

SOUTH COUNTY COMMUNITY MONITORING PROJECT

Appendix C – Nipomo Study Area 24 hour plots and Summary Data

This document presents spatial data displays of the 24 hour average PM₁₀ concentrations for the Nipomo study area for each day of the study period where at least one site in that area exceeded the state 24 hour health standard of 50 ug/m³; the 24-hour averages were calculated from the hourly PM₁₀ data measured at each site. For a 24 hour average to be valid, at least 20 of the 24 hours from that sampler must be valid (>80%). If a sampler's 24 hour value did not meet this validation criterion, the 24-hour average for that sampler is not shown and the site name/number at the top of the bar graph is replaced with OFF, indicating no data for that monitor. The scale for each bar graph is the same. Each segment represents 25 ug/m³, with a full scale reading equal to a 24 hour average of 175 ug/m³. Bar graphs for permanent monitors are presented in red.

Below each spatial data display is a table containing summary data from all permanent monitors in the area. The second row of the table presents the 24 hour PM₁₀ average from the sites listed in the first row; PM₁₀ is not measured at either the Grover Beach or S1 sites shown in the table, so only wind speed and wind direction data are presented for those sites. The third row presents the maximum hourly PM₁₀ value for the day (no PM₁₀ at Grover, S1). The fourth row presents the wind speed in miles per hour and the fifth row presents the corresponding wind direction, for the hour of the day where the maximum PM₁₀ value was measured. For sites without PM₁₀ (Grover, S1), the wind data presented is for the hour of the day where the maximum PM₁₀ value was measured at CDF. The sixth row presents the average PM_{2.5}/10 ratio for the day; this ratio is only calculated when the PM₁₀ concentration is greater than 70 ug/m³ to allow examination of the ratio during dust events and exclude periods where measurements represent non-dust periods. The seventh row presents the PM_{2.5}/10 ratio for the hour when the maximum PM₁₀ value was recorded. The eighth row presents the number of hours with PM₁₀>70 ug/m³ that were used for the average PM_{2.5}/10 ratio calculation.

To the right of the summary table is a text box with notes about any significant observations from the individual hourly data. Each day's dust event intensity is categorized using the following protocol:

Category	Criteria
Minor Event	Only one permanent monitoring site 24 hour average>50 ug/m ³
Moderate Event	Two permanent monitoring sites 24 hour average>50 ug/m ³ , but both less than 100 ug/m ³
Significant Event	Two permanent monitoring sites 24 hour average>50 ug/m ³ and at least one>100 ug/m ³
Very Significant Event	At least one permanent monitoring site 24 hour average>150 ug/m ³

For some of the higher PM days or days with an unusual data pattern, a link to a video of the hourly spatial display is provided in the text box. To view the video, simply hold down the "ctrl" key and click the link; it is recommended for best viewing to select the full screen display on the video. The video can be stopped on any particular hour to examine the data for that hour, and specific hours can be selected to be displayed by moving the progress bar at the bottom of the video. **Note that the scale on the PM₁₀ bar graphs on the 24 hour plots is different than the hourly display on the video graphs. Each segment**

on the 24 hour bar graphs presented in this document below is 25 ug/m3, while each segment on the hourly bar graphs presented in the video links is 100 ug/m3.

Below is a table of URL's for each linked hourly spatial display video that can be manually entered into your internet browser to access the videos:

Spatial Display Hourly Video	URL
4/1/12	http://youtu.be/pghpRsUkNLg
4/4/12	http://youtu.be/l6a7RWnaV68
4/18/12	http://youtu.be/K7UKMpB6aac
4/19/12	http://youtu.be/iMBx8yb5s0I
4/28/12	http://youtu.be/JrSN1SURFBM
5/15/12	http://youtu.be/VP7TxuRWI0I
5/22/12	http://youtu.be/FyJecCEEeLc
5/23/12	http://youtu.be/NEFoarZPIOM
5/24/12	http://youtu.be/OVtE0HbDg4Y
5/25/12	http://youtu.be/GTWC6T4LrTk

Below is a guideline for interpreting the hourly spatial display when viewing a video link:

