}/\text{m}^3$ )	Sulfate ( $\mu\text{g}/\text{m}^3$ )	1,3-Butadiene (ppb)	Benzene (ppb)	Formaldehyde (ppb)	Acetaldehyde (ppb)
MATES III WLB Site	17.6 $\pm$ 2.0	6.50 $\pm$ 0.82	2.22 $\pm$ 0.44	3.07 $\pm$ 0.70	3.67 $\pm$ 0.55	0.048 $\pm$ 0.01	0.39 $\pm$ 0.06	2.47 $\pm$ 0.27	0.98 $\pm$ 0.14
MATES IV WLB Site	18.5 $\pm$ 2.1	6.30 $\pm$ 0.74	2.77 $\pm$ 0.51	3.34 $\pm$ 0.78	3.87 $\pm$ 0.57	0.058 $\pm$ 0.01	0.39 $\pm$ 0.07	2.50 $\pm$ 0.23	1.24 $\pm$ 0.15
p-value	0.26	0.36	0.06	0.31	0.32	0.15	0.45	0.44	0.01

Table V-2 shows the correlation coefficient (R), slope (m) and number of data point (n) from the linear regression analyses between the two stations for the PM, VOC and carbonyl species. The associations are high ( $R > 0.80$ ) with the exception of OC and sulfate. For OC, the agreement improves considerably in 2008 ( $R = 0.85$ ,  $m = 0.76$ ,  $n = 31$ ). The moderate association of sulfate is mainly driven by a few outliers. With the removal of four outliers out of 63 data points, the correlation is good ( $R = 0.80$ ,  $m = 0.83$ ).

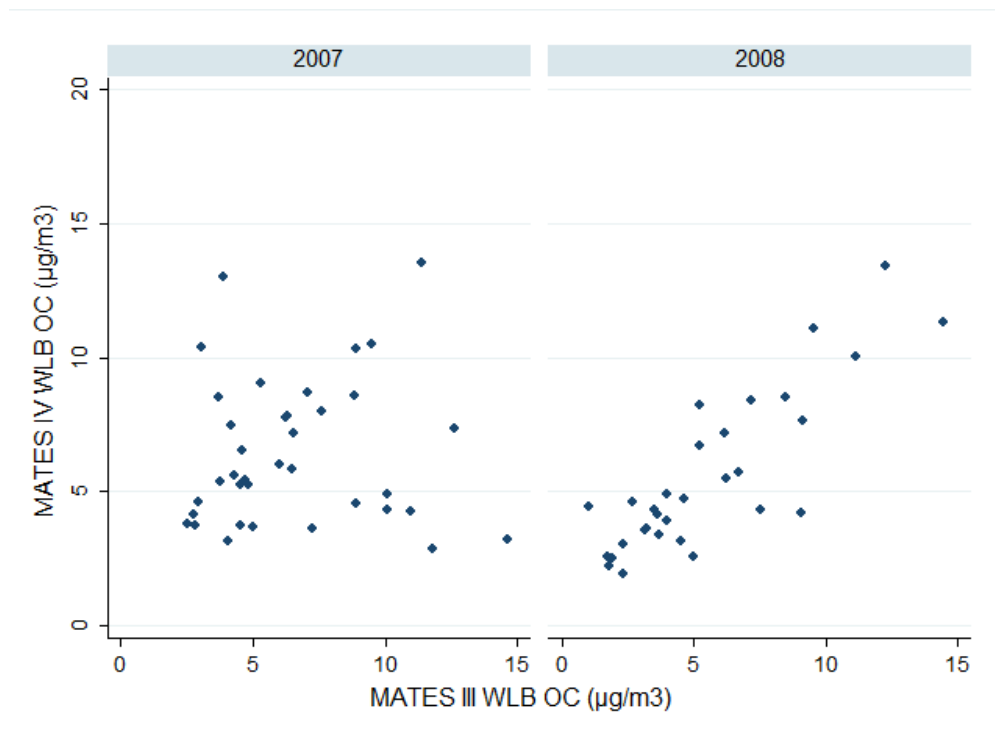
**Table V-2. Correlation coefficient (R), slope (m) and number of data point (n) from linear regression analyses between the MATES III and MATES IV West Long Beach sites.**

	PM2.5 Mass	PM2.5 OC	PM2.5 EC	Nitrate	Sulfate	1,3-Butadiene	Benzene	Formaldehyde	Acetaldehyde
R	0.92	0.46	0.89	0.85	0.68	0.94	0.91	0.91	0.94
m	0.90	0.40	1.02	0.94	0.68	1.19	1.00	0.77	0.97
n	72	68	67	64	63	84	86	90	90

