

# Salt River Pima-Maricopa Indian Community (SRPMIC)



## 2014 Air Monitoring Network Review

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Community Development Department (CDD)  
Environmental Protection & Natural Resources (EPNR)  
10005 East Osborn Road  
Scottsdale, AZ 85256

## **INTRODUCTION**

The Salt River Pima-Maricopa Indian Community (SRPMIC) has developed an air-monitoring network for measuring ambient concentrations of criteria pollutants and associated meteorological parameters. The operation of these Tribal Monitoring Sites (TMS) follows the United States Environmental Protection Agency (USEPA) State and Local Air Monitoring Sites (SLAMS) guidance recommendations and documents. This Annual Air Monitoring Network Review for 2014 is being submitted by the SRPMIC Community Development Department (CDD) Environmental Protection & Natural Resources (EPNR) Division to the United States Environmental Protection Agency (USEPA) Region 9 as outlined in 40 CFR Part 58.10. In addition, changes made to the network design and special projects conducted during 2014 and a 3-year data summary are included in this document.

## **AMBIENT MONITORING NETWORK**

The purpose of the SRPMIC air-monitoring network is to measure ambient concentrations of the selected criteria pollutants at various locations across the Community. These data are used to assess health and welfare effects and determine pollution source both on and off the Community. The criteria pollutants measured are ozone (O<sub>3</sub>), PM<sub>10</sub> and PM<sub>2.5</sub>; the meteorological parameters include wind speed, wind direction, ambient temperature, delta temperature, and ambient pressure. The collection of these data began in 2002 and continues to date. The three basic monitoring objectives with six types of monitoring sites and five measuring scales were used to develop the monitoring network.

## **MONITORING OBJECTIVES**

1. Provide air pollution data to the general public in timely manner;
2. Support compliance with ambient air quality standards and emission strategy development; and
3. Support for air pollution research studies.

## **TYPES OF MONITORING SITE OBJECTIVE**

- Determine the highest concentrations expected to occur in the area covered by the network;
- Determine the representative concentrations in areas of high population density;
- Determine general background concentrations levels;
- Determine the impact of significant sources or source categories on air quality;
- Determine the extent of regional pollutant transport among populated areas, and in support of secondary standards; and
- Measure air pollution impacts on visibility, vegetation damage or other welfare-based impacts.

## SPATIAL SCALES

Scale	Defined Parameter (radius)
Micro	0 to 100 meters
Middle	100 to 500 meters
Neighborhood	0.5 to 4 kilometer
Urban	4 to 50 kilometers
Regional	10 to 100s of kilometers

## DESCRIPTION

Four monitoring sites were operated by the SRPMIC during 2014 at various locations and for various durations and purposes. The site name, abbreviation, AQS Code and monitoring scale are included in Table 1; the location of each site, including the longitude/latitude and major cross-streets is presented in Table 2; the criteria pollutants monitored and the tribal monitors that adhere to requirements (SLAMS network) for each site is presented in Table 3; and the quantity of site instrumentation is presented in Table 4. The location of the Community is presented in Figure 1; the monitoring locations within the SRPMIC are presented in Figure 2. Photographs of the sites and associated data summaries are included at the end of this report.

**Table 1: SRPMIC Ambient Monitoring Sites**

Site Name	Site Abbreviation	AQS Code	SCALE
Senior Center	SC	04-013-7020	Neighborhood
Red Mountain	RM	04-013-7021	Urban
Lehi	LE	04-013-7022	Neighborhood
High School	HS	04-013-7024	Neighborhood

**Table 2: Site Locations**

Site	Latitude	Longitude	Location
SC	33° 29.294'	111° 51.339'	Osborn/Alma School Roads
RM	33° 30.475'	111° 45.277'	SR87/Arizona Canal
LE	33° 28.472'	111° 48.303'	Oak Street/Stapley Drive
HS	33° 30.483'	111° 50.268'	Chaparral Rd/Country Club Dr

**Table 3: Criteria Pollutants Monitored by Site/Network**

Site Name	O <sub>3</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Senior Center	SLAMS	SLAMS	SLAMS
Red Mountain	SLAMS		
Lehi	SLAMS	SLAMS	
High School	SLAMS	SLAMS	

**Table 4: Site Instrumentation**

Site ID	PM <sub>10</sub>	PM <sub>2.5</sub>	Ozone	Wind System	Ambient Temp	Delta Temp	Ambient Pressure	Rain	Data Logger	Total
SC	1	2	1	1	1	1	1	1	1	10
RM			1	1	1		1		1	5
LE	1		1*	1	1		1	1	1	7
HS	1		1*						1	3
Total	3	2	4	3	3	1	3	2	4	25

\* seasonal

## DATA SUMMARIES

### CRITERIA POLLUTANTS

The Federal Clean Air Act of 1970 established National Ambient Air Quality Standards (NAAQS) for six pollutants. These pollutants, referred to as the “Criteria Pollutants”, include carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). Two Federal Standards exist for most of the criteria pollutants. The primary standard defines levels deemed “. . . necessary, with an adequate margin of safety, to protect the public health.” The secondary standard defines levels “. . . necessary to protect the public welfare. . .” (40 CFR Part 50). The promulgation of these standards, however, does not prohibit any State or Tribal Community from establishing air quality standards that are more stringent. The Federal Standards are also subject to periodic review and revision as deemed necessary by the Administrator of the Environment Protection Agency (EPA).

The SRPMIC monitors criteria pollutants at various locations across the Community; not all pollutants are monitored at all locations. During 2014 four locations were operated for the measurement of O<sub>3</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. The following discussion summarizes the SRPMIC network results in relation to the monitoring objectives of the State and Local Air Monitoring Stations (SLAMS).

### Ozone (O<sub>3</sub>)

During 2014, four ozone monitors operated at various locations during various intervals. Two locations operated continuously; and two operated seasonally during the year. Each location and operational period is listed in Table 5.

**Table 5: Operational Schedule for Ozone**

Site Name	Duration
Senior Center	January 1 - December 31
Red Mountain	January 1 - December 31
Lehi	April 1 - November 1
High School	April 1 - November 1

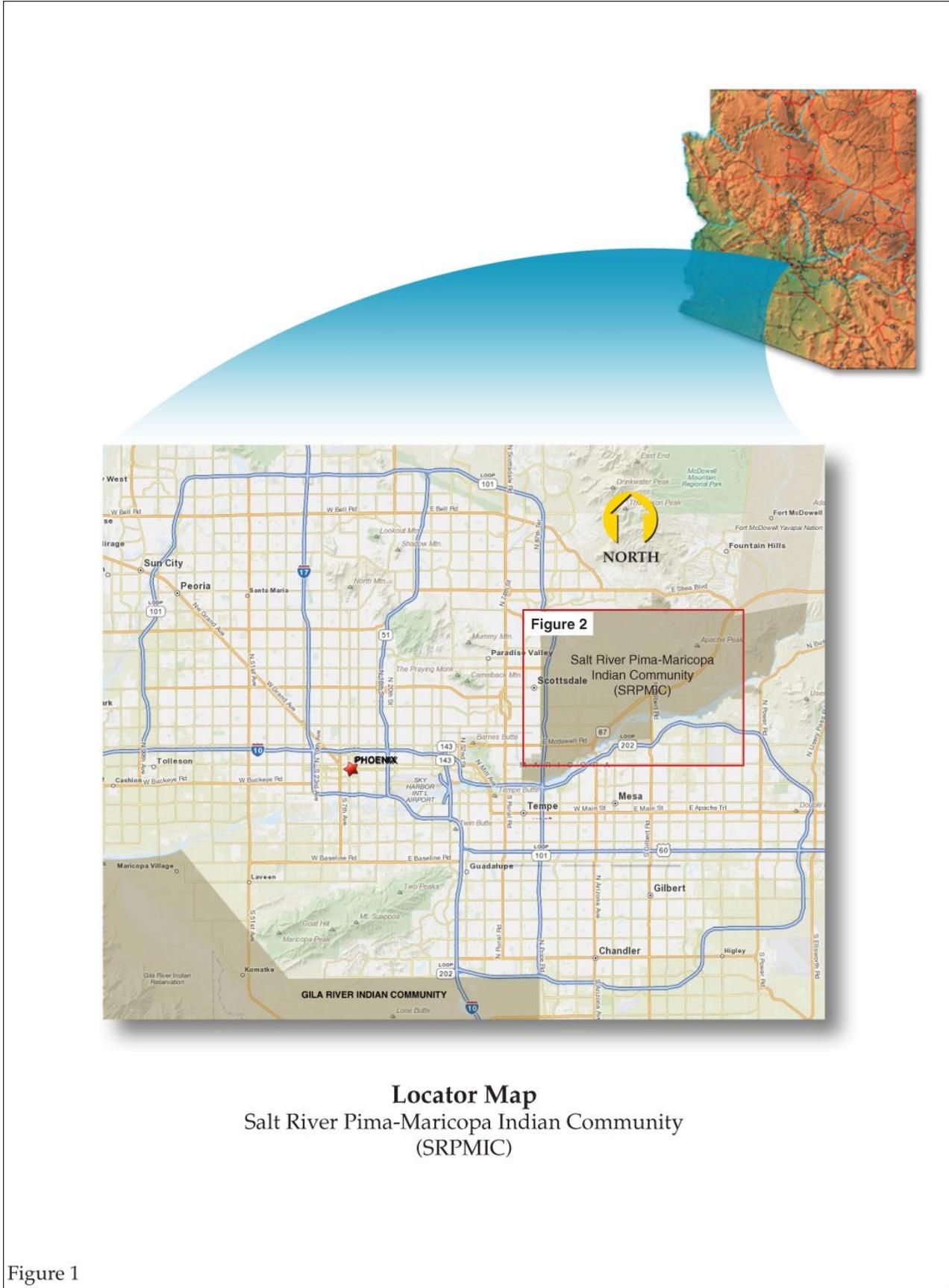


Figure 1

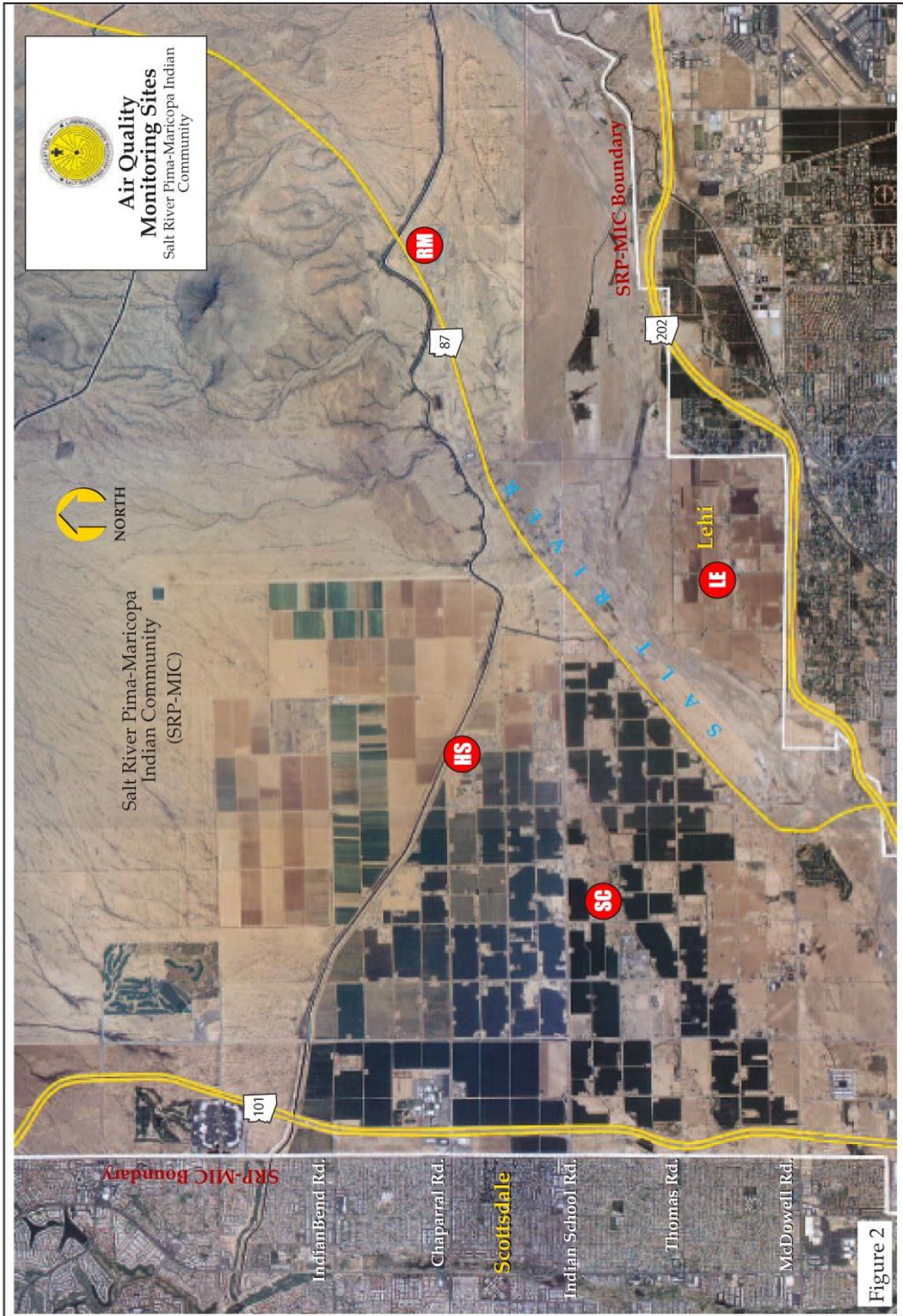


Figure 2

## One-hour Average Concentrations

One-hour concentrations of ozone during 2014 were moderate; no exceedance of the former one-hour ozone standard was observed. A summary of the one-hour concentrations obtained at the four locations is presented in Table 6; the distribution of the one-hour concentrations is presented in Table 7.

