



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Molly Joseph Ward
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June 17, 2014

Mr. Shawn Garvin, Regional Administrator
U.S. EPA Region III
1650 Arch Street – Mail Code: 3RA00
Philadelphia, PA 19103-2029

Subject: Virginia Annual Air Quality Monitoring 2014 Network Review

Dear Mr. Garvin:

In accordance with the Commonwealth of Virginia State Implementation Plan and requirements of the EPA 105 and PM2.5 103 Grants, the Virginia Department of Environmental Quality (DEQ) has conducted an annual review of the ambient air monitoring network.

This review was completed by the DEQ Office of Air Quality Monitoring. Attached is a listing of all sites in the Virginia Air Quality Monitoring Network as of this date. Also attached are maps of pollutant monitoring sites and instrumentation changes that have taken place since the last review and are expected to occur through June 30, 2015.

A draft of the Annual Network Review was posted for public inspection from May 12, 2014, to June 13, 2014, on the VA DEQ "Air Monitoring Public Notices" web page. No comments were received from the public as a result of this public notice. Please feel free to contact me if you have any questions regarding this transmittal.

Sincerely,

A handwritten signature in black ink, appearing to read "David K. Paylor".

David K. Paylor

cc: Alice Chow, EPA III
Mike Dowd, Virginia DEQ Air Division Director

Attachments

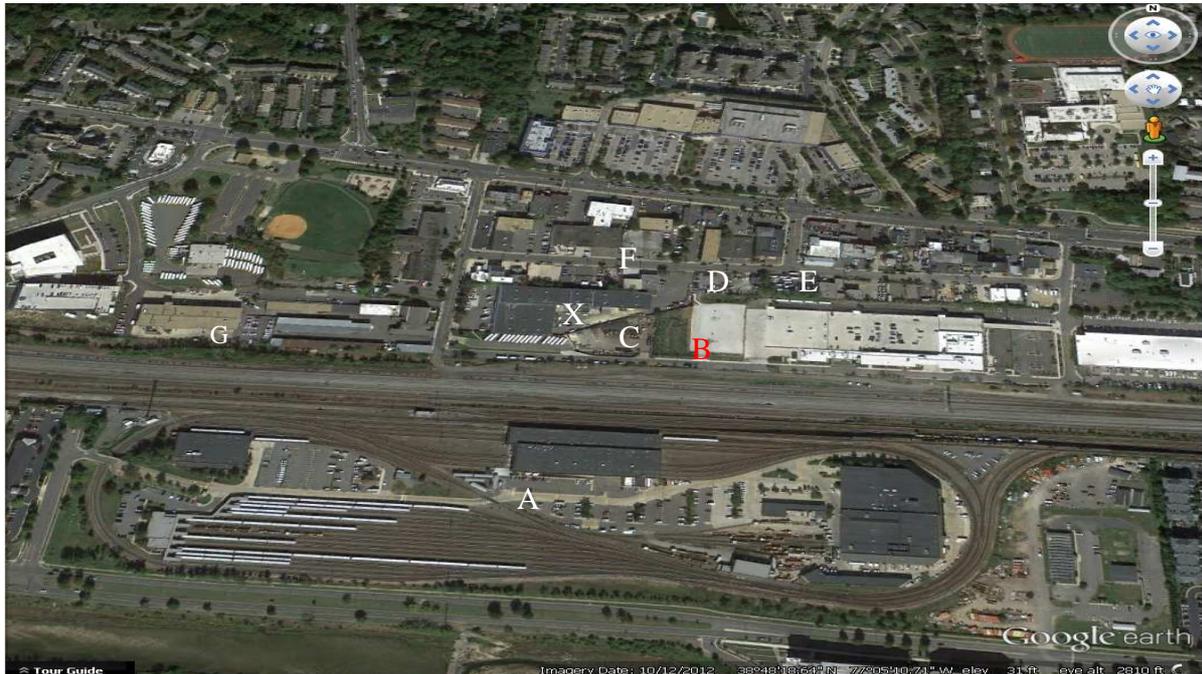
I. Virginia Air Monitoring Network Changes 2014

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY MONITORING NETWORK CHANGES

MONITORING SITE CHANGES SINCE LAST REVIEW
JULY 1, 2013 to JUNE 30, 2014

51-510-0021, L-126-I, Alexandria Transportation Warehouse, 3200 Colvin Street, City of Alexandria, AQCR7

The St. Asaph Street site (51-510-0009) was relocated to 3200 Colvin Street in August of 2012. This site originally monitored for NO₂, SO₂ and CO. The ozone monitor originally located at St. Asaph Street has been designated a special purpose monitor due to the number of potential interferences in close proximity to the site. The picture below illustrates the level of commercial activity.



