

South Coast Air Quality Management District Deposition Plate Studies

Late in 2007, the AQMD completed data analysis for the MATES-III study, a regional evaluation of air toxics pollution in Southern California. Results indicated a noticeable upward trend of hexavalent chromium at the Western Riverside Air Monitoring Station relative to a previous air toxics study in 1998. This finding was contrary to anticipated levels, as several AQMD regulations should have resulted in a decrease of chrome 6 emissions.

AQMD staff investigated the reasons for the increase which included numerous activities related to air sampling, permit reviews, area-wide surveys and surveillance, air quality modeling, material and soil sample collection, and detailed chemical analysis. One type of sample that was collected were fallout or deposition samples. These samples were collected over three phases on glass plates that were exposed to the air for 4 to 7 days. The samples for which results are given below covered a wide geographic area in an effort to determine potential concentration gradients and thereby identify areas where sources of chrome 6 may exist. Results are shown in parts per billion and may also be expressed as nanogram per gram (ng/g); a nanogram is one billionth of a gram.

Caution needs to be taken in interpreting these results. Fallout or deposition sample results are not useable to determine the concentration of hexavalent chromium in ambient air. Thus these types of samples are not necessarily indicative of exposure. They are useful in providing an indication of geographic variations and in focusing on areas to search for sources of Hexavalent Chromium.

PHASE I

Deployed	Collected	Sample Location	Water Extraction
			Cr 6+ (ppb)
1/11/2008	1/18/2008	AQMD HQ Diamond Bar 21865 Copley Dr.	High wind/plate broken
1/11/2008	1/18/2008	Fontana AMS** 14300 block of Arrow Hwy	1350
1/11/2008	1/18/2008	Mira Loma AMS 5100 block of Poinsetta Pl.	410
1/11/2008	1/18/2008	Rubidoux AMS 5800 block of Mission Blvd.	1780*
1/11/2008	1/18/2008	Riverside-Magnolia AMS (Magnolia & Arlington)	2800
1/11/2008	1/18/2008	San Bernardino AMS 24300 block of E. 4th St.	460
1/11/2008	1/18/2008	5300 block of Via Ricardo, Riverside (Sampling site #2)***	14000
1/11/2008	1/18/2008	11700 block of Cedar in Bloomington	4100
1/11/2008	1/18/2008	1200 block of S. Rancho Ave.	5300
1/11/2008	1/18/2008	Flabob Airport 4100 Block of Mennes Ave.	High wind/plate broken
1/11/2008	1/18/2008	6000 block of Terragona Ave., Riverside	High wind/plate broken
1/11/2008	1/18/2008	Veterans Park, Colton	2300
1/11/2008	1/18/2008	3500 block of Rubidoux Blvd	2940
1/11/2008	1/18/2008	2900 block of S. Riverside Ave., Colton	700
1/11/2008	1/18/2008	2400 block of 24th St., Riverside	7700
1/11/2008	1/18/2008	1100 block of Hall Ave., Riverside (site #1)***	High wind/plate broken
1/11/2008	1/18/2008	400 block of Chandler Pl., San Bernardino, (Sampling site #4)***	9900

* Rubidoux glass plates were average of two glass plates placed at the same location (Cr6+ concentration: glass plate 1 = 1668 ppb; glass plate 2 = 1889 ppb)

** AMS = Air Monitoring Station operated by AQMD.

***Sampling locations based on number can be seen on map within "Air Quality Monitoring Data.."

PHASE II

Deployed	Collected	Sample Location	Water Extraction
			Cr 6+ (ppb)
2/11/2008	2/19/2008	Rubidoux AMS* 5800 block of Mission Blvd.	90
2/11/2008	2/19/2008	Rubidoux AMS 5800 block of Mission Blvd. (Duplicate sample)	120
2/12/2008	2/19/2008	1900 block of W. Valley Blvd., Colton (Sampling site #9)***	130
2/12/2008	2/19/2008	Rialto Metrolink 200 block of Palm St. Rialto	540
2/13/2008	2/19/2008	Intersection of Riverside & Cameron	550
2/11/2008	2/19/2008	1200 block of S. Rancho Ave., Colton	160
2/12/2008	2/19/2008	9200 block of Galena St, Riverside	70
2/12/2008	2/19/2008	Flabob Airport 4100 block of Mennes Ave.	100
2/12/2008	2/19/2008	2900 block of S. Riverside Ave Colton	130
2/12/2008	2/19/2008	2400 block of 24th St., Riverside	500
2/11/2008	2/19/2008	11700 block of Cricket Dr.	250
2/11/2008	2/19/2008	5300 block of Via Ricardo, Riverside (Sampling site #2)***	360
2/11/2008	2/19/2008	400 block of Chandler Pl., San Bernardino, (Sampling site #4)***	1170
2/11/2008	2/19/2008	Fontana AMS* 14300 block of Arrow Hwy	520
2/11/2008	2/19/2008	Mira Loma AMS* 5100 block of Poinsetta Pl.	170
2/13/2008	2/19/2008	100 block of Maryess Street, San Bernardino	120
2/12/2008	2/19/2008	335 W. Rialto Ave., Rialto	70
2/11/2008	2/19/2008	Riverside-Magnolia AMS (Magnolia & Arlington)	40
2/11/2008	2/19/2008	Veterans Park, Colton	740
2/12/2008	2/19/2008	1100 block of Hall Ave., Riverside (site #1)***	3800
2/12/2008	2/19/2008	1100 block of Hall Ave., Riverside (site #1)*** - Duplicate	4000
2/11/2008	2/19/2008	6100 block of Moraga, Riverside	150
2/12/2008	2/19/2008	3500 block of Rubidoux Blvd., Rubidoux	300
2/12/2008	2/19/2008	11700 block of Cedar in Bloomington	1180
2/11/2008	2/20/2008	3600 block of Beechwood St., Riverside	290
2/12/2008	2/20/2008	1300 block of Spruce Str., Riverside	Not Analyzed**
2/12/2008	2/19/2008	300 block of East E. Str., Colton	Not Analyzed**
2/12/2008	2/20/2008	300 block of Chandler Place San Bernardino	Not Analyzed**
2/12/2008	2/19/2008	1500 block of N. Rancho, Colton	Not Analyzed**
2/11/2008	2/19/2008	San Bernardino AMS 24300 block of E. 4th St.	Not Analyzed**
2/12/2008	2/19/2008	6000 block of Terragona Ave., Riverside	Not Analyzed**