**Table 6: 1-Hour Summary**

Site	Max. (ppm) Date Time	2 <sup>nd</sup> High (ppm) Date Time	3 <sup>rd</sup> High (ppm) Date Time	4th High (ppm) Date Time	Number Of Exceedances	Number of Samples
RM	0.098 6/5 1600	0.098 8/6 1700	0.098 8/13 1800	0.097 8/5 1700	0	8576
SC	0.092 6/5 1500	0.092 8/5 1600	0.089 6/6 1500	0.089 9/25 1700	0	8561
LE	0.093 6/5 1600	0.090 6/6 1500	0.089 6/9 1500	0.087 6/6 1400	0	5052
HS	0.094 6/5 1600	0.090 6/6 1500	0.089 8/5 1600	0.088 6/7 1500	0	5020

**Table 7: Distributions**

Interval:	Number of 1-Hour Average Values (ppm)							
	0.000 to 0.040	0.041 to 0.080	0.081 to 0.120	0.121 to 0.160	0.161 to 0.200	0.201 to 0.240	0.241 to 0.280	>0.280
Site								
RM	5626	2899	51	0	0	0	0	0
SC	5919	2621	21	0	0	0	0	0
LE	2906	2130	16	0	0	0	0	0
HS	3007	1990	23	0	0	0	0	0

## Eight-hour Average Concentrations

Eight-hour average concentrations of ozone were moderate to high. There were nine exceedance-days of the eight-hour ozone standard and one violation of the standard. A summary of the eight-hour concentrations is presented in Table 8; the distribution of the concentrations is presented in Table 9.

**Table 8: Eight-Hour Summary**

Site	Max. (ppm) Date Time*	2 <sup>nd</sup> High (ppm) Date Time*	3 <sup>rd</sup> High (ppm) Date Time*	4 <sup>th</sup> High (ppm) Date Time*	Number Of Exceedances	Number of Samples
RM	0.086 6/6 1100	0.083 6/5 1100	0.080 8/13 1200	0.080 8/14 1000	8	8607
SC	0.081 6/6 1000	0.075 6/5 1100	0.075 6/7 1000	0.073 6/9 1100	1	8583
LE	0.082 6/6 1100	0.077 6/5 1100	0.076 6/9 1100	0.076 6/7 1100	4	5059
HS	0.082 6/6 1000	0.077 6/5 1200	0.076 6/7 1100	0.071 7/28 1200	3	5022

\*Time - Time is beginning hour (Mountain Standard Time)

**Table 9: Distribution**

Interval:	Number of Eight-Hour Average Values (ppm)							
	0.000 to 0.030	0.031 to 0.060	0.061 to 0.075	0.076 to 0.095	0.096 to 0.115	0.116 to 0.135	0.136 to 0.155	>0.155
Site								
RM	3292	4980	309	26	0	0	0	0
SC	4369	4020	190	4	0	0	0	0
LE	1717	3169	163	10	0	0	0	0
HS	1869	3025	120	8	0	0	0	0

## Particulate Matter (PM<sub>10</sub>)

During 2014, PM<sub>10</sub> samplers operated at one location on a 1 in 6 day schedule throughout the year; two locations operated continuously throughout the year. Each location and operational period is listed in Table 10.

**Table 10: Operational Schedule for PM<sub>10</sub>**

Site Name	Duration
Senior Center (continuous)	January 1 - December 31
Lehi Fire (6-day schedule)	January 1 - December 31
High School (continuous)	January 1 - December 31

## One-hour Average Concentrations

During 2014, a continuous PM<sub>10</sub> sampler operated at the High School and Senior Center. A summary of the hourly average concentrations and distribution are provided in Tables 11 and 12, respectively. One-hour average concentrations of PM<sub>10</sub> generally were low. Negative and extremely high outliers did occur, although approximately 82% of the values were less than 50 µg/m<sup>3</sup> and approximately 98% were less than 150 µg/m<sup>3</sup>.

**Table 11: One-Hour Average PM<sub>10</sub> Concentration Summary**

Site	Max. (ug/m <sup>3</sup> ) Date	2 <sup>nd</sup> High (ug/m <sup>3</sup> ) Date	Min. (ug/m <sup>3</sup> ) Date	Annual Average (ug/m <sup>3</sup> )	Number of Samples	% Recovery
HS	4167 8/6	1212 7/23	-8.6 3/15	40.4	8664	98.9
SC	664 5/11	647 10/24	0.0 9/9	33.2	8519	97.2

Note: These values exclude hours associated with Exceptional Events (EE).

**Table 12: One-Hour Average PM<sub>10</sub> Concentration Distribution**

Interval:	Number of One-hour Average Concentrations (ug/m <sup>3</sup> )								
	≤0	0 to 50	51 to 100	101 to 150	151 to 250	251 to 500	501 to 750	751 to 1000	>1000
Site									
HS	20	6856	1278	292	154	42	13	3	6
SC	3	7146	1052	222	63	28	5	0	0

## Twenty-Four Hour Average Concentrations

Twenty-four hour average concentrations of PM<sub>10</sub> were generally low during 2014. There were three exceedances of the 24-hour standard which were associated with agricultural tilling in the area; there was no violation of the twenty-four hour standard. A summary of the 24-hour average concentrations is presented in Table 13; the distribution of the concentrations is presented in Table 14. Data provided in Table 13 does not include Exceptional Event Days.

**Table 13: Twenty-Four Hour Average PM<sub>10</sub> Concentration Summary**

Site	Max. (ug/m <sup>3</sup> ) Date	2 <sup>nd</sup> High (ug/m <sup>3</sup> ) Date	Number of Exceedances	Annual Average (ug/m <sup>3</sup> )	Number of Samples
HS <sup>a</sup>	241 8/6	220 7/19	3	39.3	359
SC <sup>a</sup>	106 3/13	87 4/26	0	31.8	352
LE <sup>b</sup>	147 5/11	61 6/16	0	29.9	58

<sup>a</sup>Continuous (TEOM)

<sup>b</sup>Filter-based (6-day schedule)

Note: These values exclude Exceptional Event (EE) Days.

**Table 14: Twenty-Four Hour Average PM<sub>10</sub> Concentration Distributions**

Interval:	Number of Twenty-Four Hour Average Concentrations (ug/m <sup>3</sup> )								
	0 to 25	26 to 50	51 to 75	76 to 100	101 to 125	126 to 150	151 to 175	176 to 200	>200
Site									
HS <sup>a</sup>	98	185	61	9	1	2	0	1	2
SC <sup>a</sup>	133	184	31	3	1	0	0	0	0
LE <sup>b</sup>	24	31	2	0	0	1	0	0	0

<sup>a</sup>Continuous (TEOM)

<sup>b</sup>Filter-based (6-day schedule)

### Exceptional Event Data: PM<sub>10</sub>

During 2014, there were three exceptional event days applied to two continuous PM<sub>10</sub> monitors. These exceptional event occurrences are the same days when Arizona Department of Environmental Quality (ADEQ) submitted exceptional events packages to EPA Region 9 for Maricopa County. A summary of data values affected by high wind blown dust not reasonably controllable that caused high concentrations as exceptional events are provided in Tables 15 and 16, respectively.

**Table 15: One-Hour Average PM<sub>10</sub> with Exceptional Event Summary**

	Max. (ug/m <sup>3</sup> )	2 <sup>nd</sup> High (ug/m <sup>3</sup> )	3 <sup>rd</sup> High (ug/m <sup>3</sup> )	4 <sup>th</sup> High (ug/m <sup>3</sup> )	5 <sup>th</sup> High (ug/m <sup>3</sup> )	6 <sup>th</sup> High (ug/m <sup>3</sup> )
Site	Date	Date	Date	Date	Date	Date
HS	4167 8/6	1548* 7/3	1212 7/23	1207* 7/3	1185 7/18	1131 7/19
SC	812* 5/11	766* 7/3	739* 7/25	722* 5/11	664 5/11	647 10/24

\* These values have been flagged as exceptional events in AQS

**Table 16: Twenty-Four Hour Average PM<sub>10</sub> with Exceptional Event Summary**

	Max. (ug/m <sup>3</sup> )	2 <sup>nd</sup> High (ug/m <sup>3</sup> )	3 <sup>rd</sup> High (ug/m <sup>3</sup> )	4 <sup>th</sup> High (ug/m <sup>3</sup> )	5 <sup>th</sup> High (ug/m <sup>3</sup> )	6 <sup>th</sup> High (ug/m <sup>3</sup> )
Site	Date	Date	Date	Date	Date	Date
HS	241 8/6	220 7/19	191 7/23	167* 5/11	166* 7/3	150 7/22
SC	170* 5/11	111* 7/25	106 3/13	87 4/26	84* 7/3	80 7/9

\* These values have been flagged as exceptional events in AQS

## Particulate Matter (PM<sub>2.5</sub>)

During 2014, PM<sub>2.5</sub> samplers operated at one location; the operational period is listed in Table 17.

**Table 17: Operational Schedule for PM<sub>2.5</sub>**

Site Name	Duration
Senior Center (6-day schedule)	January 1- December 31

Twenty-four hour average concentrations of PM<sub>2.5</sub> were low during 2014. There was no exceedance or violation of the 24-hour or annual standards during 2014. A summary of the 24-hour average concentrations is presented in Table 18 for those concentrations obtained on a 6-day schedule; the distributions of the concentrations for the corresponding schedules are presented in Table 19.

**Table 18: Twenty-Four Hour Average PM<sub>2.5</sub> Concentration Summary**

### 6-Day Schedule

Site	Max. (ug/m <sup>3</sup> ) Date	2 <sup>nd</sup> High (ug/m <sup>3</sup> ) Date	Number of Exceedances	98 <sup>th</sup> Percentile Value	Annual Average (ug/m <sup>3</sup> )	Number of Samples
SC - P <sup>c</sup>	13.2 5/11	11.0 7/4	0	11.0	5.4	61
SC - C <sup>d</sup>	13.1 5/11	11.3 1/5	0	11.3	5.4	61

<sup>c</sup>Primary Sampler

<sup>d</sup>Collocated Sampler

**Table 19: 24-Hour Average Concentration PM<sub>2.5</sub>Distributions**

### 6-Day Schedule

Interval:	Number of 24-Hour Average Concentrations (ug/m <sup>3</sup> )						
	0 to 15	16 to 30	31 to 50	51 to 70	71 to 90	91 to 110	>110
Site							
SC - P <sup>c</sup>	61	0	0	0	0	0	0
SC - C <sup>d</sup>	61	0	0	0	0	0	0

<sup>c</sup>Primary Sampler

<sup>d</sup>Collocated Sampler

## DATA COMPLETENESS

A summary of the annual data completeness for the criteria pollutants monitored during 2014 is presented in Tables 20-22. These tables represent the number of samples collected during each site's operation versus the number of scheduled samples during each site's operation.