- X. Monitoring site probe location
- A. Railroad Switching Yard – 250 yards from monitor probe line intakes
- B. Alexandria City Bus Maintenance and Storage Facility – 110 yards
- C. Asphalt Grinding Operation – 45 yards
- D. Roofing Company – 145 yards
- E. Auto Body Shop – 230 yards
- F. Metal Forming Operation – 90 yards
- G. Alexandria City Fleet Services – 325 yards

In December of 2013 the Alexandria City Department of Transportation and Environmental Services notified DEQ that the primary operator for the Alexandria site was leaving city employment and that the Back-up operator would need some help maintaining the Colvin Street site. As a result of this request the Office of Air Quality Monitoring performed the following:

- A. The special purpose Ozone Monitor located at the site was shutdown and brought back to the AQM Offices where it was cleaned, calibrated and placed into operating inventory for the other ozone sites throughout the Commonwealth.
- B. The Sulfur Dioxide monitor was relocated from the Alexandria monitoring site to the Fairfax County Site at Lee District Park (51-013-0030). This SO₂ monitor is one of three regulatorily required PWEI monitors in the Washington Metropolitan Statistical Area.

- C. AQM sent personnel to Alexandria to retrain the back-up operator on operating and QA procedures for the remaining Nitrogen Dioxide and Carbon Monoxide monitors. The AQM and NRO personnel were also sent to evaluate assess the level of retained institutional knowledge with respect to the on-going operation of an air monitoring station.
- D. AQM re-categorized the Alexandria Transportation site (51-510-0021) as a special purpose monitoring site. The effect of this change in station designation means that the data generated from this site will not be used in attainment determinations for two years past the date of the site's designation as a special purpose monitor. This change in designation will be reevaluated when Alexandria T&ES has filled the primary operator position and AQM has had the opportunity to train the new operator.

51-760-0025, 158-X, Joseph Bryan Park, City of Richmond AQCR5 (N 37° 35'26.9", W 77° 28' 8.9")

As a result of the 2010 revision to the Nitrogen Dioxide NAAQ Standard, Virginia DEQ is required to install an air monitoring site within 50 meters of the roadside for the highest Fleet Adjusted Annual Average Daily Traffic (FAADT) road segment in the targeted MSA. For the Richmond Area this is the Bryan Park Interchange. The FAADT for the Bryan Park Interchange was determined to be 259,720 Vehicles/Day based on 2008 Road Segment data.

Bryan Park Interchange Air Quality Monitoring Site



View Looking East from Top of Bryan Park Shelter



Bryan Park Near Road Monitoring Site

Data from the Bryan Park Near Road Monitoring Site began collection on October 17, 2013. The data is currently posted to the Virginia DEQ web page on the air monitoring data page. The citation is: http://vadeq.tx.sutron.com/cgi-bin/monthly_summary.pl?cams=37. This site currently monitors for NO, NO₂, NO_x, and CO. A Beta Attenuation PM_{2.5} monitor is scheduled for start up in December 2014.

51-770-0011, 109-H, Cherry Hill Site, City of Roanoke AQCR2

The Cherry Hill Monitoring Site was shutdown and removed on September 10, 2013. The site had been in continuous operation since the mid-1970's. Recently the land on which the site was located had been purchased and fenced off by Steel Dynamics. The Lead-TSP monitor on the site was a source specific monitor directed at monitoring of Lead Emissions from Steel Dynamics. The site also contained a PM₁₀ monitor.

Cherry Hill PM10 and Lead-TSP Monitoring Site



51-027-0006, 4-G, Vansant Lead TSP Site, Buchanan County, AQCR1

The Lead-TSP sampler located in Buchanan County was removed from operation on December 19, 2013. This monitoring site contained the source specific lead monitor for the Jewell Coke Co. located in Vansant. The monitor was deconstructed and removed from this site due to pending demolition and construction at a vacated industrial plant located directly next to the site. The station operated for more than 3 years so a design value has been calculated for this site. DEQ proposes that this site does not need to be replaced because the design value is less than 10% of the standard. The maximum ambient lead concentration value through the 3 years of the design value calculation is less than 10% of the standard. A request to waive the requirement for this source oriented lead monitor has been drafted and sent to EPA Region III for review and approval. A copy of this waiver request is attached to this document.