- 1) *Bar Graph presents hourly PM₁₀ concentration with each segment of graph=100ug/m3, full scale=500ug/m3*
- 2) *Circle "pie graph" presents hourly wind data. Ignore the north segment; wind direction is from other segment toward center. Wind speed in mph is presented as text below each circle.*
- 3) *Approximate location of monitors configured with wind sensors is the center of circle. Approximate location of monitors without wind sensors (and therefore without circle graph) is the bottom of bar graph.*
- 4) *Red Monitors are District/State Parks permanent monitors with wind sensors at 10 meter height.*
- 5) *Black Monitors are temporary EBAM monitors with wind sensors at approximately 2 meters to 5 meters height.*
- 6) *If a monitor's PM₁₀ value is invalid or offline for the hour presented, "OFF" will be present at top of bar graph. For hours with valid PM₁₀ values, the site name/number is presented on the top of the bar graph.*
- 7) *If a monitor's wind data is invalid or offline for the hour presented, Circle graph will not be presented and #Value will appear where the wind speed is normally located.*

As discussed above, presented below are the spatial data displays of the 24 hour average PM₁₀ concentration at each monitoring site in the Nipomo study area for each day of the project where at least one site in that area exceeded the state 24 hour health standard of 50 ug/m3. Each line on the bar graphs shown in the figures represents 25 ug/m3, with a full scale reading equal to a 24 hour average of 175 ug/m3. For reference purposes, the bar graphs for the 3 APCD permanent monitoring sites (CDF, Mesa2 and NRP) are colored red, and the bar graphs for each temporary project site are in blue.

3/19/12

24 hr. Average PM10



DATE	3/19/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Minor event. CDF is the only site over state standard.
24 AVG	PM10		56.3	30.1		20.6	21.3	
Hr. Max	PM10		279.0	166.0		92.0	86.0	
at Max	WS	16.3	15.5	19.7	27.3	9.9	8.1	
at Max	WD	296.0	306.0	303.0	293.8	277.0	290.0	
Average	2.5/10 ratio		13.8%	16.8%			17.3%	
at Max	2.5/10 ratio		12.9%	17.5%			22.1%	
Count	2.5/10 ratio		5	4			2	

3/29/12

24 hr. Average PM10



DATE	3/29/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Minor event. CDF is the only site over state standard.
24 AVG	PM10		54.3	39.5		22.8	20.5	
Hr. Max	PM10		242.0	189.0		59.0	39.0	
at Max	WS	9.5	12.1	14.2	21.8	7.5	8.5	
at Max	WD	289.0	309.0	312.0	289.5	273.0	279.0	
Average	2.5/10 ratio		17.7%	18.1%			#DIV/0!	
at Max	2.5/10 ratio		18.6%	19.6%			0.0%	
Count	2.5/10 ratio		5	5			0	

3/30/12

24 hr. Average PM10



DATE	3/30/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Minor event. CDF is the only site over state standard.
24 AVG	PM10		64.0	42.8		27.7	19.7	
Hr. Max	PM10		303.0	218.0		90.0	44.0	
at Max	WS	11.4	14.6	15.2	25.8	7.0	11.4	
at Max	WD	289.0	311.0	303.0	289.0	272.0	278.0	
Average	2.5/10 ratio		20.1%	19.0%			#DIV/0!	
at Max	2.5/10 ratio		19.1%	17.0%			0.0%	
Count	2.5/10 ratio		6	4			0	

4/1/12

24 hr. Average PM10



DATE	4/1/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		83.8	68.0		22.4	36.4
Hr. Max	PM10		410.0	296.0		59.0	134.0
at Max	WS	14.3	17.2	22.9	31.4	7.1	9.0
at Max	WD	298.0	306.0	304.0	294.5	307.0	313.0
Average	2.5/10 ratio		15.3%	16.3%			22.9%
at Max	2.5/10 ratio		14.4%	15.9%			24.7%
Count	2.5/10 ratio		7	7			4

Moderate Event. Winds more northerly inland resulting in impacts in Santa Maria.

[Video Link for 4/1/12 hourly spatial display](#)

4/2/12

24 hr. Average PM10



DATE	4/2/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	
24 AVG	PM10		76.0	58.0		22.0	27.4	Moderate Event. Winds inland at beginning of event northerly, no impacts in vicinity of NRP. Hour 15, NRP winds shift due west, significant impacts at NRP measured. Hour 16, winds at NRP shift back to NW and levels drop at NRP.
Hr. Max	PM10		427.0	307.0		166.0	72.0	
at Max	WS	8.1	12.9	15.0	25.7	8.0	10.1	
at Max	WD	345.0	304.0	298.0	290.3	277.0	275.0	
Average	2.5/10 ratio		20.4%	20.3%			25.0%	
at Max	2.5/10 ratio		19.9%	18.6%			25.0%	
Count	2.5/10 ratio		6	5			1	

