Roseville Railyard Air Monitoring Project (RRAMP) Analysis of Data from Year 2007



PCAPCD Board Meeting August 14, 2008

Monitoring & Data Analysis Improvement in 2007

Special Filter Treatment

Pre-fired treatment for quartz filter

Sampling Schedule

Filed blank samples collection

Data Analysis Procedures

- Apply the same data analysis procedure developed for 2006 analysis
- Re-analyze 2005 data by 2006 analysis procedure

Results

- Downwind site DPM estimates
- Three-year trend analysis

Summary of Data Collection in Summer 2007

	Denio Site						
	Wind			EBAM			
	Spd/Dir	NO/NOx	Aeth BC	PM2.5	Teflon	Quartz	
	(EBAM)	(TECO-42)	(A330)	(2238)	Filter	Filter	
monitoring period	6/15~10/15	6/15~10/15	6/15~10/15	6/15~10/15	6/17~10/15	6/16~10/14	
total observations	2952	2952	34317	2952	41	41	
count	2952	2951	33827	2952	36	41	
%	100%	100%	98.6%	100%	88%	100%	

		Pool Site						
	Wind			EBAM				
	Spd/Dir	NO/NOx	Aeth BC	PM2.5	Teflon	Quartz		
	(EBAM)	(TECO-42)	(A479)	(2237)	Filter	Filter		
monitoring period	6/15~10/15	6/15~10/15	6/15~10/15	6/15~10/15	6/17~10/15	6/16~10/14		
total observations	2952	2952	34317	2952	41	41		
count	2952	2943	34105	2952	41	41		
%	100%	99.7%	99.4%	100%	100%	100%		

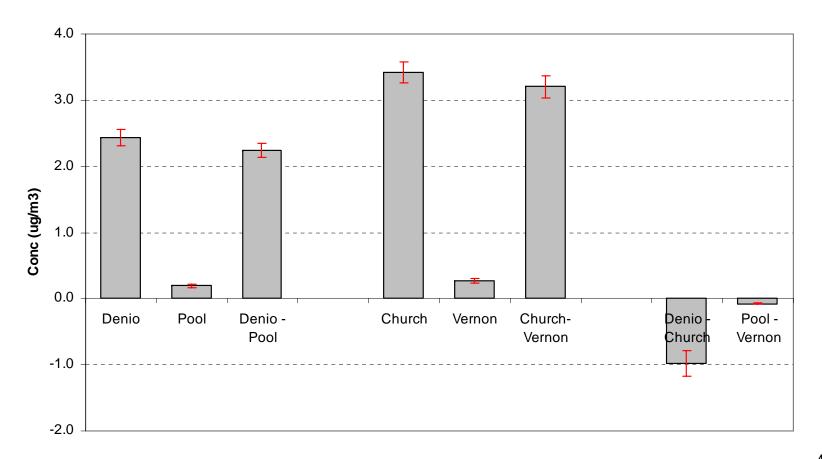
		Church St. Site						
	Wind			BAM				
	Spd/Dir	NO/NOx	Aeth BC	PM2.5	Teflon	Quartz		
	(EBAM)	(TECO-42)	(624)	(4514)	Filter	Filter		
monitoring period	6/15~10/15	6/15~10/15	6/15~10/15	6/15~10/15	6/17~10/15	6/16~10/14		
total observations	2952	2952	34317	2952	41	4	41	
count	2952	2946	33644	2952	41	4	41	
%	100%	99.8%	98.0%	100%	100%	100%		

		Vernon St. Site						
	Wind			BAM				
	Spd/Dir	NO/NOx	Aeth BC	PM2.5	Teflon	Quartz		
	(EBAM)	(TECO-42)	(623)	(4515)	Filter	Filter		
monitoring period	6/15~10/15	6/15~10/15	6/15~10/15	6/15~10/15	6/17~10/15	6/16~10/14		
total observations	2952	2952	34317	2952	41		41	
count	2952	2948	31198	2952	41		40	
%	100%	99.9%	90.9%	100%	100%	989	%	



Black Carbon 7 Hour Average (Upwind/Downwind)