**Table 20: Ozone (O<sub>3</sub>)**

Interval Site	Number of Actual Samples	Number of Scheduled Samples	Data Completeness (Actual/Scheduled)
<b><u>One-Hour</u></b>			
RM	8576	8760	97.9%
SC	8561	8760	97.7%
LE*	5052	5160	97.9%
HS*	5020	5160	97.3%
<b><u>Eight-Hour</u></b>			
RM	8607	8760	98.2%
SC	8583	8760	98.0%
LE*	5059	5160	98.0%
HS*	5022	5160	97.3%
<b>TOTAL</b>	<b>54480</b>	<b>55680</b>	<b>97.8%</b>

\* Seasonal

**Table 21: Particulate Matter (PM)**

<b>PM<sub>10</sub></b> <b>Interval</b> <b>Site</b>	<b>Number of</b> <b>Actual Samples</b>	<b>Number of</b> <b>Scheduled</b> <b>Samples</b>	<b>Data Completeness</b> <b>(Actual/Scheduled)</b>
<b><u>1 in 6 days</u></b>			
LE <sup>b</sup>	58	61	95.1%
<b><u>Continuous</u></b>			
HS <sup>a</sup>	359	365	98.4%
SC <sup>a</sup>	352	365	96.4%
<b>TOTAL PM<sub>10</sub></b>	<b>769</b>	<b>791</b>	<b>97.2%</b>
<b>PM<sub>2.5</sub></b>			
<b>Interval</b> <b>Site</b>			
<b><u>1 in 6 days</u></b>			
SC - P <sup>c</sup>	61	61	100.0%
SC - C <sup>d</sup>	61	61	100.0%
<b>TOTAL PM<sub>2.5</sub></b>	<b>122</b>	<b>122</b>	<b>100.0%</b>

<sup>a</sup>Continuous (TEOM)

<sup>b</sup>Filter-based (6-day schedule)

<sup>c</sup>Primary Sampler

<sup>d</sup>Collocated Sampler

**Table 22: Data Completeness Summary**

<b>Pollutant</b>	<b>Number of</b> <b>Actual Samples</b>	<b>Number of</b> <b>Scheduled</b> <b>Samples</b>	<b>Data Completeness</b> <b>(Actual/Scheduled)</b>
<b>Ozone</b>	<b>54480</b>	<b>55680</b>	<b>97.8%</b>
<b>PM<sub>10</sub></b>	<b>769</b>	<b>791</b>	<b>97.2%</b>
<b>PM<sub>2.5</sub></b>	<b>122</b>	<b>122</b>	<b>100.0%</b>
<b>TOTAL</b>	<b>55371</b>	<b>56350</b>	<b>98.3%</b>

## EXCEEDANCE OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Included in Table 23 is a summary of exceedances of the NAAQS during 2014.

**Table 23: 2014 NAAQS Exceedances**

Pollutant	Interval	Site	Concentration	Date
Ozone	1-Hour	None	-	-
	8-Hour	RM	0.086	6/6
			0.083	6/5
			0.080	8/13
			0.080	8/14
			0.078	8/6
			0.078	8/7
			0.077	8/18
			0.076	6/7
		SC	0.081	6/6
	LE	0.082	6/6	
		0.077	6/5	
		0.076	6/9	
		0.076	6/7	
		HS	0.082	6/6
			0.077	6/5
			0.076	6/7
PM <sub>10</sub>	24-Hour	SC	-	-
		LE	-	-
		HS	241	8/6
			220	7/19
	191	7/23		
Annual	None	-	-	
PM <sub>2.5</sub>	24-Hour	None	-	-
	Annual	None	-	-

## VIOLATIONS OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS

### Ozone (O<sub>3</sub>)

**Table 24: Violations of the 8-hour Ozone Standard**

Site	2012 4 <sup>th</sup> High (ppm)	2013 4 <sup>th</sup> High (ppm)	2014 4 <sup>th</sup> High (ppm)	3-Year Average of 4 <sup>th</sup> High (ppm)
RM	0.077	0.075	0.080	0.077
SC	0.076	0.074	0.073	0.074
LE	0.075	0.075	0.076	0.075
HS	0.074	0.074	0.071	0.073

### Particulates - PM<sub>10</sub>

**Table 25: Violations of the Twenty-Four Hour PM<sub>10</sub> Standard**

Site	2012		2013		2014		Rate of Expected Exceedances
	24-Hr Max (ug/m <sup>3</sup> )	Expected Exceedances	24-Hr Max (ug/m <sup>3</sup> )	Expected Exceedances	24-Hr Max (ug/m <sup>3</sup> )	Expected Exceedances	
HS	90 <sup>be</sup>	-	221 <sup>af</sup>	1.0	241 <sup>ag</sup>	3.0	-
SC	122 <sup>b</sup>	0	111 <sup>b</sup>	0	106 <sup>a</sup>	0	0.0
LE <sup>b</sup>	150	0	69	0	147	0	0.0

**Table 26: Violations the Annual PM<sub>10</sub> Standard**

Site	2012 Annual Average (ug/m <sup>3</sup> )	2013 Annual Average (ug/m <sup>3</sup> )	2014 Annual Average (ug/m <sup>3</sup> )	Three-Year Average (ug/m <sup>3</sup> )
HS	40.0 <sup>be</sup>	38.0 <sup>a</sup>	39.3 <sup>a</sup>	-
SC	43.5 <sup>b</sup>	34.2 <sup>b</sup>	31.8 <sup>a</sup>	36.5
LE <sup>b</sup>	36.1	28.2	29.9	31.4

<sup>a</sup>Continuous (TEOM)

<sup>b</sup>Filter-based (6-day schedule)

<sup>c</sup>Primary Sampler

<sup>d</sup>Collocated Sampler

<sup>e</sup><75% data

<sup>f</sup>Data submitted to AQS as high winds pursuant to Exceptional Event

<sup>g</sup>Agricultural operations

NA-Not Applicable

## Particulates – PM<sub>2.5</sub>

Table 27: Violations of the Twenty-Four Hour PM<sub>2.5</sub> Standard

Site	2012 Annual 98 <sup>th</sup> Percentile (ug/m <sup>3</sup> )	2013 Annual 98 <sup>th</sup> Percentile (ug/m <sup>3</sup> )	2014 Annual 98 <sup>th</sup> Percentile (ug/m <sup>3</sup> )	Three-Year Average 98 <sup>th</sup> Percentile (ug/m <sup>3</sup> )
SC-P <sup>c</sup>	12.1	10.1	11.0	11.1

Table 28: Violations the Annual PM<sub>2.5</sub> Standard

Site	2012 Annual Average (ug/m <sup>3</sup> )	2013 Annual Average (ug/m <sup>3</sup> )	2014 Annual Average (ug/m <sup>3</sup> )	Three-Year Average (ug/m <sup>3</sup> )
SC-P <sup>c</sup>	6.6	5.3	5.4	5.8

<sup>c</sup>Primary Sampler

## NETWORK INFORMATION

The following is a list of information on SRPMIC monitoring network activities that occurred during 2014.

### Ozone Monitoring:

During 2014, four ozone monitors were reported operational. Two site monitors from Lehi and the High School continue to operate April 1 to November 1 as seasonal monitors, while ozone monitors at the Senior Center and Red Mountain sites continue to operate year-round.

There were nine exceedance-days of the eight-hour primary standard for ozone and one violation of the eight-hour primary standard NAAQS for the three-year average of the fourth highest concentration. Tables 23 and 24 presents the data summaries for the eight-hour ozone report.

The Air Quality Program (AQP) continues to upgrade their monitoring equipment. On April 21, 2014, the High School ozone monitor (Thermo Model 49C) was replaced with Thermo Model 49i. The Lehi site monitor (Teledyne Model 400E) was replaced on May 21, 2014 with a new Model T400 but operated briefly due to multiple problems with the analyzer; the majority of time it was at the vendor facility for repairs. Model 400E was re-installed to monitor remainder of the season.

## **PM<sub>10</sub> Monitoring:**

During 2014, three PM<sub>10</sub> monitors were reported operational. Two site monitors at the Senior Center and High School sites operated continuously, collecting hourly data while the PM<sub>10</sub> sampler at Lehi site was filter-based and operated on a 1 in 6-day schedule.

There were three exceedance-days of the 24-hour primary standard for PM<sub>10</sub> of 150ug/m<sup>3</sup> and no violation of the 24-hour standard of expected number of exceedances. Tables 13 and 25 provide data summaries of PM<sub>10</sub> exceedances. The information in these tables and Table 11 do not include the Exceptional Event days.

AQP flagged three Exceptional Event days in AQS for May 11, 2014, July 3, 2014 and July 25, 2014; all are from the continuous monitors at the Senior Center and High School. These events of high wind blown dust were flagged at multiple hours in AQS. The three exceptional event occurrences are same days the ADEQ submitted their exceptional events packages to EPA Region 9 for Maricopa County in October 2014.

The farmers continuous agricultural tilling 24 hours a day caused an exceedance of 24-hour primary standard of PM<sub>10</sub> at the High School site on July 19, 2014, July 23, 2014 and August 6, 2014. The affected hours were assigned with qualifier code "NS - influenced by nearby source" at multiple hours. Senior Center monitor was affected one hour on July 22, 2014. AQP staff met with farming personnel to discuss the importance of air monitoring regulations. Staff also met with their BMP personnel to discuss identifying an optional method of BMPs to help control dust.

There was no collocate monitor at Lehi site in 2014. The primary and collocate FRM monitors were removed at the Senior Center in May 2014 and replaced with a TEOM continuous monitor. Subsequently, AQP was primarily concentrated on PM<sub>10</sub> continuous project of through-the-roof installation and roof design installation of PM<sub>2.5</sub> continuous at the Senior Center along with the project disruptions apparently overlooked at the Lehi PM<sub>10</sub> FRM collocate monitor when FRM monitors were removed from Senior Center. The site was corrected to install collocate monitor in March 2015.

The AQP replied to IML Lab and acknowledged compliance with the new EPA QC lab requirements on handling PM<sub>10</sub> low volume filter samples, reference to 40 CFR Appendix O in April 2014.

On March 25, 2014 a letter was sent to EPA Region 9 for SRPMIC's plan to exchange PM<sub>10</sub> 6-Day to continuous monitor and also change the PM monitoring design at the Senior Center site. SRPMIC's decision is to remove primary and collocate PM<sub>10</sub> FRM monitors and replace them with TEOM 1400ab to install a through-the-roof sampling method along with installing a 1405 FDMS PM<sub>2.5</sub> in the monitoring shelter. It was also requested that the PM<sub>10</sub> TEOM data, beginning 2014 be used for reporting data since the monitor was operated side-by-side with the FRM monitors on an exterior platform. On April 17, 2014, Michael Flagg of EPA Region 9, in a conversation via telephone said the PM<sub>10</sub> monitoring design change at the Senior Center which involved moving monitors to the roof and removing FRM monitors was acceptable. Reporting data from January 1, 2014 to AQS for PM<sub>10</sub> TEOM was also approved.

## **PM<sub>2.5</sub> Monitoring:**

Two PM<sub>2.5</sub> monitors were reported operational in AQS for 2014. Primary and collocate PM<sub>2.5</sub> FRM filter-based monitors both operated on 1 in 6-day schedules at the Senior Center site. There was no exceedance or violation of the 24-hour or annual NAAQS during 2014.

The modification of sampling frequency to PM<sub>2.5</sub> FRM network at the Senior Center occurred after SRPMIC requested in a letter to EPA Region 9 on August 21, 2008 to reduce the sampling schedule of the primary monitor to a 1 in 6-day from a 1 in 3-day schedule due to lack of filter support from the laboratory which created minimal data reports. This was critical to data completeness and AQP staffing issues. EPA Region 9 approved the request to reduce sampling frequency at the Senior Center site from 1 in 3-day schedule to a 1 in 6-day schedule in a written letter on October 2008.

An independent auditor conducts a quarterly audit to SRPMIC air monitoring network. Criteria pollutants ozone, PM<sub>10</sub> and PM<sub>2.5</sub> are audited quarterly and all meteorological parameters are done twice annually.

## **Network and Non-Regulatory Information:**

Monitoring improvements of exchanging room temperature sensors to low-cost sensors occurred during the course of 2014 to four air quality stations and a mobile monitor.

Upgraded UPS Backup power supplies were exchanged at the Senior Center site, Red Mountain site and the office workstation.

2013 SRPMIC Data Certification was sent to EPA Region 9 on March 27, 2014. EPA Region 9 reviewed and concurred with the 2013 AQS data certification package on March 31, 2014.

The following is the EPA Audits conducted in 2014:

- EPA Ozone Through-the-Probe Audit conducted at Red Mountain Air Monitoring Station on May 5, 2014; and
- EPA PM<sub>2.5</sub> PEP Audits conducted: February 10 & 16, 2014, April 29, 2014, July 22 & 28, 2014 and October 26, 2014 at Senior Center Air Monitoring Station.

The SRPMIC responded to EPA Region 9 recommendations and comments on SRPMIC TSA conducted on October 2013 with response to the findings of EPA TSA final report on September 11, 2014.