4/3/12

24 hr. Average PM10



DATE	4/3/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Minor Event.
24 AVG	PM10		57.1	43.9		32.3	32.7	
Hr. Max	PM10		197.0	150.0		93.0	46.0	
at Max	WS	9.0	11.3	11.1	20.7	5.8	2.0	
at Max	WD	292.0	308.0	311.0	288.6	264.0	175.0	
Average	2.5/10 ratio		20.0%	21.5%			#DIV/0!	
at Max	2.5/10 ratio		21.3%	20.7%			0.0%	
Count	2.5/10 ratio		6	5			0	

4/4/12

24 hr. Average PM10



DATE	4/4/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Significant Event. Winds shift more and more northerly as event progresses. The northerly shift pushes plume south resulting in significant impacts in Santa Maria. Video Link for 4/4/12 hourly spatial display
24 AVG	PM10		105.6	85.4		22.5	55.3	
Hr. Max	PM10		545.0	378.0		62.0	215.0	
at Max	WS	12.1	16.0	23.2	29.7	9.3	14.3	
at Max	WD	300.0	307.0	313.0	295.1	297.0	292.0	
Average	2.5/10 ratio		18.5%	20.2%			18.8%	
at Max	2.5/10 ratio		19.4%	19.0%			23.3%	
Count	2.5/10 ratio		6	6			7	

4/5/12

24 hr. Average PM10



DATE	4/5/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Moderate Event. Possible local influence to 14A from ag. operations upwind, or is it just in plume centerline? When winds shift more north on hour 15 14A approaches Mesa2 reading.
24 AVG	PM10		94.5	69.0		18.9	41.8	
Hr. Max	PM10		466.0	299.0		72.0	129.0	
at Max	WS	13.8	18.1	24.5	30.6	10.1	14.1	
at Max	WD	291.0	305.0	302.0	294.7	293.0	298.0	
Average	2.5/10 ratio		18.8%	20.6%			17.2%	
at Max	2.5/10 ratio		18.5%	18.1%			22.5%	
Count	2.5/10 ratio		8	8			6	

4/6/12

24 hr. Average PM10



DATE	4/6/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Moderate Event. Unusual spike in data at 10B on hour 5 with low winds at the time. Significant Impacts at 6A and other sites in region on hour 15 as winds shift from NE to NNW.
24 AVG	PM10		90.0	67.5		18.4	32.5	
Hr. Max	PM10		499.0	342.0		86.0	132.0	
at Max	WS	8.0	14.3	18.2	27.5	5.1	8.3	
at Max	WD	337.0	307.0	305.0	294.2	306.0	270.0	
Average	2.5/10 ratio		19.8%	20.5%			17.1%	
at Max	2.5/10 ratio		20.8%	19.9%			19.7%	
Count	2.5/10 ratio		7	7			4	

4/14/12

24 hr. Average PM10



DATE	4/14/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Significant Event. Event begins earlier than most (Hr. 11).
24 AVG	PM10		102.5	54.0		28.5	28.1	
Hr. Max	PM10		368.0	185.0		78.0	57.0	
at Max	WS	16.1	15.9	20.8	28.4	9.0	9.6	
at Max	WD	283.0	302.0	301.0	293.4	285.0	283.0	
Average	2.5/10 ratio		14.6%	17.4%			#DIV/0!	
at Max	2.5/10 ratio		14.9%	15.7%			0.0%	
Count	2.5/10 ratio		7	7			0	

4/15/12

24 hr. Average PM10



DATE	4/15/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria		
24 AVG	PM10		86.5	59.2		29.9	23.5	<p>Moderate Event. Inland winds out of west, resulting in impacts in the vicinity of NRP. Hour 15, winds shift northward, shifting plume to the south.</p>	
Hr. Max	PM10		387.0	227.0		158.0	36.0		
at Max	WS		15.7	12.7	13.8	25.4	7.2		11.9
at Max	WD		274.0	305.0	309.0	289.4	272.0		283.0
Average	2.5/10 ratio		18.0%	20.8%			#DIV/0!		
at Max	2.5/10 ratio		18.3%	21.1%			0.0%		
Count	2.5/10 ratio		7	7			0		