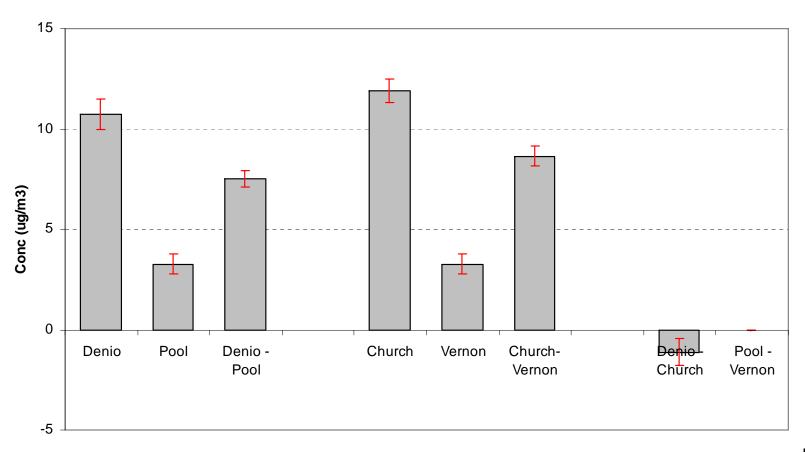
7-hour (22-05) average BC Concentrations





BAM PM_{2.5} 7 Hour Average (Upwind/Downwind)

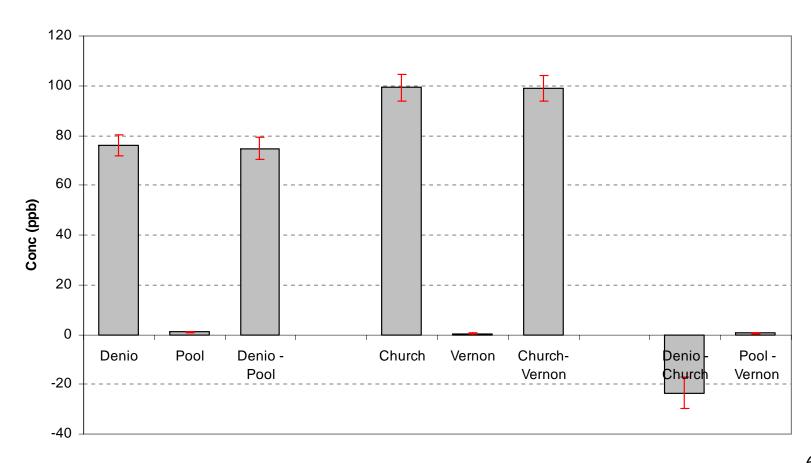
7-hour (22-05) average PM2.5 Concentrations





NO 7 Hour Average (Upwind/Downwind)

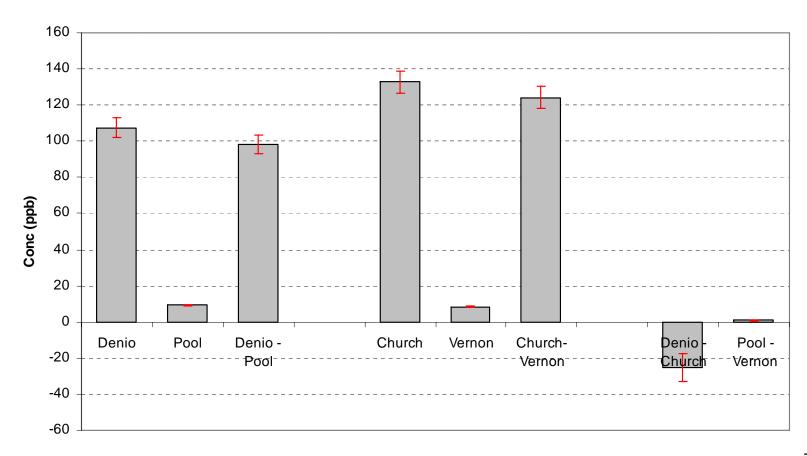
7-hour (22-05) average NO Concentrations





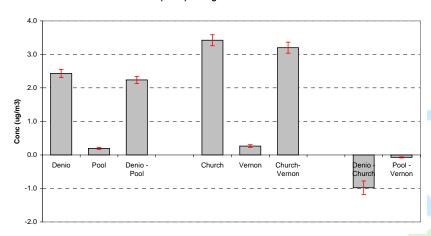
NOx 7 Hour Average (Upwind/Downwind)

7-hour (22-05) average NOx Concentrations

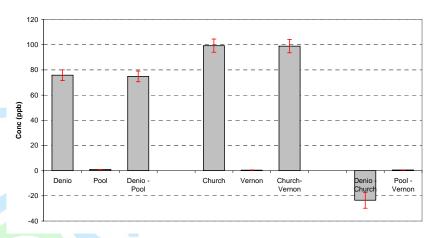


BC, PM_{2.5}, NO, and NOx 7 hour average (upwind/downwind)