* AMS = Air Monitoring Station operated by AQMD.

** Rainwater on glass plate

***Sampling locations based on number can be seen on map within "Air Quality Monitoring Data.."

PHASE III

Deployed	Collected	Sample Location	Water Extraction
			Cr 6+ (ppb)
3/7/2008	3/13/2008	6000 block of Terragona Ave., Riverside	5,740
3/7/2008	3/13/2008	1100 block of Hall Ave., Riverside (site #1)***	12,350
3/7/2008	3/13/2008	1100 block of Hall Ave., Riverside (site #1)*** - Duplicate	4,720
3/7/2008	3/13/2008	1600 W. 5th Str., San Bernardino	<3
3/7/2008	3/13/2008	1900 block of W. Valley Blvd., Colton (Sampling site #9)***	2,060
3/7/2008	3/13/2008	1200 block of Rancho, Colton	5,050
3/7/2008	3/13/2008	2400 block of 24th St., Riverside	3,840
3/7/2008	3/13/2008	1100 W. Valley Blvd., Colton	3,610
3/7/2008	3/13/2008	Intersection of Riverside & Cameron Strs.	3,650
3/7/2008	3/13/2008	Fontana AMS* 14300 block of Arrow Hwy	600

3/7/2008	3/13/2008	Riverside-Magnolia AMS (Magnolia & Arlington)	<3
3/7/2008	3/13/2008	1900 block of Agua Mensa, Colton	4,640
3/7/2008	3/13/2008	5300 block of Via Ricardo, Riverside (Sampling site #2)***	4,900
3/7/2008	3/13/2008	Rubidoux AMS* 5800 block of Mission Blvd.	3,080
3/7/2008	3/13/2008	Jurupa Hills Golf Course	<3
3/7/2008	3/13/2008	San Bernardino AMS 24300 block of E. 4th St	10
3/7/2008	3/13/2008	Veterans Park, Colton	NS**
3/7/2008	3/18/2008	6200 block of Indigo Pl, San Bernadino	260
3/7/2008	3/18/2008	7500 block of Reche Canyon, Colton	350
3/7/2008	3/18/2008	4400 block of Tyrolite St., Riverside	140
3/7/2008	3/18/2008	4400 block of Bronson St., San Bernardino	450
3/7/2008	3/18/2008	24400 block of Lamont Dr., Moreno Valley	100
3/7/2008	3/18/2008	3000 block of Pershing Ave, San Bernardino	245
3/7/2008	3/18/2008	3600 block of Beechwood Str., Riverside	240
3/7/2008	3/18/2008	100 block of Digby Ct., Riverside	590
3/7/2008	3/18/2008	19700 block of Narkham St., Riverside	120
3/7/2008	3/18/2008	23200 block of Ranger St., Moreno Valley	190
3/7/2008	3/18/2008	15900 block of Sequoia Ave, Fontana	450
3/7/2008	3/18/2008	5300 block of Pinehurst Dr., Riverside	NS
3/7/2008	3/18/2008	5700 block of Firethorn Rd., Fontana	540
3/7/2008	3/18/2008	1400 block of Haddington Dr., Riverside	270
3/7/2008	3/18/2008	2500 block of N. Quince Ave., Rialto	130
3/7/2008	3/18/2008	1600 block of W. Norwood, Rialto	380
3/7/2008	3/18/2008	1000 block of N Sunset Circle, Rialto	20
3/7/2008	3/18/2008	5300 block of Bardwell Ave, Riverside	340
3/7/2008	3/20/2008	800 block of Mission Dr. San Bernardino	440
3/7/2008	3/20/2008	6300 block of Emerald Ridge Way, Mira Loma	260
3/7/2008	3/20/2008	300 block of Highlander Dr. Riverside	<3
3/7/2008	3/20/2008	5700 block of Carsten Ct., Fontana	130
3/7/2008	3/20/2008	600 block of Meridan Ave., San Bernardino	NS**

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