4/16/12

24 hr. Average PM10



DATE	4/16/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Minor Event. Consistent westerly winds result in increased impacts in northeastern portion of study area.
24 AVG	PM10		67.3	48.3		35.7	27.7	
Hr. Max	PM10		296.0	204.0		133.0	44.0	
at Max	WS	8.2	9.4	13.3	25.1	7.2	4.7	
at Max	WD	310.0	319.0	300.0	289.7	270.0	297.0	
Average	2.5/10 ratio		23.3%	24.6%			#DIV/0!	
at Max	2.5/10 ratio		22.0%	21.6%			0.0%	
Count	2.5/10 ratio		6	5			0	

4/17/12

24 hr. Average PM10



DATE	4/17/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	
24 AVG	PM10		77.4	60.1		27.2	28.6	Moderate Event. Missing hours at Mesa2 and CDF due to maintenance.
Hr. Max	PM10		333.0	265.0		85.0	62.0	
at Max	WS	9.9	11.2	15.6	24.5	7.0	11.2	
at Max	WD	301.0	323.0	318.0	291.0	282.0	281.0	
Average	2.5/10 ratio		#DIV/0!	24.0%			#DIV/0!	
at Max	2.5/10 ratio			25.7%			0.0%	
Count	2.5/10 ratio		0	6			0	

4/18/12

24 hr. Average PM10



DATE	4/18/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	
24 AVG	PM10		90.8	76.3		28.8	33.5	Moderate Event. Wind shift at hour 15 pushes plume to south. Hour 11 at S-E influenced by local activity on roadway, as observed by staff and obvious in data (data from S-E not presented as does not meet representativeness for 24 hour sample)
Hr. Max	PM10		480.0	427.0		76.0	91.0	
at Max	WS	11.5	13.9	17.8	27.6	8.6	10.5	
at Max	WD	296.0	315.0	317.0	293.7	304.0	272.0	
Average	2.5/10 ratio		23.0%	23.1%			26.2%	
at Max	2.5/10 ratio		21.0%	21.5%			29.7%	
Count	2.5/10 ratio		7	7			2	Video link for 4/18/12 hourly spatial display

4/19/12

24 hr. Average PM10



DATE	4/19/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	
24 AVG	PM10		69.8	63.5		16.8	31.4	<p>Moderate Event. Early in event winds out of east for 6A, 13A, and NRP. Hour 12 winds in this region shift to westerly, impacts in this region present, Hour 13 winds in this area shift north and no impacts.</p> <p>Video link for 4/19/12 hourly spatial display</p>
Hr. Max	PM10		248.0	222.0		66.0	66.0	
at Max	WS	8.8	10.2	12.0	23.0	1.8	9.9	
at Max	WD	291.0	308.0	307.0	292.6	289.0	282.0	
Average	2.5/10 ratio		22.5%	26.5%			#DIV/0!	
at Max	2.5/10 ratio		25.0%	26.1%			0.0%	
Count	2.5/10 ratio		8	6			0	

4/27/12

24 hr. Average PM10



DATE	4/27/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Moderate Event. Unexplained spike in data for 2A hour 17. Spike in data for 12A hour 13, possibly due to activity on adjacent dirt road, wind speed in area lower on hour 13 than other hours of day. Northerly component of winds push plume south impacting Santa Maria.
24 AVG	PM10		102.5	72.5		20.2	49.5	
Hr. Max	PM10		471.0	342.0		73.0	228.0	
at Max	WS	11.0	16.8	21.8	28.4	5.1	12.5	
at Max	WD	307.0	306.0	312.0	295.5	302.0	287.0	
Average	2.5/10 ratio		17.6%	20.8%			20.8%	
at Max	2.5/10 ratio		17.6%	18.7%			24.0%	
Count	2.5/10 ratio		7	7			5	

4/28/12

24 hr. Average PM10



DATE	4/28/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		123.9	104.4		45.4	38.3
Hr. Max	PM10		469.0	374.0		112.0	72.0
at Max	WS	12.6	13.0	16.2	28.2	4.9	13.0
at Max	WD	296.0	314.0	315.0	290.7	243.0	290.0
Average	2.5/10 ratio		19.0%	20.5%			13.9%
at Max	2.5/10 ratio		18.1%	22.2%			13.9%
Count	2.5/10 ratio		9	8			1

Significant Event. Lower PM2.5/10 at Santa Maria as compared to Mesa2 and CDF could indicate significant contribution from ag. fields at Santa Maria. However, wind speeds lower than many days where ratio indicates little impact from fields. Most likely ratio due to only one hour over threshold for calculation.