INSTRUMENT CHANGES SINCE LAST REVIEW
JULY 1, 2013 through JUNE 30, 2014

51-161-1004, 19-A6, Herman Horn ES, Roanoke County, AQCR2

Due to the shutdown of the Round Hill Montessori Site in Roanoke City (51-770-0015) in April of 2013, the particulate monitors were removed and brought back to AQM for refitting, testing and Quality Assurance procedures. The 2025 PM2.5 24 hour sampler and the TEOM continuous PM2.5 sampler were installed in June of 2013. Their first full month of operation began July 1, 2013.

51-059-0030, 46-B9, Lee District Park, Fairfax County, AQCR7

Due to the issues with the Alexandria City Site (51-510-0021, see write-up above) the PWEI SO2 monitor located at that site was relocated to the Lee District Park Site which is maintained by DEQ's Northern Regional Office. The monitor was relocated on January 8, 2014. The data from the new location has been within the range of the previous location. AQM will evaluate the data and compare it to the old site once the new site has been in operation for one year.

51-087-0014, 72-M, MathScience Innovation Center, Henrico County, AQCR5

The PAMS AutoGC and the episodic sampler were relocated to the MathScience Center Site in April of 2013. Since this time the AutoGC has not operated continually for longer than one week. The AutoGC did not operate during the 2013 PAMS season i.e. for purposes of this report

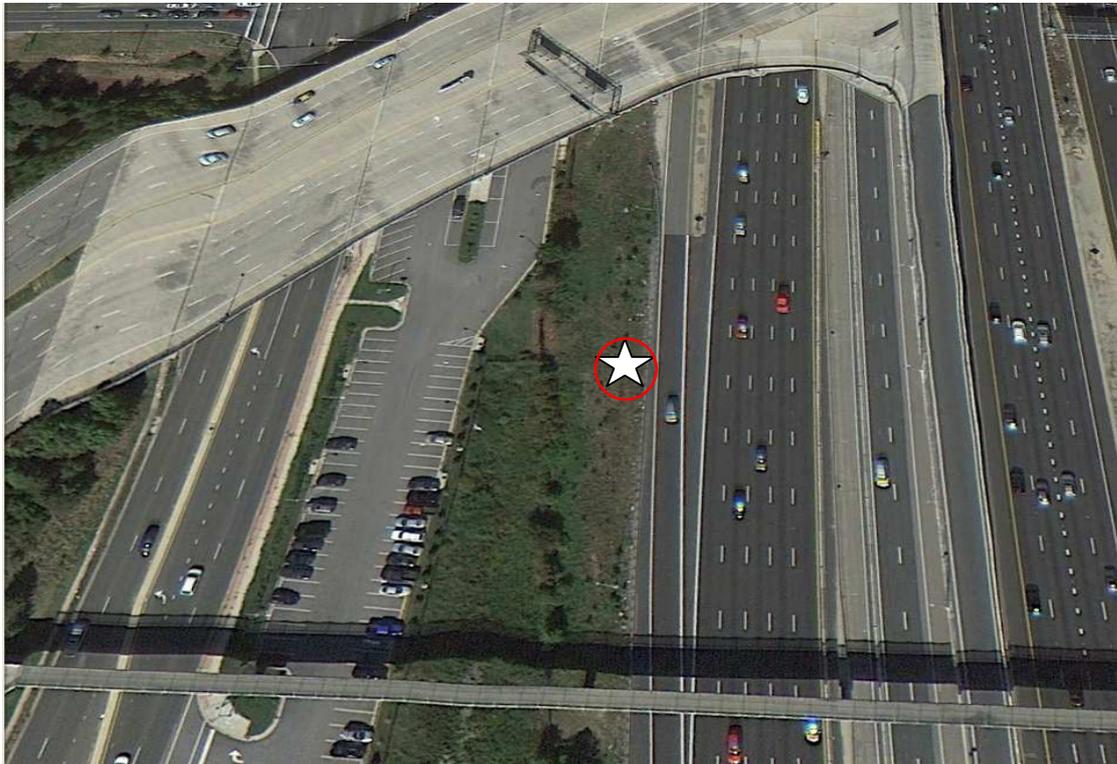
from July 1 through August 31 of 2013. The problems with the AutoGC are not related to the relocation of the unit. The existing AutoGC has been in operation since approximately 1997 and is an older design. With the assistance of the Auto GC manufacturer's representative the Office of Air Quality Monitoring has been able to get the Auto GC to operate. The unit is operating as of the beginning of the 2014 PAMS season i.e. June 1, 2014.