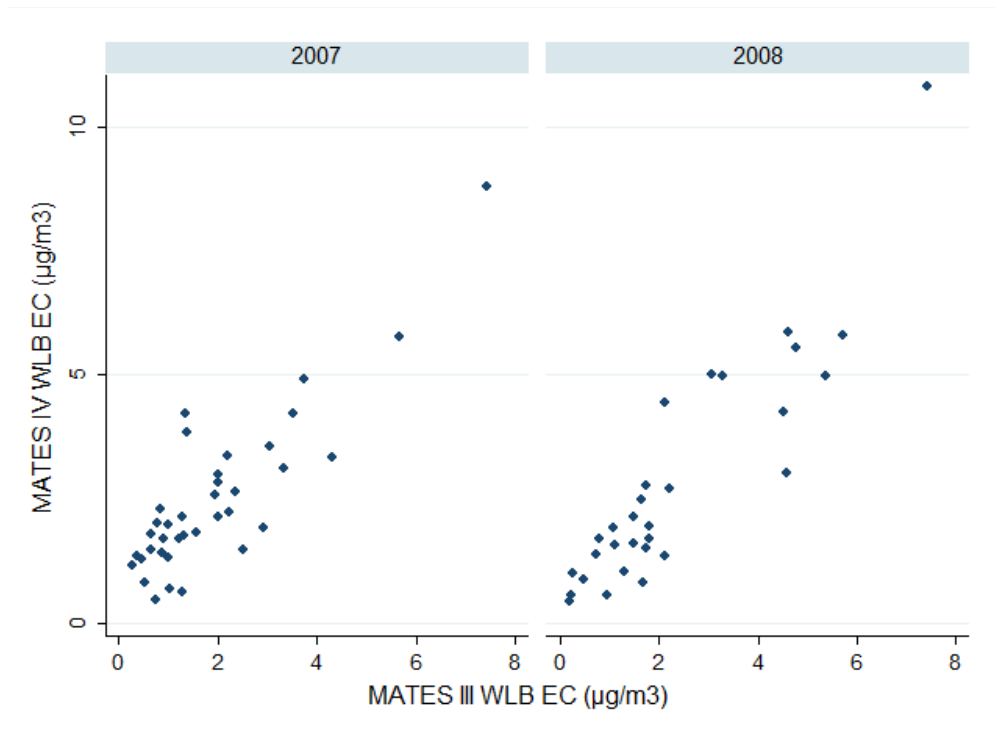
The scatterplots between the two monitoring stations, segregated by year, are presented in Figures V-2 to V-10. Overall, the concentrations of PM, VOC and carbonyl species at MATES IV WLB correlate well with those from MATES III WLB.



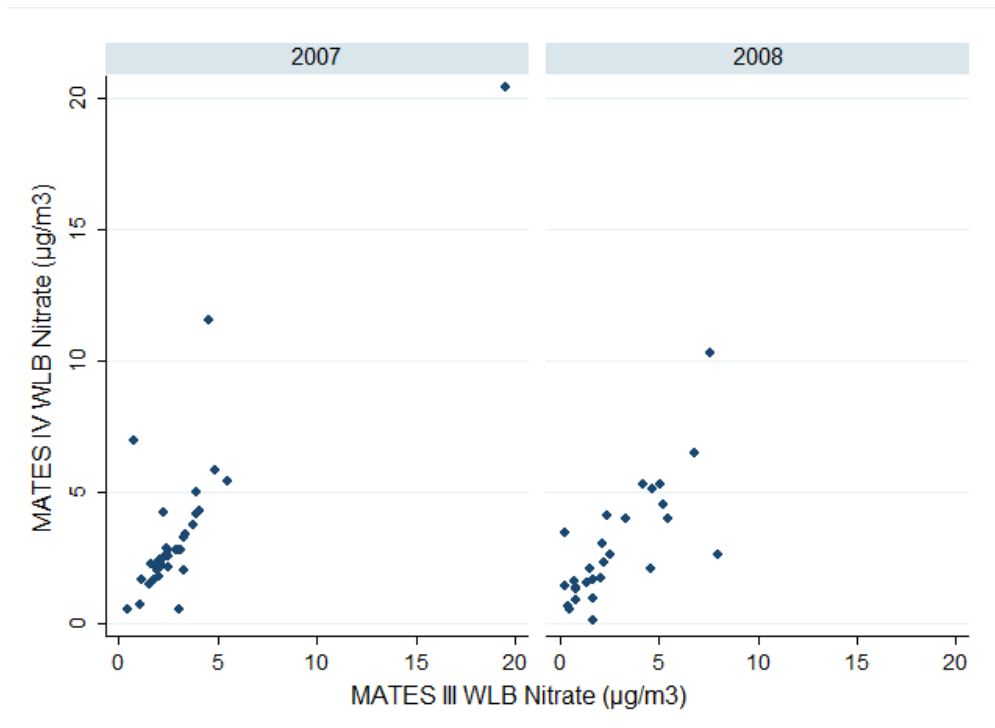
**Figure V-2. Scatterplot of PM<sub>2.5</sub> mass concentration between the MATES III and MATES IV West Long Beach sites.**