[Video link to 4/28/12 hourly spatial display](#)

5/4/12

24 hr. Average PM10



DATE	5/4/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Moderate Event. Possible minor influence from local source at 13A for hours 12-13.
24 AVG	PM10		136.7	90.0		43.7	34.1	
Hr. Max	PM10		477.0	312.0		120.0	81.0	
at Max	WS	15.2	15.3	20.1	31.3	8.4	12.8	
at Max	WD	296.0	311.0	301.0	291.5	277.0	289.0	
Average	2.5/10 ratio		18.9%	20.2%			19.8%	
at Max	2.5/10 ratio		19.7%	18.6%			21.1%	
Count	2.5/10 ratio		10	9			4	

5/5/12

24 hr. Average PM10



DATE	5/5/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Moderate Event. Minor unexplained spike in data for site 15A hour 9, with low wind speed in area.
24 AVG	PM10		84.7	67.1		33.3	45.3	
Hr. Max	PM10		274.0	226.0		65.0	82.0	
at Max	WS	8.2	13.1	16.4	N/A	4.2	12.1	
at Max	WD	298.0	310.0	308.0	N/A	2.0	288.0	
Average	2.5/10 ratio		26.2%	26.5%			24.4%	
at Max	2.5/10 ratio		25.2%	23.0%			24.4%	
Count	2.5/10 ratio		12	7			1	

5/6/12

24 hr. Average PM10



DATE	5/6/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		71.7	55.4		54.3	43.5
Hr. Max	PM10		247.0	157.0		111.0	56.0
at Max	WS	7.8	10.8	12.8	N/A	7.5	1.8
at Max	WD	320.0	315.0	296.0	N/A	282.0	272.0
Average	2.5/10 ratio		27.5%	27.5%			#DIV/0!
at Max	2.5/10 ratio		26.7%	24.8%			0.0%
Count	2.5/10 ratio		6	4			0

Moderate Event. Site 13A experiences a series of hours that appear to be influenced by local source. Hour 11 PM10>1000 ug/m3 at 13A while winds insufficient (3.8 mph) to entrain particles. Likely due to activity on roads/fields upwind.

5/7/12

24 hr. Average PM10



DATE	5/7/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	No significant contribution from dunes. Only site that exceeded state standard was SE-E. Low wind speed most of day with some southerly flow.
24 AVG	PM10		43.3	40.0		40.3	45.2	
Hr. Max	PM10		69.0	77.0		71.0	83.0	
at Max	WS	3.8	2.6	1.6	N/A	5.7	5.6	
at Max	WD	224.0	239.0	204.0	N/A	267.0	282.0	
Average	2.5/10 ratio		#DIV/0!	36.3%			25.4%	
at Max	2.5/10 ratio			33.8%			26.7%	
Count	2.5/10 ratio		0	2			2	

5/11/12

24 hr. Average PM10



DATE	5/11/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	No significant contribution from dunes. Very low wind speed across most of study area. Stagnation likely responsible for most elevated readings.
24 AVG	PM10		36.1	29.5		35.5	39.7	
Hr. Max	PM10		63.0	50.0		60.0	60.0	
at Max	WS	2.4	2.0	3.2	6.5	4.7	1.6	
at Max	WD	267.0	203.0	130.0	250.2	259.0	86.0	
Average	2.5/10 ratio		#DIV/0!	#DIV/0!			#DIV/0!	
at Max	2.5/10 ratio						0.0%	
Count	2.5/10 ratio		0	0			0	

5/12/12

24 hr. Average PM10



DATE	5/12/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		28.7	27.8		31.7	43.3
Hr. Max	PM10		42.0	43.0		42.0	55.0
at Max	WS	1.3	2.7	1.3	2.5	5.1	1.8
at Max	WD	224.0	269.0	294.0	251.5	298.0	245.0
Average	2.5/10 ratio		#DIV/0!	#DIV/0!			#DIV/0!
at Max	2.5/10 ratio						0.0%
Count	2.5/10 ratio		0	0			0

No Significant contribution from dunes. Stagnant wind conditions across region. Spike at SE-E of >500ug/m for hour 11, likely due to localized activity.