ANTICIPATED SITE CHANGES
JULY 1, 2014 through JUNE 30, 2015

Near Road Monitoring Sites

51-059-XXXX, Near Road Site, Fairfax County, AQCR7

In addition to the Richmond Area Near Road Monitoring site, the Northern Virginia area was also scheduled to have a Near Road site installed prior to January 1, 2014 i.e. a phase I monitoring site. The location of this monitoring site will be in the proximity of the area known as the Springfield interchange because it is the area of maximum Annual Average Daily Traffic (AADT) in the Washington Metropolitan Core Based Statistical Area (CBSA). Below is a satellite view of the proposed area of the monitoring site.



Overhead view of proposed site for Northern Virginia Near Road Monitoring Site

The Office of Air Quality Monitoring (AQM) has evaluated the I-95/I-395 interchange road segment and has determined that the best possible location for the monitoring shelter is immediately outside the Park and Ride lot in the gated access way along interstate I-95 at GPS coordinates 38° 46.083' N latitude and 77° 11.004' W longitude. This will put the site approximately 20 meters from the edge of I-95. The area is currently covered with a combination of concrete and gravel fill and is near several possible sources of power for the site. This site also has good accessibility in that there is a nearby parking area for the site operator that will allow access to this site with few safety concerns that can often accompany sites placed in near-road proximity. This site is on a VDOT easement which requires land use permitting. This process is well underway and the site should be in place and operating by December 31, 2014.

51-810-XXXX Hampton Roads Near Road Site, Along I-264, Virginia Beach, AQCR6

In addition to Richmond and Northern Virginia, the Hampton Roads area will also require installation of a near road monitoring site. In Tidewater, I-264 from the I-264/I-64 interchange to the Independence Boulevard exit in Virginia Beach have been determined to be the target road segments for this program. The Office of Air Quality Monitoring (AQM) has evaluated these road segments and has determined that the best possible location for the monitoring shelter is at the north side of the Cambria Apartments at the end of Alicia Drive at the utility easement adjacent to I-264 as shown in the figure below. The GPS coordinates of this location are 36° 50.05833' N latitude and 76° 8.5633' W longitude. This will put the site approximately 10 meters from the edge of I-264. The area is currently covered with grass and is in close proximity to a potential source of power for the site. This site also has good accessibility in that there is a nearby parking area for the site operator that will allow access to this site with few safety concerns that can often accompany sites placed in near road proximity. The Hampton Roads site is scheduled to be in place and operational by December 31, 2014.

Proposed Near Road Site Virginia Beach, Interstate I-264 (apartments not shown in figure)



51-139-0004, 29-D, Page Co. Airport, Luray, Page County; AQCR2

The Monitoring Site in Page County is located at Luray Airport. The site currently monitors for Ozone and PM2.5 (FRM filter based method). The Ozone data can be found on-line at: <http://vadeq.tx.sutron.com>. Airport officials have indicated to AQM that DEQ will have to move this monitoring site due to FAA regulations. Process of identifying a new site has begun and has been narrowed down to a few potential locations. AQM has met with the Page County School Board about possible sites on School property. This ozone site is classified as an upwind rural ozone site. This site is targeted to be moved by December 31, 2014.