The AQP continues to submit hourly data (FTP) of ozone and PM<sub>10</sub> to AIRNow data center that was first established with ozone reports in 2007. On October 14, 2014, Senior Center PM<sub>10</sub> continuous monitor was included to the AIRNow hourly report. SRPMIC relies on Sonoma Techs AIRNow reporting tools of navigational mapping of hourly data comparisons with local monitors and the site trajectory for source traces.

AQP started utilizing the AirVision data management application in May 2014 but still uses E-DAS Ambient for reporting data as more features to AirVision modules are needed.

The SRPMIC utilizes visibility cameras at two locations that capture images hourly to access the visibility conditions that are featured on the AQP website. The cameras were upgraded in May 2014 but one camera remains inoperable with program issues.

The AQP continues to provide public outreach using a Flag Communication Network in which color flags are changed based upon daily air quality conditions that reflect air quality index (AQI) colors. They are setup at five different locations, including one at Salt River High School. AQP also distributes public outreach information of air quality advisories through the SRPMIC website and digital signage displays that are setup at major departments to show reports of high pollution and health watch advisories.

On June 25, 2014, SRPMIC received a Desert Peaks Award from Maricopa Associations of Government (MAG) for participation in public-private partnership of Winter No Burn Campaign 2013 - 2014. It is an outreach effort encouraging residents to not burn wood on no burn days during winter holidays to keep the area within EPA NAAQS for PM<sub>2.5</sub>.

The AQP conducted short-term PM<sub>10</sub> special monitoring utilizing the air monitoring mobile unit at local residences from November 2014 to January 2015 for fugitive dust during cotton harvest activities. The short-term study was conducted to better understand analysis trends from agricultural cotton harvest activities that create fugitive dust that impact the Community member's health.

### **Proposed Changes:**

The AQP installed a PM<sub>10</sub> FRM (R & P Partisol 2000) collocate monitor on March 2015 for the Lehi PM<sub>10</sub> FRM primary monitor. A PM<sub>10</sub> Thermo 1405 monitor is proposed for installation in the fall of 2015 to monitor side-by-side with FRMs the remainder of the year; eventually will be the network monitor.

The AQP installed a PM<sub>2.5</sub> inlet section on the monitoring shelter at the Senior Center in 2014 in preparation for the PM<sub>2.5</sub> Thermo 1405 FDMS continuous monitor. The site is the only location that monitors PM<sub>2.5</sub> with a primary and collocated R&P FRM 2000. The AQP is planning to operate the 1405 FDMS monitor at this location in winter 2015 and it is projected to report data mid-2016.

The utilization of data management system AirVision, will continue to be a common component as some software modules are scheduled to be integrated for data reporting by the end of 2015. AQP is anticipating to use a tool, Response Notification System, to alert staff in an event of high pollution from real-time air quality data report in the network to ensure potential high measurements are inspected immediately.

The AQP is currently evaluating a need of a meteorological system and is proposing to utilize an all-in-one meteorological system at the High School site. The AQP is also anticipating the use of video camera to capture image of activities and mostly visibility conditions as the High School site is designated as high concentration site for PM<sub>10</sub> pollution.

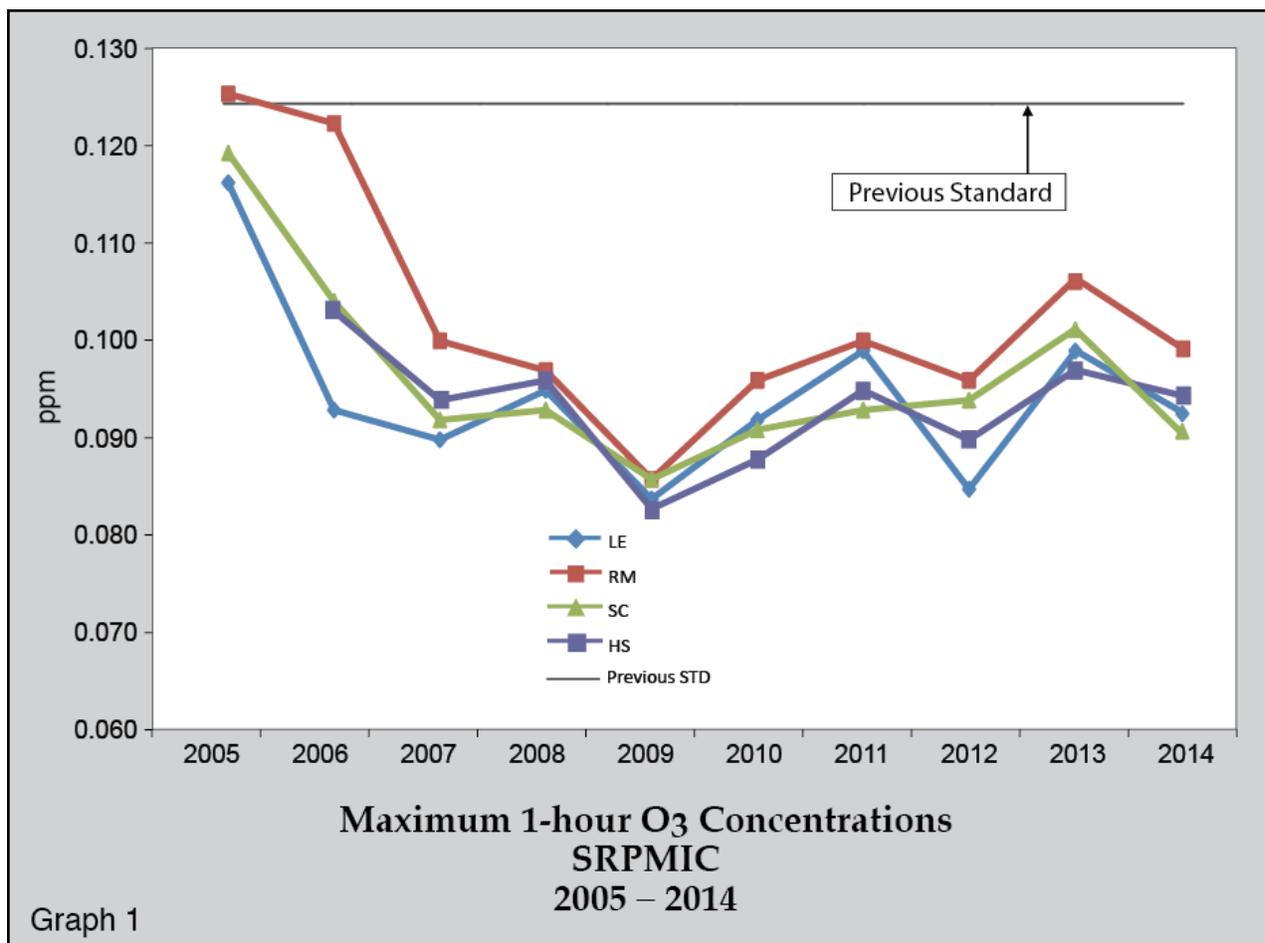
## TRENDS

The air quality in the Phoenix Metropolitan Area is generally improving despite the tremendous growth experienced in the region. Since monitoring began in the 1960s, ambient concentrations for most of the criteria pollutants have been reduced to below the NAAQS. Graphs of the trends seen in those criteria pollutants that are monitored on the SRPMIC are illustrated in Graphs 1 through 7.

### Ozone (O<sub>3</sub>)

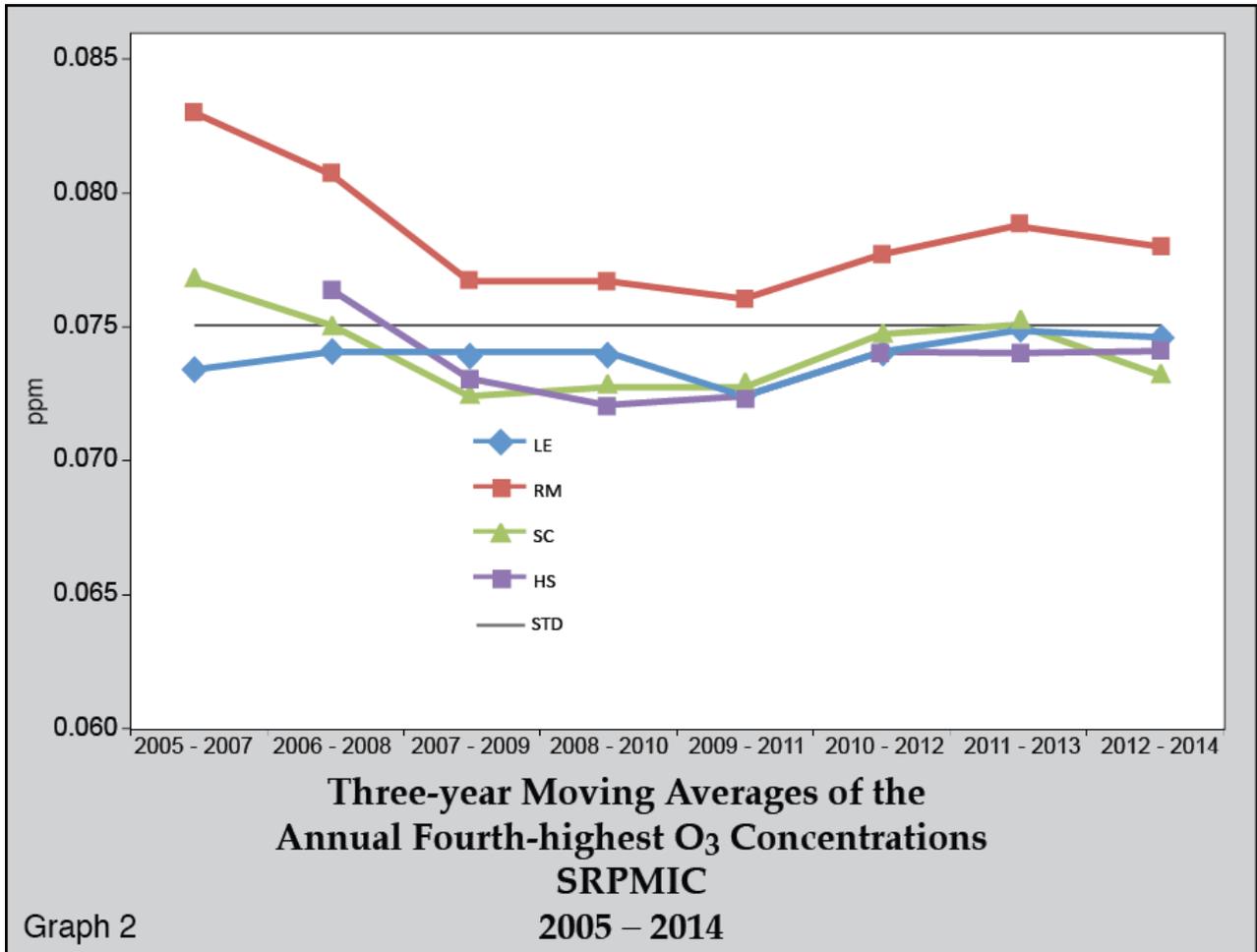
#### One-Hour Concentrations

Maximum 1-hour concentrations of O<sub>3</sub> at the SRPMIC monitoring locations have shown a large decline from 2005 to 2009 and a small overall increase occurring from 2009 to 2014. Between 2005 and 2014, maximum concentrations decreased approximately 20%. A graph of the maximum one-hour concentrations is provided in Graph 1.