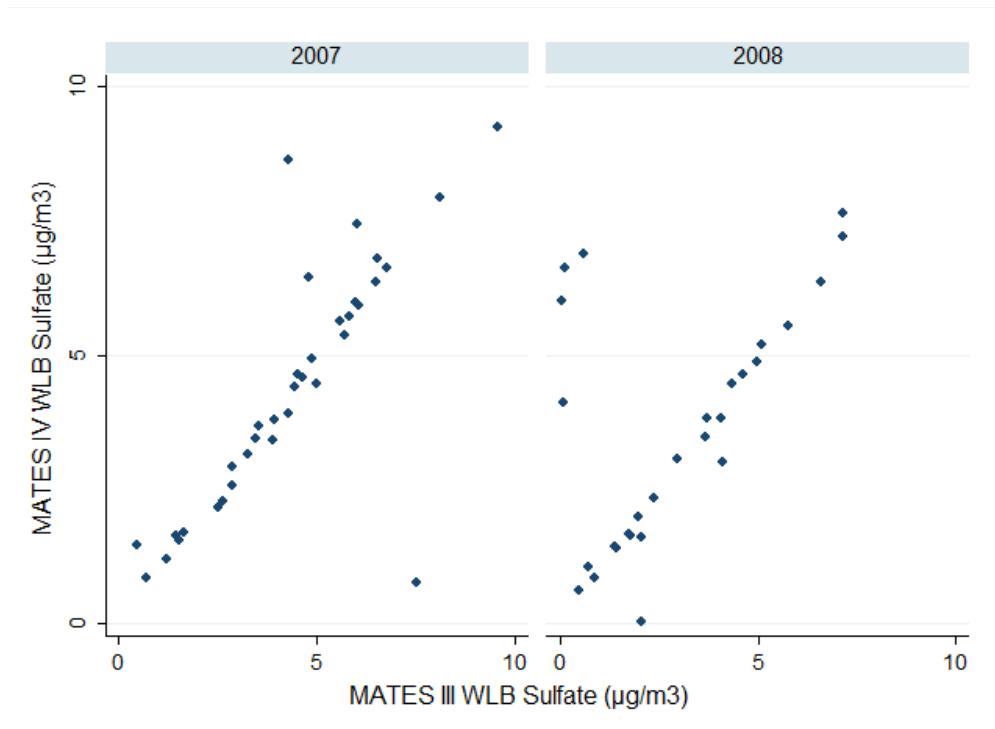
**Figure V-3. Scatterplot of PM<sub>2.5</sub> OC concentration between the MATES III and MATES IV West Long Beach sites.**



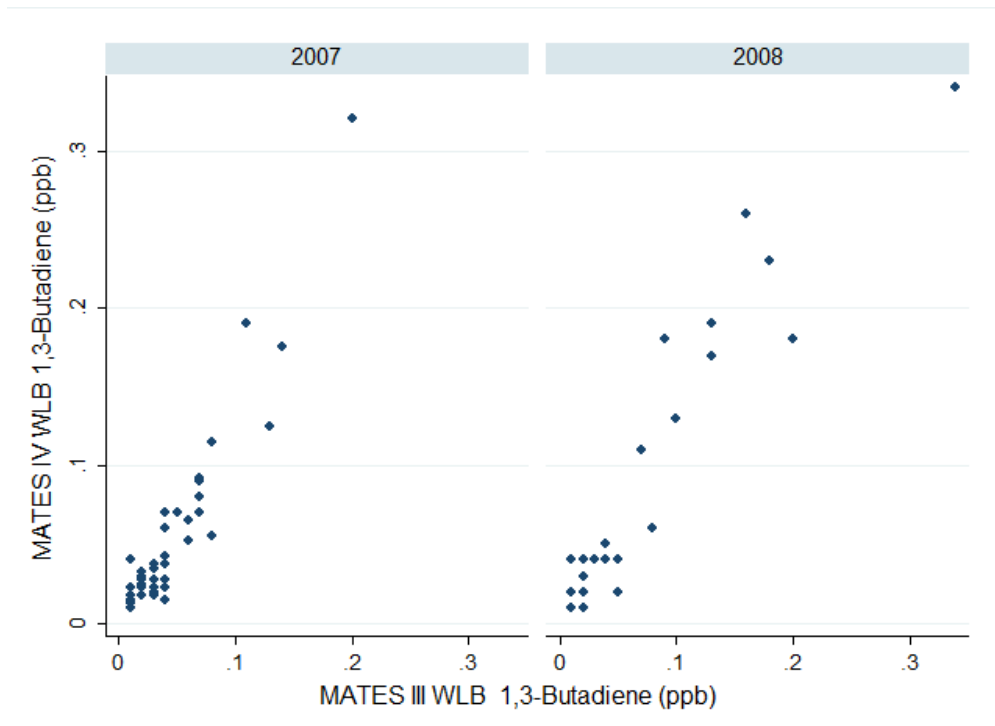
**Figure V-4. Scatterplot of PM<sub>2.5</sub> EC concentration between the MATES III and MATES IV West Long Beach sites.**