ANTICIPATED INSTRUMENTATION CHANGES
JULY 1, 2014 through JUNE 30, 2015

51-760-0025, 158-X, Joseph Bryan Park, City of Richmond AQCR5
51-059-XXXX, Near Road Site, Fairfax County, AQCR7
51-810-XXXX Hampton Roads Near Road Site, Along I-264, Virginia Beach, AQCR6

Each near road monitor site will need to have included a PM2.5 monitor so that near road fine particulate matter can be included in the suite of pollutants being monitored along the road site. The regulatory requirements state that the Near Road site in Northern Virginia will be required to have the Particulate monitor installed by January 1, 2015. This requirement will be met upon start-up of the Northern Virginia Monitoring site. The implementation date for installation of the PM2.5 monitors at the Richmond and Hampton Roads Near Road sites is January 1, 2017. AQM anticipates implementing these monitors concurrent with the Northern Near Road site start up dates subject to resource availability.

51-161-1004, 19-A6, Herman Horn ES, Roanoke County, AQCR2

The Roanoke Lead TSP site will be relocated (see above) but the PM10 monitor will not be relocated along with it. Upon completion of the new Lead TSP site AQM will begin looking into the relocation of the PM10 monitor. The most likely location will be the existing site at Herman Horn ES in Roanoke County. Making this change will likely require an expansion of the fence line and will be subject to school and local approvals. AQM may have to look for an alternative location for the monitor if school and local approvals are not forthcoming.

51-510-0020, L-126-H, Tucker ES, Alexandria City, AQCR7

Currently Alexandria T&ES (see above) maintains this PM10 monitor. This is the Virginia SLAMS PM10 monitor for the Washington D.C. MSA. Long term maintenance of this monitor is uncertain at this point due to resource issues within the City staff that maintain this monitor. AQM will continue to work closely with the Alexandria personnel to be sure that this monitor continues to meet all data capture and QA requirements consistent with federal regulations and the QA Handbook. At such time as AQM determines that this monitor cannot meet appropriate regulatory requirements, the monitor will be relocated to another, existing station in the Washington D.C. MSA.

ANTICIPATED SPECIAL STUDIES ACTIVITIES
JULY 1, 2014 to JUNE 30, 2015

The product ban for wood logs fumigated by the facilities targeted in the Community Air Toxics grant monitoring study was partially lifted in September of 2013. The facilities have begun to increase their operating throughputs as their ability to market their fumigation services recovers. AQM anticipates restarting monitoring activities at these facilities in June of 2014. The original QAPP and Monitoring plan will be adhered to. No changes to either of these operating documents are required due to the monitoring timing delay. AQM anticipates that the monitoring and the data report will be completed by October 1, 2014. Once the data report is complete AQM will meet with the Virginia Health Department to begin the Risk Assessment process. The grant requires a quarterly report outlining monitoring activities and costs which outlines all the specifics of the monitoring studies performed.



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May 6, 2014

Mr. Shawn Garvin
Regional Administrator
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Subject: Request for Waiver of Source Oriented Lead-TSP Air Monitoring site

Dear Mr. Garvin:

Virginia Department of Environmental Quality (DEQ) is formally requesting a waiver of the requirement for a source oriented Lead-TSP monitor in Buchanan County, Virginia. Appendix D of 40 CFR part 58 requires that state agencies install source oriented monitors at locations near sources that emit more than one half ton per year of Lead air emissions. This section of the regulations also provides the criteria for requesting a waiver of this requirement. The technical and regulatory basis for this request is outlined in Attachment 1 to this letter.

The original Lead monitor had been in place since November 1, 2010. At the request of the owner, DEQ has removed the original monitor; and there is no possibility that the monitor can be rebuilt at the same location. The analytical information from this site indicates that there is no concern relative to any NAAQS compliance issues, and the maximum value for this site is well below the regulatory threshold of less than 50 percent of the ambient air standard. If you have any questions regarding this waiver request, please contact Chuck Turner, Director of DEQ's Office of Air Quality Monitoring, at (804) 527-5178. Thank you for your consideration of this request.

Sincerely,

A handwritten signature in black ink that reads "David K. Paylor".

David K. Paylor

Attachments

Attachment 1. - Waiver Request, Monitoring Site EPA No. 51-027-0006, Vansant Lead TSP Site, Buchanan County, Air Quality Control Region 1

Regulatory Basis for Waiver Request

The requirement to submit an annual monitoring network plan is contained in 40 CFR §58.10 entitled "Annual monitoring network plan and periodic network assessment". Paragraph 10 of §58.10 allows for a waiver request for source oriented Lead TSP monitors according to the requirements of paragraph 4.5(a)(ii) of Appendix D to 40 CFR part 58. The basis upon which a waiver can be granted from the criteria from paragraph 4.5(a)(ii) is as follows:

the State ... can demonstrate the Pb source will not contribute to a maximum Pb concentration in ambient air in excess of 50 percent of the NAAQS (based on historical monitoring data, modeling, or other means).