## Eight-Hour Concentrations

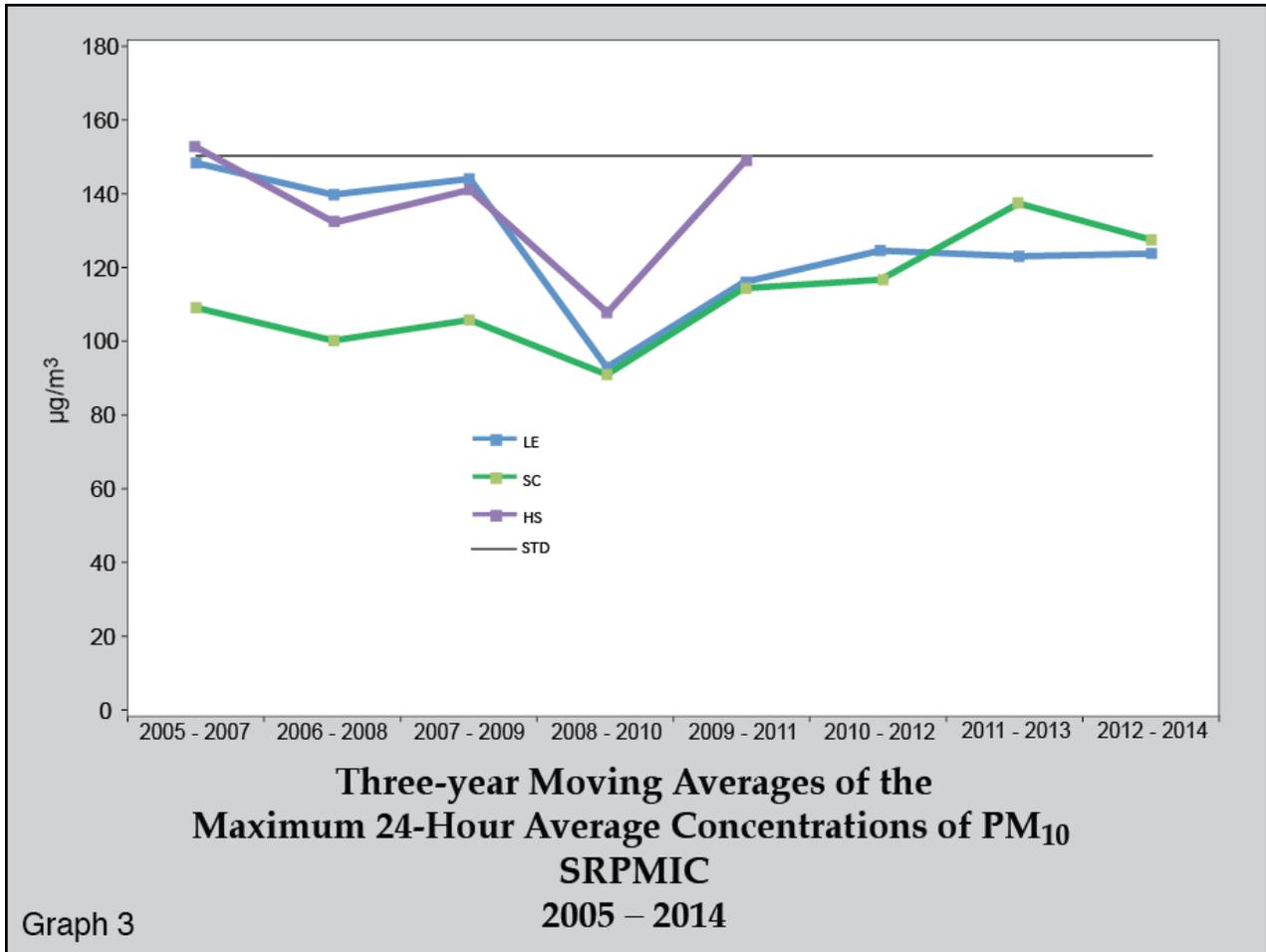
Eight-hour average concentrations of O<sub>3</sub> at the SRPMIC monitoring locations reflect the trend seen in the 1-hour concentrations. The three-year moving averages of the fourth-highest 8-hour concentration at the four locations are illustrated in Graph 2. With the exception of the Lehi (LE) location, the trend in the concentrations has been relatively similar amongst the locations.



## Particulate Matter (PM<sub>10</sub>)

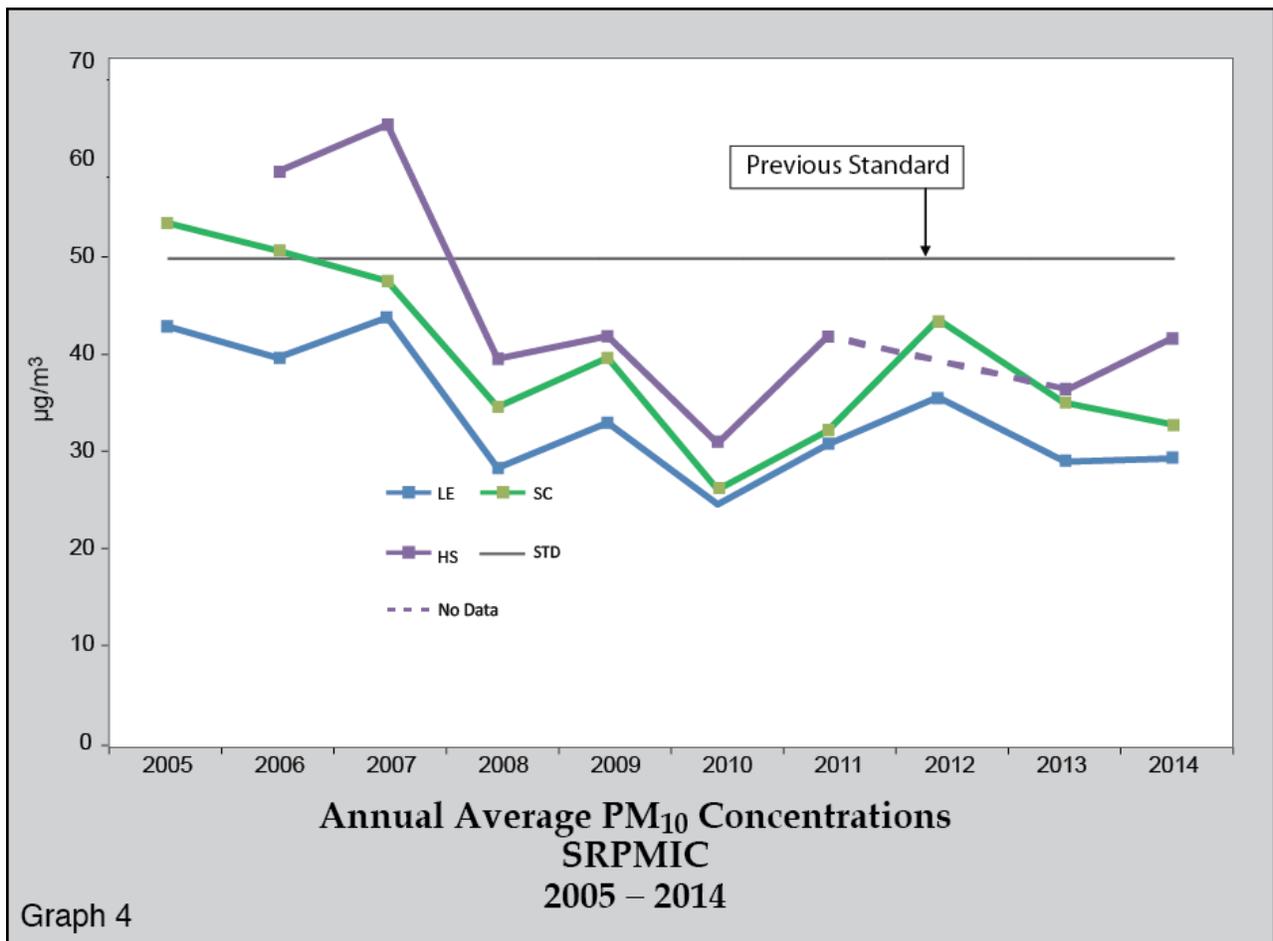
### Twenty-Four Hour Concentrations

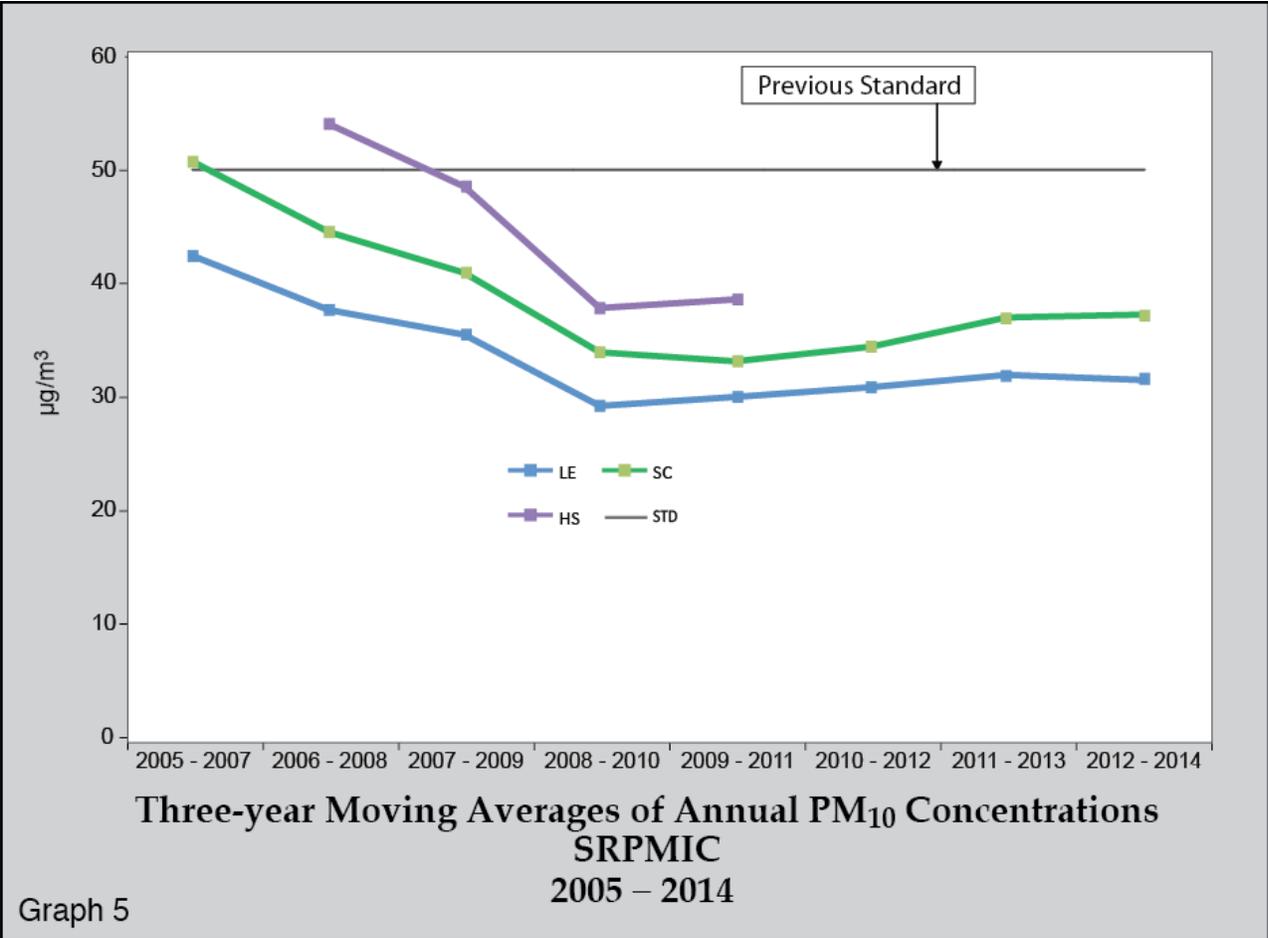
Maximum twenty-four hour average concentrations of PM<sub>10</sub> at the three monitoring locations have remained below the standard since 2006. A sharp decline occurred during 2008-2010, followed by a steady increase through 2014. A graph of the trend is provided in Graph 3.



## Annual Concentrations

Annual average concentrations of PM<sub>10</sub> at the SRPMIC locations have shown a general decline between 2005 and 2014, with increases during 2011 and 2012. There has been no exceedance of the previous annual standard since 2008; a graph is presented in Graph 4. A graph of the three-year moving averages of the annual PM<sub>10</sub> concentrations is provided in Graph 5. Data recovery at the High School (HS) location was less than 75% during 2012, therefore, data for 2012 were not included in Graphs 4 and 5.