5/15/12

24 hr. Average PM10



DATE	5/15/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		89.8	73.0		49.0	No Data
Hr. Max	PM10		338.0	274.0		131.0	0.0
at Max	WS	8.4	9.7		26.3	7.6	#N/A
at Max	WD	306.0	303.0		288.3	288.0	#N/A
Average	2.5/10 ratio		22.7%	#VALUE!			#DIV/0!
at Max	2.5/10 ratio		23.4%	22.3%			0.0%
Count	2.5/10 ratio		9	7			0

Moderate Event. Hour 16, site 12A >800 ug/m3 with moderate winds, likely due to local activity, other hours at 12A do not show local influence. Hour 17, site 14A >500 ug/m3, likely due to local influence, other hours at 14A match nearby sites indicating no local influence on other hours. [Video link to 5/15/12 hourly spatial display](#) Note: Mesa2 offline hrs 11-13.

5/17/12

24 hr. Average PM10



DATE	5/17/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		69.7	47.7		47.5	No Data
Hr. Max	PM10		228.0	127.0		132.0	65.0
at Max	WS	8.6	11.1	14.5	22.3	5.9	10.1
at Max	WD	283.0	295.0	294.0	290.3	252.0	278.0
Average	2.5/10 ratio		25.6%	30.5%			#DIV/0!
at Max	2.5/10 ratio		19.3%	29.9%			0.0%
Count	2.5/10 ratio		7	5			0

Minor Event. Lack of northerly component to winds in area. This results in higher than typical values in the northern portion of study area relative to southern portion.

5/18/12

24 hr. Average PM10



DATE	5/18/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	
24 AVG	PM10		85.9	65.2		62.3	49.2	Moderate Event. Westerly winds inland cause higher inland reading in north as compared to south than typical pattern.
Hr. Max	PM10		229.0	170.0		134.0	69.0	
at Max	WS	8.0	8.6	13.4	22.2	5.3	9.0	
at Max	WD	290.0	297.0	309.0	294.1	254.0	287.0	
Average	2.5/10 ratio		26.3%	30.6%			#DIV/0!	
at Max	2.5/10 ratio		20.5%	29.4%			0.0%	
Count	2.5/10 ratio		9	7			0	

5/19/12

24 hr. Average PM10



DATE	5/19/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	
24 AVG	PM10		54.7	43.3		47.3	46.2	Minor Event. Higher than normal background levels of PM10 and only minor contributions from dunes. Site 13A experiences a series of hours with higher than nearby site PM10 readings. Winds at 13A moderate, PM10 readings at 13A do not correlate to wind speed, indicating local activity.
Hr. Max	PM10		99.0	85.0		81.0	68.0	
at Max	WS	4.9	8.3	6.4	16.3	5.6	9.0	
at Max	WD	273.0	284.0	273.0	290.9	227.0	288.0	
Average	2.5/10 ratio		25.4%	34.1%			#DIV/0!	
at Max	2.5/10 ratio		24.2%	34.1%			0.0%	
Count	2.5/10 ratio		4	1			0	

5/21/12

24 hr. Average PM10



DATE	5/21/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Minor Event.
24 AVG	PM10		58.5	40.4		40.7	24.0	
Hr. Max	PM10		217.0	136.0		110.0	57.0	
at Max	WS	7.5	11.2	8.9	23.4	4.9	9.4	
at Max	WD	289.0	297.0	287.0	290.8	230.0	274.0	
Average	2.5/10 ratio		21.2%	25.3%			#DIV/0!	
at Max	2.5/10 ratio		22.6%	25.0%			0.0%	
Count	2.5/10 ratio		6	5			0	

5/22/12

24 hr. Average PM10



DATE	5/22/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		146.8	133.7		51.0	54.9
Hr. Max	PM10		604.0	398.0		138.0	121.0
at Max	WS		15.3	11.8		28.7	3.1
at Max	WD		286.0	297.0		293.5	100.0
Average	2.5/10 ratio		21.8%	23.5%			14.7%
at Max	2.5/10 ratio		22.8%	22.9%			20.7%
Count	2.5/10 ratio		13	10			7

Significant Event. Winds have more northerly component inland, pushing plume south of NRP region. Single hour spike PM10>1800 ug/m3 hour 15 at 13A, clearly due to upwind local activity. Other hours at 13A match nearby sites, indicating unaffected by local influence.