Applicable Ambient Air Standard

The primary and secondary ambient air quality standard for Lead TSP is specified in 40 CFR §50.16(a) and is described as "0.15 micrograms per cubic meter, arithmetic mean concentration over a 3-month period, measured in the ambient air as Pb". The method by which compliance with these standards is demonstrated is contained in paragraph (b) of the same section which states that "The national primary and secondary ambient air quality standards for Pb are met when the maximum arithmetic 3-month mean concentration for a 3-year period, as determined in accordance with appendix R of this part, is less than or equal to 0.15 micrograms per cubic meter".

Background

The Source-oriented Lead TSP monitor located at the Vansant monitoring site (EPA no. 51-027-0006) was designated a source-oriented monitor intended to determine the ambient impacts on the ambient lead concentration from Jewell Coal and Coke Company air emissions. . The monitor was located on property owned by Consol Energy Inc. and was designated as the "VP-1 Upper Stock Pile" area in company terminology. The site began operating on November 1, 2010 and was in operation through December 18, 2014. The site was shutdown and removed at the request of the Consol Energy Inc. Consol Energy intended to demolish an existing abandoned industrial operation and repurpose the property. The monitoring site was located in the area where the demolition equipment was to be located during the demolition.

Request for Waiver

The Virginia Department of Environmental Quality is requesting a waiver of the requirement to relocate a source oriented monitor for the purpose of determining ambient lead impacts from Jewell Coal and Coke Company. The monitor has operated for more than three years so a regulatorily accurate design value for Lead can be determined. The AQS AMP 480 Design Value Report for design value year 2013 indicates that the design value for this monitor is .01 which is less than 50% of the NAAQS which is the criteria for granting the waiver. The AQS AMP 480 report is attached for your review.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 PRELIMINARY DESIGN VALUE REPORT

Report Date: May. 5, 2014

Pollutant: Lead (TSP) LC(14129) Design Value Year: 2013
 Standard Units: Micrograms/cubic meter (LC) (105) REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.
 NAAQS Standard: Lead 3-Month 2009
 Statistic: 3-Month Rolling Average Level: .15 State Name: Virginia

Site ID	STREET ADDRESS	2013			2012			2011			3-Year		Total Valid Months
		Max Value	Maximum Month	Cert& Valid Param Eval Months	Max Value	Maximum Month	Cert& Valid Param Eval Months	Max Value	Maximum Month	Cert& Valid Param Eval Months	DV and Max Valid Mon/Yr	Total Valid Months	
51-009-0007	788 Colony Road	.01	JAN	S	.01	MAY	12	.02	JAN	12	.02	Y JAN 2011	36
51-027-0006	Route 628, Consolidated	.01	JAN	S	.01	JAN	12	.01	JAN	12	.01	Y JAN 2013	36
51-087-0014	2401 HARTMAN STREET MA.	.00	JAN	S	.01	NOV	9	.00	JAN	12	.01	N NOV 2012	33
51-770-0011	101 CHERRY HILL CIRCLE	.11	MAY	S	.05	JAN	12	.05	APR	11	.11	N MAY 2013	30

- Notes:**
1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
 2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
 3. Annual Values not meeting completeness criteria are marked with an asterisk (*).

II. Virginia Air Monitoring Site Listing AQCR I-VII 2014

VA DEQ, AQCR I SOUTHWEST VIRGINIA, 2014

SITE I.D.	POLLUTANT MEASURED	METHOD OR INSTRUMENT	SAMPLING INTERVAL	MONITORING OBJECTIVE	SCALE	BEGINNING DATE	MONITOR TYPE	LOCATION	LONGITUDE	LATITUDE
51-035-0001 (23-A)	PM-10	SSI HI VOL	1/6	Population	Neighborhood	5/28/89	SLAMS	Carroll Co. - Gladeville Elem. School	-80.8800	36.7025
51-197-0002 (16-B)	O3	UV Absorption	Continuous	Population	Regional	4/1/90	SLAMS	Rural Retreat - Wythe County Sewage Treatment Plant	-81.2550	36.8931
51-520-0006 (101-E)	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS	Bristol - Highland View Elem. Sch.	-82.1644	36.6078