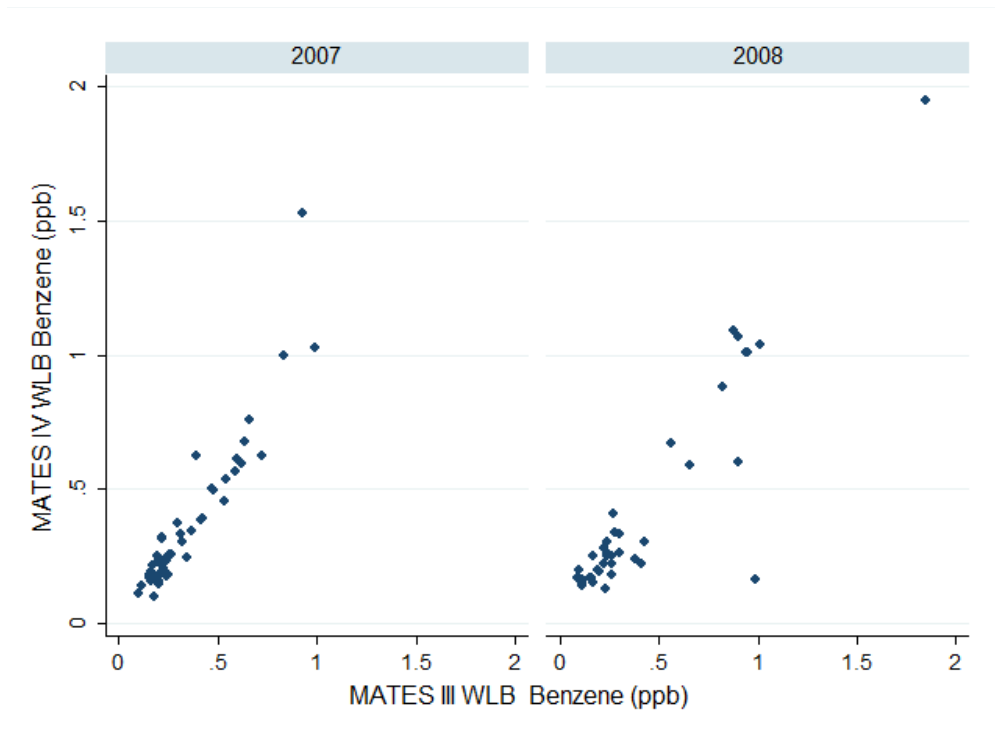
**Figure V-5. Scatterplot of nitrate concentration between the MATES III and MATES IV West Long Beach sites.**