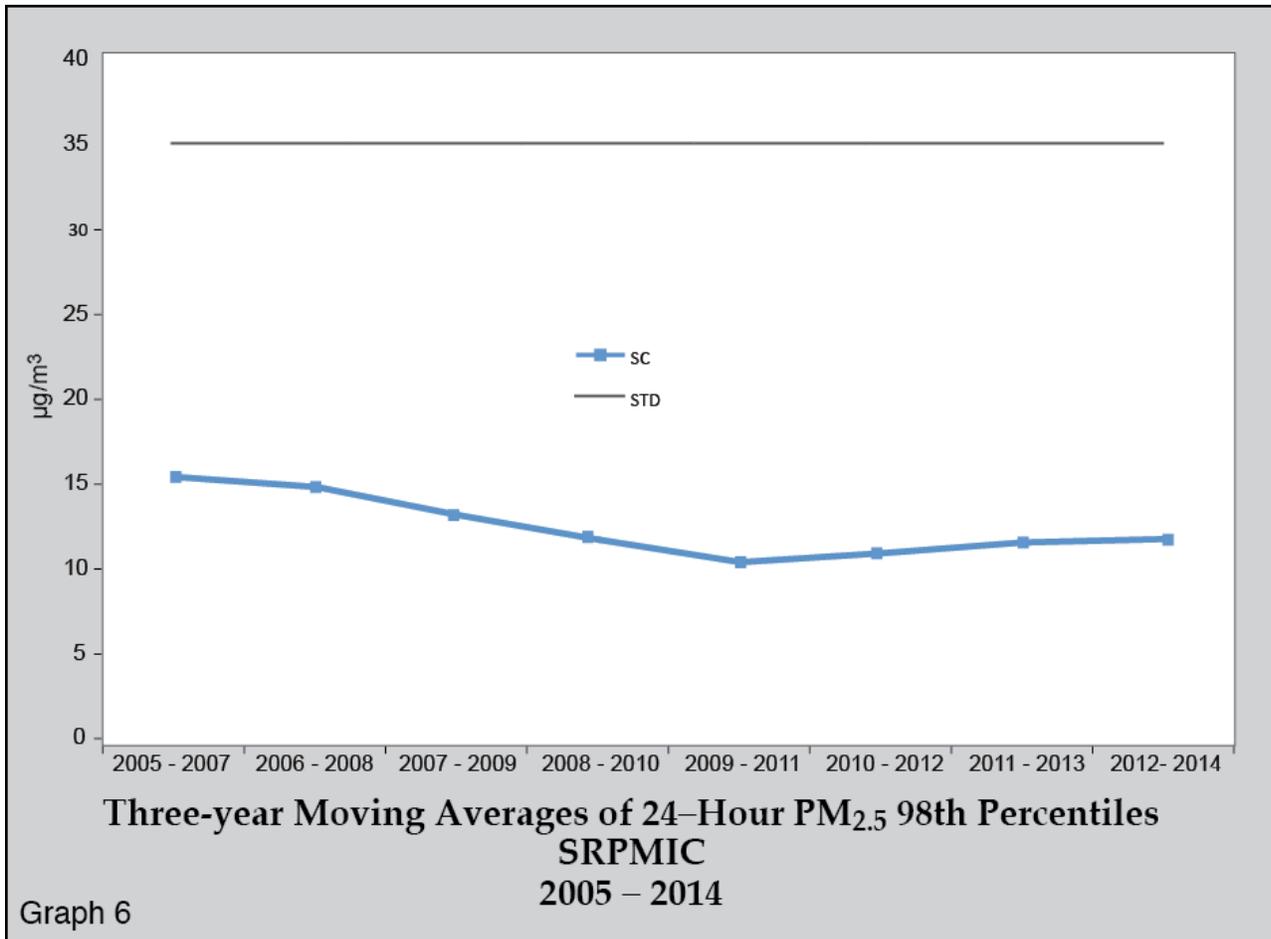




## Particulate Matter (PM<sub>2.5</sub>)

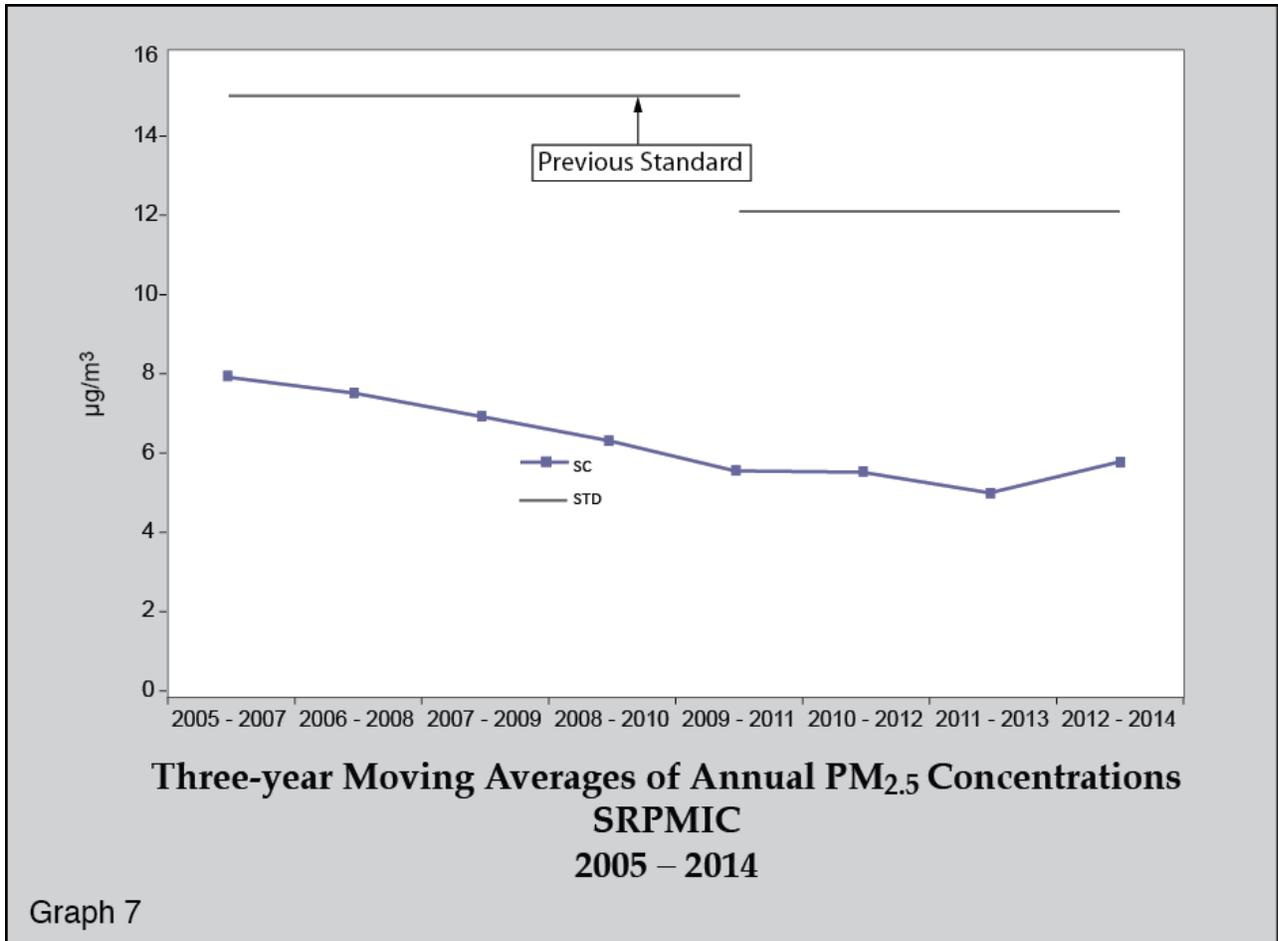
### 98<sup>th</sup> Percentiles

Concentrations of PM<sub>2.5</sub> were well below the standard. A graph of the three-year moving averages of the 98<sup>th</sup> percentile of the 24-hour average concentrations is provided in Graph 6. Data collected during 2007 was included in the moving averages although data recovery for that year was less than 75%.



## Annual Concentrations

Annual average concentrations of PM<sub>2.5</sub> at the SRPMIC locations have shown a general decline since 2005, although a slight increase occurred during 2012-2014. A graph of the three-year moving averages of the annual PM<sub>2.5</sub> concentrations is provided in Graph 7. Data collected during 2007 was included in the moving averages although data recovery for that year was less than 75%.



## SITE DESCRIPTIONS

### Senior Center (SC)



Site Name	Senior Center
AQS ID	04 013 7020
GPS Coordinates	33°29.294', 111°51.339'
Address	10844 East Osborn Road, Scottsdale, AZ 85356
County	Maricopa
Basic Monitoring Objective	NAAQS Comparison, Public Info, Research
Representative Area	CBSA Phoenix-Mesa-Scottsdale
Traffic Count (AADT)	Rural road with no official traffic count available - south

**Site Description:** The Senior Center (SC) site was relocated from the Desert Eagle Secondary School Air Station that began operations in October 2004. The site was renovated in March to April 2012 with a new monitoring shelter, upgraded electrical connections and new meteorological tower. The site is located just west of the Senior Service Center at the northeast section of Osborn Road and Alma School Road approximately one half mile from the Two Waters Administration Tribal Complex. The site is situated in the midst of neighborhood homes with agricultural fields to the south and sparse open fields to the north.

The criteria pollutants of ozone and particulate matter of PM<sub>10</sub> and PM<sub>2.5</sub> are monitored at this station. The network design for the FRMs PM<sub>10</sub> and PM<sub>2.5</sub> monitoring is established as primary and collocated sample measurements until 2014 PM<sub>10</sub> continuous TEOM was installed as through-the-roof sampling and the PM<sub>10</sub> collocated monitor was removed. The meteorological parameter of wind speed, wind direction, atmospheric pressure, relative humidity, precipitation, ambient temperature and the delta temperature measurement are also monitored at this site. The data acquisition network of hourly data reports is in-house along with the ozone calibration monitors.

**Table 29: Senior Center**

Instrument	Ozone	PM <sub>10</sub>	PM <sub>2.5</sub> Primary/ Collocated	Wind Monitor	Temperature / Relative Humidity	Pressure	Precipitation	Differential Temperature
Date Established	Oct 2004	May 2004	May 2004	Jan 2005	Jan 2005	Jan 2005	Jan 2005	Sep 2012
Sampler Make/Model	Thermo / 49i (2-10-11)	R&P TEOM / 1400ab (1-1-14)	(both) R&P FRM 2000	RM Young 05305 AQ	RM Young 41382/ 41382VF	RM Young 61202V / 61302V	Climatronics 525	RM Young 41342VF
Monitor Type	SLAMS Tribal	SLAMS Tribal	SLAMS Tribal	n/a	n/a	n/a	n/a	n/a
Scale	Neighborhood	Neighborhood	Neighborhood	n/a	n/a	n/a	n/a	n/a
Objective Type	Population /Transport	Population	Population	n/a	n/a	n/a	n/a	n/a
POC	1	3	1 and 2	n/a	n/a	n/a	n/a	n/a
Parameter Code	44201	81102	88101 and 88101	61103 and 61104	62101 and 62201	64101	65102	62106
Method Code	047	079	117 and 117	065	020 and 011	011	011	021
Analytical Lab	n/a	n/a	(both) Inter Mountain Lab	n/a	n/a	n/a	n/a	n/a
Nearest Road	Osborn Road	Osborn Road	Osborn Road	Osborn Road	Osborn Road	Osborn Road	Osborn Road	Osborn Road
Distance / Direction to Roadways	32.3 meters / South	32.3 meters / South	22.3 & 24.3 meters / South	32.9 meters / South	32.9 meters / South	35 meters / South	24.5 meters / South	32.9 meters / South
Airflow Arch	360	360	360	360	360	360	360	360
Inlet Height	4.2 meters	4.3 meters	3.2 meters	10.3 meters	2.4 meters	2.3 meters	3 meters	10 meters / 2.4 meters
Distance from trees	13.2 meters	14.8 meters	18 meters	14.6 meters	14.6 meters	14.6 meters	19 meters	12.6 meters
Distance between Collocated Samplers	n/a	n/a	2 meters	n/a	n/a	n/a	n/a	n/a
Distance to furnace or incinerator	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Distance obstruction on roof	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Schedule	continuous	continuous	1 in 6 Days	continuous	continuous	continuous	continuous	continuous
Probe Material	Stainless Steel	n/a	n/a	n/a	RTD / Intercap	n/a	Tipping Bucket	RTD
Residence Time	10 seconds	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Surround Area	Residential	Residential	Residential	Residential	Residential	Residential	Residential	Residential
Ground cover	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel
Changes in 18 months	No	No	Yes	No	No	No	No	No
Frequency QC check	Bi-weekly	Bi-weekly	Bi-weekly	n/a	n/a	n/a	n/a	n/a
Frequency of flow verification	n/a	Monthly	Monthly	n/a	n/a	n/a	n/a	n/a
Dates of Audit Evaluation	3-20-14, 6-23-14, 9-18-14, 12-15-14	3-20-14, 6-23-14, 9-18-14, 12-15-14	Both 3-20-14, 6-23-14, 9-18-14, 12-15-14	3-20-14, 9-18-14	Both 3-20-14, 9-18-14	3-20-14, 9-18-14	n/a	3-20-14, 9-18-14

## Red Mountain (RM)



Site Name	Red Mountain
AQS ID	04 013 7021
GPS Coordinates	33°30.475', 111°45.277'
Address	15115 Beeline Highway, Scottsdale, AZ 85256
County	Maricopa
Basic Monitoring Objective	NAAQS Comparison, Public Info
Representative Area	CBSA Phoenix-Mesa-Scottsdale
Traffic Count (AADT)	n/a, major road more than 250 meters north

**Site Description:** The monitoring site is located south of the old Red Mountain Trap & Sheet building. The Trap and Skeet facility was closed and all buildings removed that used to provide RV hookups. A large portion of the area is open-range populated with creosote scrubs and desert plants and is approximately 1 mile southeast of State Highway 87 Beeline Highway. The monitoring station was established in the summer of 2002 and monitoring immediately followed. In May 2010 the monitoring station was upgraded with a new monitoring shelter, new meteorological tower and the electrical connection was revamped.