[Video link to 5/22/12 hourly spatial display](#)

5/23/12

24 hr. Average PM10



DATE	5/23/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Very Significant Event. Federal 24 hour standard of 150 ug/m3 exceeded at CDF and 8A. Video link for 5/23/12 hourly spatial display
24 AVG	PM10		186.5	143.5		53.7	70.9	
Hr. Max	PM10		593.0	449.0		135.0	166.0	
at Max	WS	10.5	17.2	19.9	30.8	6.8	15.7	
at Max	WD	281.0	301.0	305.0	295.2	279.0	285.0	
Average	2.5/10 ratio		22.4%	22.5%			19.8%	
at Max	2.5/10 ratio		20.2%	18.9%			23.5%	
Count	2.5/10 ratio		14	13			7	

5/24/12

24 hr. Average PM10



DATE	5/24/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		167.1	138.7		66.5	56.1
Hr. Max	PM10		506.0	401.0		165.0	117.0
at Max	WS	13.0	14.1	18.0	33.3	6.9	13.7
at Max	WD	305.0	302.0	315.0	291.5	249.0	279.0
Average	2.5/10 ratio		22.6%	22.4%			24.5%
at Max	2.5/10 ratio		20.9%	22.4%			28.0%
Count	2.5/10 ratio		11	10			6

Very Significant Event. Federal 24 hour standard of 150 ug/m3 exceeded at CDF. Less northerly component to inland winds results in higher relative impacts at NRP and lower relative impacts at Santa Maria than on 5/23/12.

[Video link to 5/25/12 hourly spatial display](#)

5/25/12

24 hr. Average PM10



DATE	5/25/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		62.0	35.8		38.4	37.2
Hr. Max	PM10		132.0	72.0		83.0	80.0
at Max	WS	16.3	16.2	18.8	22.0	11.1	14.8
at Max	WD	282.0	284.0	291.0	287.4	290.0	290.0
Average	2.5/10 ratio		23.2%	18.1%			7.5%
at Max	2.5/10 ratio		26.5%	18.1%			7.5%
Count	2.5/10 ratio		8	1			1

Minor Event. Very unusual meteorological conditions. Winds inland higher than typical and significantly stronger than winds on the dunes. Appears sites S-E and 17A impacted by blowing dust from ag. fields and sites 13A and 12A were impacted by local sources. PM2.5/10 ratio at Santa Maria confirms non-dune sources impacting Santa Maria. See Appendix B for more discussion of this unusual day. [Video link for 5/25/12 hourly spatial display](#)

5/27/12

24 hr. Average PM10



DATE	5/27/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Significant Event. Lack of northerly component on inland winds increased relative impacts at region around NRP.
24 AVG	PM10		121.2	86.0		53.7	24.2	
Hr. Max	PM10		461.0	380.0		172.0	55.0	
at Max	WS	11.5	12.8	16.6	29.9	5.3	12.5	
at Max	WD	302.0	306.0	306.0	292.5	253.0	272.0	
Average	2.5/10 ratio		18.0%	19.3%			#DIV/0!	
at Max	2.5/10 ratio		20.0%	21.8%			0.0%	
Count	2.5/10 ratio		9	7			0	

5/28/12

24 hr. Average PM10



DATE	5/28/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria
24 AVG	PM10		147.8	105.5		64.4	29.7
Hr. Max	PM10		545.0	342.0		231.0	52.0
at Max	WS	12.1	10.8	14.6	28.1	6.9	11.2
at Max	WD	297.0	307.0	302.0	290.2	269.0	272.0
Average	2.5/10 ratio		18.2%	22.5%			#DIV/0!
at Max	2.5/10 ratio		21.8%	22.5%			0.0%
Count	2.5/10 ratio		9	8			0

Significant Event. Lack of northerly component to inland winds keeps plume impacts northerly, with almost no impacts in Santa Maria.

5/29/12

24 hr. Average PM10



DATE	5/29/2012	Grover	CDF	Mesa2	S1	NRP	S.Maria	Minor Event. Westerly winds inland.
24 AVG	PM10		55.4	40.5		41.3	29.8	
Hr. Max	PM10		168.0	85.0		99.0	43.0	
at Max	WS	8.0	10.1	12.4	22.5	3.9	9.2	
at Max	WD	294.0	298.0	307.0	291.6	264.0	277.0	
Average	2.5/10 ratio		22.1%	19.1%			#DIV/0!	
at Max	2.5/10 ratio		20.2%	21.2%			0.0%	
Count	2.5/10 ratio		7	3			0	