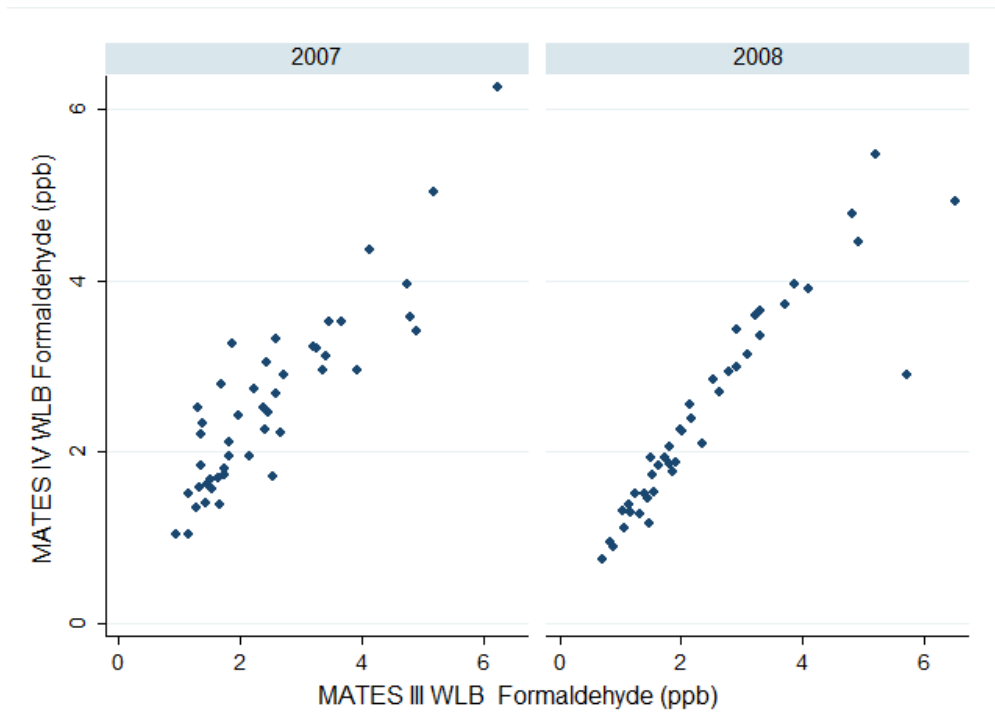
**Figure V-6. Scatterplot of sulfate concentration between the MATES III and MATES IV West Long Beach sites.**



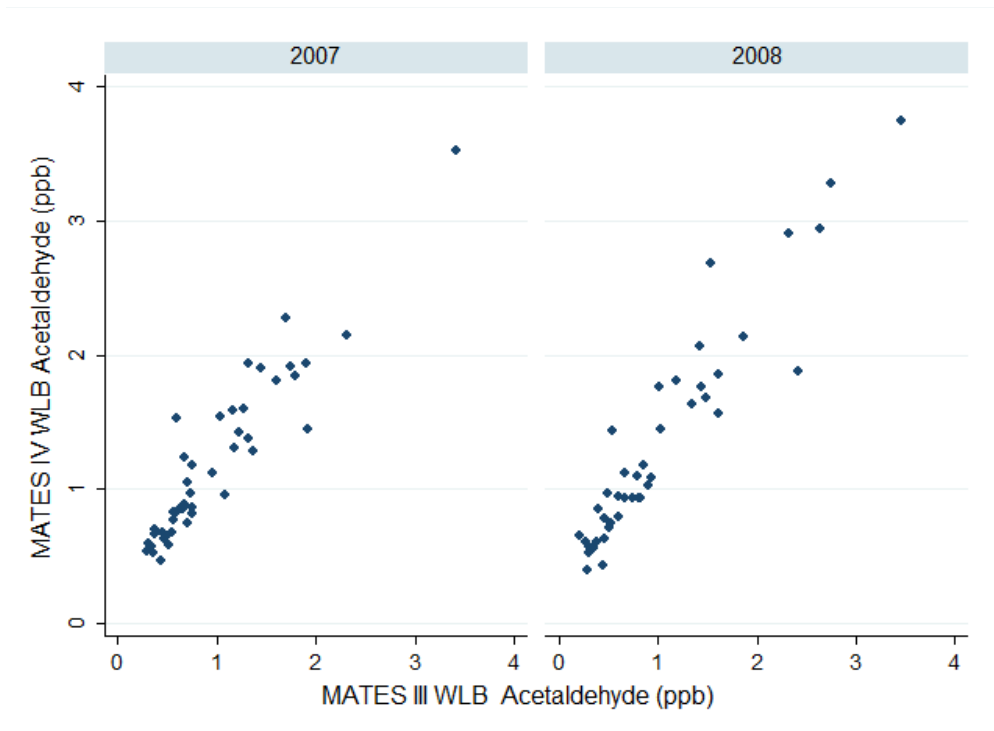
**Figure V-7. Scatterplot of 1,3-butadiene concentration between the MATES III and MATES IV West Long Beach sites.**



**Figure V-8. Scatterplot of benzene concentration between the MATES III and MATES IV West Long Beach sites.**



**Figure V-9. Scatterplot of formaldehyde concentration between the MATES III and MATES IV West Long Beach sites.**



**Figure V-10. Scatterplot of acetaldehyde concentration between the MATES III and MATES IV West Long Beach sites.**