The criteria pollutant ozone is monitored at this site to represent urban and regional scales. The meteorological system of wind speed, wind direction, atmospheric pressure, ambient temperature and relative humidity are also monitored at this station. The data acquisition instrument of hourly data reports is in-house along with the ozone monitor calibration system.

**Table 30: Red Mountain**

<b>Instrument</b>	<b>Ozone</b>	<b>Wind Monitor</b>	<b>Temperature / Relative Humidity</b>	<b>Pressure</b>
Date Established	May 2002 / Jan 2012	April 2002	April 2002	May 2003
Sampler Make/Model	Thermo 49i	RM Young 05305 AQ	RM Young 41382	RM Young 61202V
Monitor Type	SLAMS Tribal	n/a	n/a	n/a
Scale	Urban / Regional	n/a	n/a	n/a
Objective Type	High Pollution / Transport	n/a	n/a	n/a
POC	1	n/a	n/a	n/a
Parameter Code	44201	61103 and 61104	62101 and 62201	64101
Method Code	047	065	020 and 011	011
Analytical Lab	n/a	n/a	n/a	n/a
Nearest Road	Beeline Highway	Beeline Highway	Beeline Highway	Beeline Highway
Distance / Direction to Roadways	608 meters / north	608 meters / north	608 meters / north	608 meters / north
Airflow Arch	360	360	360	180
Inlet Height	4.1 meters	10.3 meters	2.6 meters	2.5 meters
Distance from trees	n/a	n/a	n/a	n/a
Distance between Collocated Samplers	n/a	n/a	n/a	n/a
Distance to furnace or incinerator	n/a	n/a	n/a	n/a
Distance obstructions on roof	n/a	n/a	n/a	n/a
Schedule	continuous	continuous	continuous	continuous
Probe Material	Stainless Steel	n/a	RTD / Intercap	n/a
Residence Time	10 seconds	n/a	n/a	n/a
Surrounding Area	Desert	Desert	Desert	Desert
Groundcover	Gravel	Gravel	Gravel	Gravel
Changes in 18 months	No	No	No	No
Frequency QC check	Bi-weekly	n/a	n/a	n/a
Frequency of flow verification	n/a	n/a	n/a	n/a
Dates of Audit Evaluation	3-20-14, 6-23-14, 9-18-14, 12-15-14	3-20-14, 9-18-14	Both 3-20-14, 9-18-14	3-20-14, 9-18-14

## Lehi (LE)



Site Name	Lehi
AQS ID	04 013 7022
GPS Coordinates	33°28.472', 111°48.303'
Address	3250 North Stapley Drive, Mesa, AZ 85203
County	Maricopa
Basic Monitoring Objective	NAAQS Comparison, Public Info, Research
Representative Area	CBSA Phoenix-Mesa-Scottsdale
Traffic Count (AADT)	Rural road with no official traffic count available - east

**Site Description:** The Lehi monitoring site was situated primarily for ozone saturation studies during the summer months then developed into a monitoring station in January 2005. Community developed areas such as the Lehi Community Recreation Building is diagonally across the intersection. The monitoring site is inside the Police/Fire Substation building and also located on the roof for PM and meteorological monitoring. The site is bordered on the north and east by agricultural field, on the west by neighborhood homes, a Booster Pump Facility adjacently north and the Community Recreation Center directly south.

The SRPMIC monitors the ambient air quality particulate matter (PM<sub>10</sub>) from this site and also monitors the meteorological system of wind speed, wind direction, relative humidity, barometric pressure, precipitation and ambient temperature along with the data acquisition system. The criteria pollutant ozone is monitored here seasonally from April 1 to November 1 each year.

**Table 31: Lehi**

<b>Instrument</b>	<b>Ozone</b>	<b>PM<sub>10</sub></b>	<b>Wind Monitor</b>	<b>Temperature / RH</b>	<b>Pressure</b>	<b>Precipitation</b>
Date Established	June 2004	January 2005	Dec 2005	Dec 2005	Dec 2005	Dec 2005
Sampler Make/Model	Teledyne 400E / T400 (6-6-14)	R&P FRM 2000	RM Young 05305 AQ	RM Young 41382	RM Young 61202V	RM Young 52260
Monitor Type	SLAMS Tribal	SLAMS Tribal	n/a	n/a	n/a	n/a
Scale	Neighborhood	Neighborhood	n/a	n/a	n/a	n/a
Objective Type	Population / Transport	Population	n/a	n/a	n/a	n/a
POC	1	1	n/a	n/a	n/a	n/a
Parameter Code	44201	81102	61103 and 61104	62101 and 62201	64101	65102
Method Code	087	098	065	020 and 011	011	011
Analytical Lab	n/a	Inter Mountain Lab	n/a	n/a	n/a	n/a
Nearest Road	Stapley Drive	Stapley Drive	Stapley Drive	Stapley Drive	Stapley Drive	Stapley Drive
Distance / Direction to Roadways	18.3 meters / east	20.8 meters / east	17.8 meters / east	16.2 meters / east	19 meters / east	19 meters / east
Airflow Arch	360	360	360	360	360	360
Inlet Height	6.7 meters	6.4 meters	9.5 meters	5 meters	5.1 meters	5.6 meters
Distant from trees	10.4 meters	20 meters	12 meters	8 meters	10 meters	10 meters
Distance between Collocated Samplers	n/a	No collocate sampler 2014	n/a	n/a	n/a	n/a
Distance to furnace or incinerator	8 meters north (furnace)	29.5 meters north (furnace)	n/a	n/a	n/a	n/a
Distance obstruction on roof	27.5 meters west	7.7 meters west	28.2 meters west	29.8 meters west	26.9 meters west	26.9 meters west
Schedule	continuous	1 in 6 Days	continuous	continuous	continuous	continuous
Probe Material	Stainless Steel	n/a	n/a	RTD / Intercap	n/a	Tipping Bucket
Residence Time	9.0 seconds	n/a	n/a	n/a	n/a	n/a
Surrounding Area	Residential / Agricultural	Residential / Agricultural	Residential / Agricultural	Residential / Agricultural	Residential / Agricultural	Residential / Agricultural
Groundcover	Pavement / gravel	Pavement / gravel	Pavement / gravel	Pavement / gravel	Pavement / gravel	Pavement / gravel
Changes in 18 months	No	Yes	No	No	No	No
Frequency QC check	Bi-weekly	Bi-weekly	n/a	n/a	n/a	n/a
Frequency of flow verification	n/a	Monthly	n/a	n/a	n/a	n/a
Dates of Audit Evaluation	3-20-14, 6-23-14, 9-18-14, 12-15-14	3-20-14, 6-23-14, 9-18-14, 12-15-14	3-20-14, 9-18-14	3-20-14, 9-18-14	3-20-14, 9-18-14	n/a

## High School (HS)



Site Name	High School
AQS ID	04 013 7024
GPS Coordinates	33°30.483', 111°50.268'
Address	4827 North Country Club Drive, Scottsdale, AZ 85256
County	Maricopa
Basic Monitoring Objective	NAAQS Comparison, Public Info, Research
Representative Area	CBSA Phoenix-Mesa-Scottsdale
Traffic Count (AADT)	Rural road with no official traffic count available - west

**Site Description:** The High School site was located on the property of Salt River High School in the annex of the Maintenance Electrical Facility room and then moved to the monitoring section next door in March 2012 to have better access for student outreach. The site was established in April 2006 after relocating from the Early Childhood Education Center Air Station because the ozone monitoring site did not meet the sitting criteria due to facility expansion to the adjacent building. The site has been operational since July 2002. The area had rapid facility growth that included the new High School that commenced in the fall 2006, an Elementary School to the southeast, residential homes constructed to the east, several new school ballparks to the east, and currently there is a proposed plan for a Junior High School to the north. The Central Arizona Project Aqueduct Canal borders along the north section and surrounding the area are open agricultural fields to the north and south.

Particulate matter (PM<sub>10</sub>) is one of the criteria pollutants monitored at this site. The ozone seasonal monitoring is monitored at this facility from April 1 to November 1 each year.

**Table 32: High School**

<b>Instrument</b>	<b>Ozone</b>	<b>PM<sub>10</sub></b>
Date Established	May 2006	October 2012
Sampler Make/Model	Thermo / 49C / 49i / (4-1-14)	Thermo 1405
Monitor Type	SLAMS Tribal	SLAMS Tribal
Scale	Neighborhood	Neighborhood
Objective Type	Population / Transport	Population / High Pollution
POC	1	2
Parameter Code	44201	81102
Method Code	047	079
Analytical Lab	n/a	n/a
Nearest Road	Country Club Drive	Country Club Drive
Distance / Direction to Roadways	141 meters / west	138 meters / west
Airflow Arch	360	360
Inlet Height	7.3 meters	6.7 meters
Distance from trees	13.1 meters	15 meters
Distance between Collocated Samplers	n/a	n/a
Distance to furnace or incinerator	27.3 meters southwest (furnace)	24.9 meters southwest (furnace)
Distance obstruction on roof	16.5 meters southwest	15.6 meters southwest
Schedule	continuous	continuous
Probe Material	Stainless Steel	n/a
Residence Time	9.1 seconds	n/a
Surrounding Area	School Facility / Agricultural	School Facility / Agricultural
Groundcover	Pavement / Aggregate	Pavement / Aggregate
Changes in 18 months	No	No
Frequency QC check	Bi-weekly	Bi-weekly
Frequency of flow verification	n/a	Monthly
Dates of Audit Evaluation	6-23-14, 9-18-14	3-20-14, 6-23-14, 9-18-14, 12-15-14

## PUBLIC NOTICE AND COMMENT

### Public Notice Information

In reference to the 40 CFR Part 58.10, a monitoring agency must have their annual network plan made available for public comment for at least 30 days before submitting to the EPA. The Salt River Pima Maricopa Indian Community's Air Quality Program released information of their 2014 SRPMIC Air Monitoring Network Review out to public for comments on May 20, 2015. The following are some of the notifications and announcement made to the public.

- Posted the Public Notice for Comment on SRPMIC EPNR website [www.srpmic-nsn.gov/epnr/](http://www.srpmic-nsn.gov/epnr/)
- Advertised the Notice for Public Comment in the Au-Authm Action News newspaper, the biweekly SRPMIC tribal newspaper
- Posted the Public Notice for Comment in Community Announcement section on SRPMIC Internet
- Presentation at SRPMIC Public Meeting on June 17, 2015

The copy of the released notification and announcement made to the public is included in Public Notice Advertisement.

### Public Comments

The following are the comments received from public through call via telephone, public meeting and the hand delivered comments.

**Table 33: Maricopa Associations of Governments (MAG) on June 8, 2015**

	Comments and Questions
1	First paragraph on Page 8 states sixteen exceedance-days for eight-hour ozone. In Table 23 on Page 15 for 8-Hour Ozone there was nine exceedance-days. <i>Page 8 was corrected to nine exceedance-days.</i>
2	Second paragraph of Ozone Monitoring on Page 17 stated eleven exceedances-days for eight-hour ozone. In Table 23 on Page 15 for the 8-Hour Ozone, there was nine exceedance-days. <i>Page 17 was corrected to nine exceedance-days.</i>
3	Last paragraph on Page 17 for Lehi ozone monitor. When ozone Model T400 was operated briefly because of multiply problems, why did Lehi ozone monitor got 97.9% for one-hour and 98% for eight-hour data completeness? <i>The statement was re-written to clarify that original monitor 400E was re-installed to operate remainder of the ozone season.</i>

**Table 34: SRPMIC Public Meeting on June 17, 2015**

	<b>Comments and Questions</b>
1	What is the Air Monitoring Network Plan?
2	What is the most common source of ozone?
3	What is VOC?
4	Why do SRPMIC have to go through vehicle emissions, unlike Navajo Nation or Gila River?
5	SRPMIC get any of the money from the emission fees for the SRPMIC Air Program?
6	What is the most common source of the particulates? (PM <sub>10</sub> )
7	Does pollution drift onto SRPMIC from the city?
8	Why is Red Mountain site so high in ozone reading?
9	Does the Freeway 101 on SRPMIC contribute to pollution on the Community?
10	What is the next most common pollutant other than ozone and PM <sub>10</sub> ?
11	What does the number after the "PM" designation, such as 10 and 2.5?
12	What's the Model T400 in Lehi?
13	Nonattainment for ozone exceed the standard for just a few days a year?
14	Is the rest of the County have the same standard?
15	Are the readings the same as the City/County compared to SRPMIC?
16	Are we going to put in more air station?
17	Are the whole program EPA funded?