There are no collocated monitors in AQCR I

VA DEQ, AQCR II VALLEY OF VIRGINIA, 2014

SITE I.D.	POLLUTANT MEASURED	METHOD OR INSTRUMENT	SAMPLING INTERVAL	MONITORING OBJECTIVE	SCALE	BEGINNING DATE	MONITOR TYPE	LOCATION	LONGITUDE	LATITUDE
51-069-0010 (28-J)	O3	UV Absorption	Continuous	Population	Urban	4/1/91	SLAMS	Rest, Frederick County - Lester Buildings	-78.0814	39.2828
	PM2.5 FRM	Sequential	1/3	Population	Urban	1/1/08	SLAMS			
	PM2.5	TEOM	Continuous	Background	Urban	1/1/08	SPM			
51-840-0002 (134-C)	PM-10	SSI HI VOL	1/6	Population	Neighborhood	9/13/89	SLAMS	Winchester - Courts Bldg.	-78.1631	39.1856
51-113-0003 (N-35-A)	O3	UV Absorption	Continuous	Background	Regional	5/04	Nat'l Park	Madison County - Shenandoah Nat'l Park Big Meadows	-78.4355	38.5227
	PM2.5	IMPROVE	1/3	Background	Regional		IMPROVE			
	PM2.5	TEOM	Continuous	Background	Regional		Nat'l Park			
51-139-0004 (29-D)	O3	UV Absorption	Continuous	Population	Urban	7/21/99	SLAMS	Page County - Luray Caverns Airport	-78.5047	38.6633
	PM2.5 FRM	Sequential	1/3	Background	Regional	10/00	SLAMS			
51-161-1004 (19-A6)	NO2	Chemiluminescence	Continuous	Population	Neighborhood	1/1/81	SLAMS	Vinton - Roanoke Co. Herman Horn ES	-79.8842	37.2856
	O3	UV Absorption	Continuous	Population	Neighborhood	8/81	SLAMS			
	SO2	Fluorescence	Continuous	Population	Neighborhood	1/29/87	SLAMS			
	CO	Gas Filter Corr.	Continuous	Population	Neighborhood	4/04	SLAMS			
	PM2.5 FRM	Sequential	Daily	Population	Neighborhood	4/1/08	SLAMS			
	PM2.5	TEOM	Continuous	Background	Neighborhood	4/1/08	SPM			
51-163-0003 (21-C)	O3	UV Absorption	Continuous	Background	Regional	4/8/99	SLAMS	Rockbridge Co. - Natural Bridge Station	-79.5131	37.6261
	PM2.5	IMPROVE	Continuous	Background	Regional		IMPROVE			
51-165-0003 (26-F)	SO2	Fluorescence	Continuous	Population	Neighborhood	9/22/97	SLAMS	Rockingham Co. - VDOT	-78.8195	38.4775
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	4/04	SLAMS			
	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/07	SLAMS			
	O3	UV Absorption	Continuous	Population	Neighborhood	4/1/07	SLAMS			
51-775-0011 (110-C)	PM2.5	Sequential	1/3	Population	Neighborhood	9/8/09	SLAMS	Salem - Salem High School	-80.0810	37.2979

There are no collocated monitors in AQCR II

VA DEQ, AQCR III CENTRAL VIRGINIA, 2014

SITE I.D.	POLLUTANT MEASURED	METHOD OR INSTRUMENT	SAMPLING INTERVAL	MONITORING OBJECTIVE	SCALE	BEGINNING DATE	MONITOR TYPE	LOCATION	LONGITUDE	LATITUDE
51-680-0015 (155-Q)	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	4/1/03	SLAMS	Lynchburg - Water Tank	-79.2148	37.3318
51-009-007 (53-G)	TSP-Lead	Tisch Hi-Vol TSP Sampler	1/6	Source Oriented	Neighborhood	11/1/10	SLAMS	CVTC, Madison Heights Amherst Co.	-79.1003	37.4002

There is one collocated monitor in AQCR3. A collocated Hi-Vol TSP-lead monitor is located at 53-G Madison Heights and is designated H-53-G.