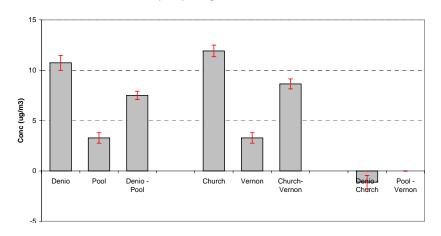




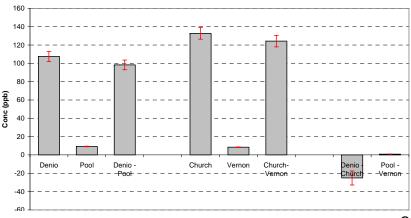
7-hour (22-05) average NO Concentrations



7-hour (22-05) average PM2.5 Concentrations

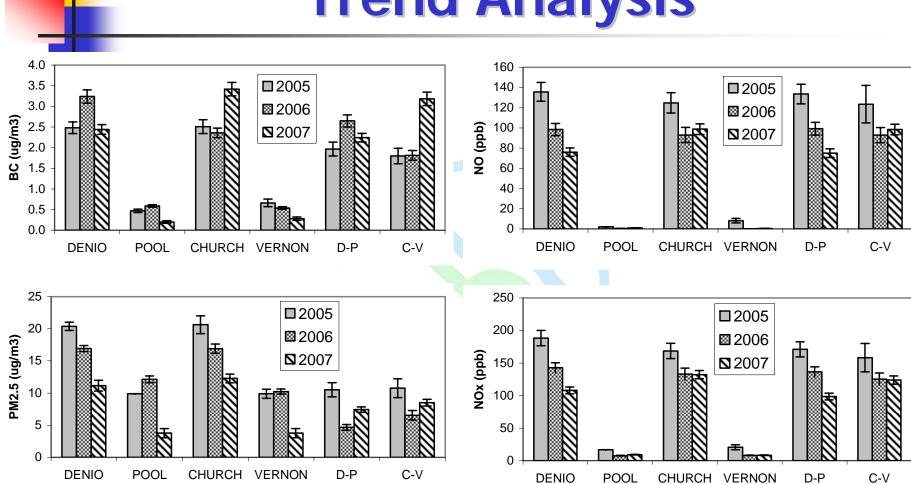


7-hour (22-05) average NOx Concentrations



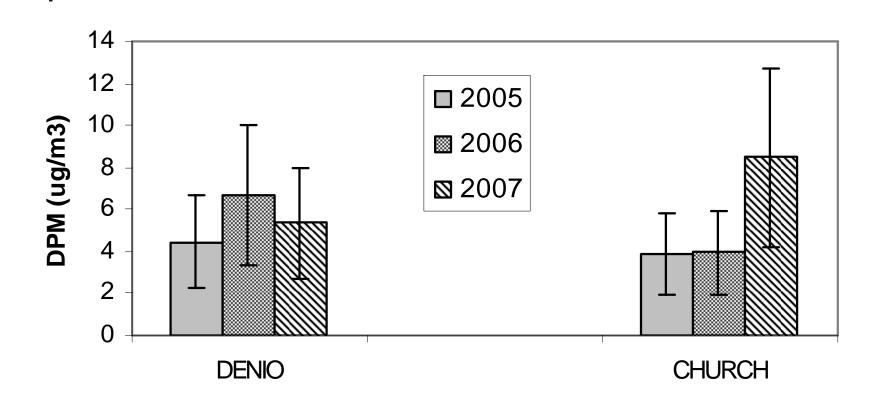


Trend Analysis



*Church/Vernon pair only had one month measurements in 2005

Downwind Site DPM Estimates



Summary of Data Analysis

2007 results were similar to those presented by 2005 & 2006

- Downwind sites show statistically significant impacts of BC, NO, NOx, and PM2.5
- In 2007 the difference between Church/Vernon pair is larger than Denio/Pool pair

Summary of Trend Analysis

- Downwind site measurements represents a decline for PM2.5, NO, and NOx
- No clear temporal pattern showing during three summers monitoring
- No pattern can be discerned for DPM estimates based on a large uncertainty to the calculation

2008 Summer Monitoring

Presume to catch the influence from implementation of mitigations happened in mid 2007

Funding: \$50,000 from EPA Region 9 & \$30,000 from UPRR

 Another data analysis report will be available in mid 2009 including DPM estimates and a 4-year trend analysis