**Responses to the Public Comments and Questions:**

All of the questions above were responded with adequate answers.

**Table 35: Hand Delivered Comments and Questions on June 19, 2015**

	<b>Comments and Questions</b>
1	The Spatial Scale table on Page 3. Is this already understood? I don't comprehend.
2	Table 4: Site Instrumentation on Page 4. These numbers represent what?
3	Second paragraph of Ozone Monitoring on Page 17. What is the fourth highest?
4	Second paragraph on Page 21. Why do you think that is to the statement of approximate 20% decreased of maximum one-hour ozone between 2005 and 2014?

**Responses to the Public Comments and Questions:**

All of the questions above were responded with adequate answers.

Public Comment Advertisement

Newspaper Advertisement:

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**SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY**  
 Community Development Department  
 Environmental Protection & Natural Resources  
 10005 EAST OSBORN ROAD, SCOTTSDALE, AZ 85256 (480) 362-7500  
 EPNR@srpmic-nsn.gov

**NOTICE FOR PUBLIC COMMENT AND MEETING**

Salt River Pima Maricopa Indian Community  
**2014 Air Monitoring Network Review**

Community Development Department  
 Environmental Protection & Natural Resources Division  
**AIR QUALITY PROGRAM**

**PURPOSE OF MEETING:** To provide an opportunity for public comments on Salt River Pima Maricopa Indian Community's 2014 Air Monitoring Network Review

**SUMMARY:** In reference to 40 Code of Federal Regulations (CFR) Part 58.10 Annual air monitoring network plan and periodic network assessment. The Salt River Pima Maricopa Indian Community, Community Development Department's (CDD) Environmental Protection & Natural Resources Division (EPNR) Air Quality Program make its annual air monitoring network plan available for public comments before submission to the Environmental Protection Agency Region 9. The plan includes a statement of purposes for each monitor that provides detailed information about collection of monitoring data, network plan purposes and monitoring site information. The document is available for review at CDD/EPNR website [www.srpmic-nsn.gov/government/epnr/](http://www.srpmic-nsn.gov/government/epnr/) and hardcopy may be request at CDD/EPNR office at Two Waters Building, 3rd Floor, 10005 East Osborn Road, Scottsdale, AZ 85256. All public comments can be submitted to CDD/EPNR, 10005 East Osborn Road, Scottsdale, AZ 85256.

**PUBLIC MEETING:** This meeting invites all members of the public to a hearing on the SRPMIC 2014 Air Monitoring Network Review. CDD/EPNR Air Quality Program is providing an opportunity for interested parties to submit written or verbal comments. **The deadline for comment period is June 22, 2015.**

Date: JUNE 17, 2015  
 Time: 5 p.m. - 7:30 p.m.  
 Location: Two Waters, Building A, 1st Floor, Mesquite Rm.  
 10005 East Osborn Road  
 Scottsdale, AZ 85256

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**Casino Arizona Human Resources**  
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 For more information contact...  
**Cheryl Doka @ 480-850-7761 or Melissa Ray @ 480-850-5779**



## Community Announcement:

<b>Title</b>	Public Notice for Comments and Meeting
<b>Summary</b>	Opportunity for public comments on SRPMIC's 2014 Air Monitoring Network Review
<b>Category</b>	Community Notice/Event
<b>Location</b>	Two Waters, Building B, 1st Floor, Mesquite Room
<b>Event Start Time</b>	6/17/2015 5:00 PM
<b>Event End Time</b>	6/17/2015 7:30 PM
<b>Admission Fee</b>	
<b>Details</b>	CDD/EPNR Air Quality Program (AQP) will hold a meeting for public comments to discuss the SRPMIC's 2014 Air Monitoring Network Review in accordance to 40 CFR Part 58.10 of annual air monitoring network plan and periodic assessment. The review plan covers the summary of 2014 ambient air monitoring activities of pollutants measured, network design, network plans and details of data statistics and site details. The purpose of public meeting is to receive comments from the public on network review before submission to EPA Region 9. Public may comment in person or through written statements to AQP. AQP will provide PowerPoint presentation about the program and hardcopies of network review be available. The document is also available on EPNR website <a href="http://www.srpmic-nsn.gov/government/epnr/">www.srpmic-nsn.gov/government/epnr/</a> . The deadline for comment period is June 22, 2015.
<b>Contact Name</b>	Stan Belone
<b>Contact Phone Number</b>	480-362-7626
<b>Contact Email Address</b>	<a href="mailto:stan.belone@srpmic-nsn.gov">stan.belone@srpmic-nsn.gov</a>
<b>Publish to Internet</b>	Yes
<b>Publish to Email</b>	Yes
<b>Publish to Intranet</b>	Yes

## Website Notice:

**SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY**

Home · Community · Government · History & Culture · Economic Development · Enterprises · Employment

**EPNR**

- Land Stewardship
  - Land Use Compliance
  - Waste Management
  - Range Management
  - C.A.R.P.
  - Brownfields
- Environmental Stewardship
  - Air Quality
  - Water Quality
  - Pesticides & Hazardous Substances
  - Environmental Compliance Program
- Other Information
  - Fall Overhaul

**CDD**

### Environmental Protection & Natural Resources

**Who We Are**

The Environmental Protection and Natural Resources Division (EPNR) of the Community Development Department (CDD) was established to enhance the quality of life within the Salt River Pima-Maricopa Indian Community (SRPMIC) by protecting and preserving the land, ecosystems, wildlife, history, and natural resources of the Community.

**What We Do**

EPNR administers environmental regulatory programs, addresses environmental issues, and monitors growth and development to reduce the impact to the Community's natural resources. EPNR staff is frequently out in the Community performing site inspections, and monitoring activities. The division also manages and analyzes data, interprets consultative work, writes technical reports, and enforces environmental regulations.

In addition, EPNR staff provides environmental outreach and education to increase awareness about environmental issues that impact the Community. In an ongoing effort to strengthen the bond between the people of the Community and their land, presentations to the Community Council, schools, and the general public are available.

**Report a Site**  
[Brownfields Information & Assessment Request Form](#)

**Public Notice for Comments:** [SRPMIC 2014 Air Monitoring Network Review](#) [PDF]

**Presentation at the Public Meeting:**



# Notice of Public Comments

**Salt River Pima Maricopa Indian Community's  
2014 Air Monitoring Network Review**

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**June 17, 2015  
5:00 pm – 7:30 pm  
Mesquite Room  
Two Waters Building B**

**Community Development  
Department (CDD)  
Environmental Protection &  
Natural Resources (EPNR)  
Air Quality Program**



**CDD/EPNR Air Quality Program provides an  
opportunity for public comments to discuss SRPMIC  
2014 Air Monitoring Network Review**

- Accordance to 40 CFR Part 58.10 for annual monitoring data
- EPA Regulatory program
- Available for public comments 30 days prior to submission to EPA
- Covers ambient air monitoring activities of four sites 2014
- Summary of pollutant measured, network design and data statistics
- Receive comments from public in person or written statements
- Hardcopies available or obtained through website [srpmic-nsn.gov/government/epnr/](http://srpmic-nsn.gov/government/epnr/)
- Deadline comment period is June 22, 2015

## About the Air Quality Program's Ambient Air Monitoring

- ❑ Established sites and started collecting data in 2002
- ❑ Data submission to Air Quality System (AQS) in 2005
- ❑ Air toxics monitoring at Senior Center site 2005 - 2006
- ❑ Gained Treatment as State (TAS) recognition in 2008
- ❑ Developed drafted ordinances in 2011



### SRPMIC Air Monitoring Sites

#### Senior Center

- ❑ Ozone
- ❑ PM10
- ❑ PM2.5
- ❑ Meteorological

#### Red Mountain

- ❑ Ozone
- ❑ Meteorological

#### Lehi

- ❑ Ozone
- ❑ PM10
- ❑ Meteorological

#### High School

- ❑ Ozone
- ❑ PM10



## SRPMIC Air Quality Monitoring Stations



## Pollutions

Some potential sources that impacts the air quality in the Community



## Background of Air Quality Pollution Control

- ❑ Under the Clean Air Act (CAA), EPA proclaimed the National Ambient Air Quality Standard (NAAQS) for certain common air pollutants
- ❑ NAAQS are concentration levels which EPA has determined to be necessary to protect public health
- ❑ Under the CAA, EPA is also responsible for designating areas of the country as; attainment, nonattainment or unclassifiable

Clean Air!



## SRPMIC resides in Maricopa County, AZ Maricopa County designation area is classified as nonattainment for Ozone and PM10 pollutant

- ❑ An agency continues exceeds the health standards (NAAQS) and violates the NAAQS standard most likely be in nonattainment
- ❑ In 2014, SRPMIC had nine exceedance-days of 8-Hour standard for ozone and had three exceedance-days of 24-Hour standard for PM10
- ❑ Some of the exceedances occurred are from activities in the Community

Pollutant	Interval	Site	Concentration	Date	Exceed Days	
Ozone	1-Hour	None	-	-	9	
		RLI	0.096	6/6		
	8-Hour	RLI	0.089	6/5		
		RLI	0.080	5/25		
		RLI	0.080	5/24		
		RLI	0.078	5/6		
		RLI	0.078	5/7		
		RLI	0.077	5/25		
		RLI	0.076	6/7		
		SC	0.065	6/6		
		12	RLI	0.082		6/6
			RLI	0.077		6/5
RLI			0.076	6/9		
	15	RLI	0.076	6/7		
		RLI	0.082	6/6		
		RLI	0.077	6/5		
PM10	24-Hour	SC	-	-	3	
		LE	-	-		
	RLI	242	5/16			
	RLI	228	7/29			
	RLI	191	7/23			
Annual	None	-	-			
PM2.5	24-Hour	None	-	-	0	
	Annual	None	-	-		

Community Outreach on Daily Air Quality Conditions and Events  
 High pollution advisories are posted in SRPMIC website Community Alerts and Digital Signage  
 Flag Communication Network by color flags reflects the air quality index (AQI) colors  
 Air quality event notifications posted in Digital Signage and the Community Newspaper



**EPNR Air Quality ADVISORY**  
**PM10 HIGH POLLUTION ADVISORY HAVE BEEN**  
**ISSUED FOR THURSDAY, JULY 3, 2014**  
**Sensitive populations should consider reducing**  
**prolonged or heavy outdoor exertion**

This AQI: AQI 151 Category: **Red** PM10

Health	Visibility	Exposure to Sensitive Groups	Color	Visibility	Health
Good	10 - 15	101 - 150	Red	100 - 150	101 - 150

**This Advisory**

- Avoid high intensity or prolonged outdoor exertion.
- Avoid the use of lawn mowers, gas-powered tools, and other equipment during the High Pollution Advisory.
- Limit the time you spend outdoors.
- Sensitive populations should consider reducing prolonged or heavy outdoor exertion.
- Learn more about air pollution at [www.epa.gov/epa/airquality](http://www.epa.gov/epa/airquality)

Additional information is available at [www.epa.gov/epa/airquality](http://www.epa.gov/epa/airquality). By using email, you'll receive a different

**Health Implications: Sensitive groups should**

avoid prolonged or heavy outdoor exertion. The health effects from multiple exposures to air pollution can be more severe than those from a single exposure to air pollution.

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EPNR is available for questions or concerns via their hotline at 480-562-7500 or at [EPNR@srpmic.com](mailto:EPNR@srpmic.com).

Salt River Pima Maricopa Indian Community  
 Community Development Department  
 Environmental Protection & Natural Resources Division  
**AIR QUALITY PROGRAM**  
[www.srpmic-nsn.gov/government/epnr/](http://www.srpmic-nsn.gov/government/epnr/)  
 10005 East Osborn Road  
 Scottsdale, AZ 85256

CHRISTOPHER "CHRIS" HORAN, EPNR MANAGER  
 STAN BELONE, ENVIRONMENTAL ENGINEER  
 MANGAS SLINKEY, SR. ENVIRONMENTAL SPECIALIST  
 CORWIN "SHIMMY" SMITH, ENVIRONMENTAL SPECIALIST

## **ABOUT THE DOCUMENT**

### **Addendum to the Document**

There is an addendum made after the original draft SRPMIC's 2014 Air Monitoring Network Review. On Page 20 of the last paragraph was included on proposed changes for the High School Air Station for meteorological installation and the anticipation of installing a video camera.