VA DEQ, AQCR IV NORTHEAST VIRGINIA, 2014

SITE I.D.	POLLUTANT MEASURED	METHOD OR INSTRUMENT	SAMPLING INTERVAL	MONITORING OBJECTIVE	SCALE	BEGINNING DATE	MONITOR TYPE	LOCATION	LONGITUDE	LATITUDE
51-033-0001 (48-A)	O3 Meteorological Instrumentation	UV Absorption Wind Speed, Humidity Temp., Wind direction Barometric Pressure	Continuous Continuous	Background Population	Regional Neighborhood	4/1/93 6/1/02	SLAMS SPM	Caroline Co. - USGS Geomagnetic Center	-77.3772	38.2031
51-061-0002 (37-B)	O3	UV Absorption	Continuous	Background	Regional	9/1/81	SLAMS	Fauquier Co. - Phelps Wildlife Area	-77.7678	38.4750
51-179-0001 (44-A)	O3	UV Absorption	Continuous	Population	Neighborhood	9/1/92	SLAMS	Stafford Co. - Widewater Elem. School	-77.3703	38.4831
51-003-0001 33-A	O3 PM2.5 FRM PM2.5	UV Absorption Sequential TEOM	Continuous 1/3 Continuous	Population Population Background	Regional Neighborhood Neighborhood	4/1/08 4/1/08 4/1/08	SLAMS SLAMS SPM	Albemarle Co. - Albemarle High School	- 78.4973	38.0426
51-630-0004 (130-E)	PM-10	SSI HI VOL	1/6	Population	Neighborhood	11/12/89	SLAMS	Fredericksburg - Mercer Elem. School	-77.4864	38.3047

There are no collocated monitors in AQCR IV

VA DEQ, AQCR V STATE CAPITOL, 2014

SITE I.D. SITE I.D.	POLLUTANT MEASURED	METHOD OR INSTRUMENT	SAMPLING INTERVAL	MONITORING OBJECTIVE	SCALE	BEGINNING DATE	MONITOR TYPE	LOCATION	LONGITUDE	LATITUDE
51-036-0002 (75-B)	O3 SO2	UV Absorption Pulsed Fluorescence	Continuous	Population	Neighborhood	3/29/88	SLAMS	Charles City Co. - Route #608 Shirley Plantation	-77.2608	37.3419
			Continuous	Highest Concentration	Neighborhood	1/1/92	SLAMS			
	NO2 PM2.5 FRM	Chemiluminescence Sequential	Continuous 1/3	Population Population	Neighborhood Neighborhood	3/9/93 1/1/99	SLAMS SLAMS			
51-041-0003 (71-D)	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS	Chesterfield Co. - Bensley Armory	-77.4508	37.4361
51-041-0004 (71-H)	O3	UV Absorption	Continuous	Population	Neighborhood	4/80	SLAMS	Chesterfield Co. - Beach Rd. VDOT	-77.5936	37.3589
51-085-0003 (73-E)	O3	UV Absorption	Continuous	Highest Concentration	Urban	4/1/01	SLAMS	Hanover Co. - McClellan Road	-77.2188	37.6061
51-087-0014 (72-M)	O3 Trace CO	UV Absorption Gas Filter Correlation	Continuous	Population	Neighborhood	6/12/81	SLAMS	Henrico Co. - MathScience Center	-77.4003	37.5583
			Continuous	Population	Neighborhood	4/1/81	SLAMS			
	Trace SO2	Pulsed Fluorescence	Continuous	Population	Neighborhood	8/29/13	SLAMS			
	PM2.5 FRM	Sequential	Daily	Population	Neighborhood	1/1/99	SLAMS			
	PM2.5	TEOM	Continuous	Population	Neighborhood	7/18/00	SPM			
	PM2.5	Speciation	1/3 Mini-Trends	Population	Neighborhood	1/1/04	SPM			
	PM2.5	Carbon	1/3 Mini-Trends	Population	Neighborhood	1/1/10	SPM			
	PM-10	SSI HI VOL	1/6	Population	Neighborhood	11/1/08	SLAMS			
	PM-10	Sequential	1/3	Population	Neighborhood	10/8/09	NCORE			
	Metals	PM-10 LO VOL	1/6	Background	Neighborhood	11/1/08	NCORE			
	Lead	TSP/ICPMS	1/6	Background	Neighborhood	11/1/08	NCORE			
	Metals	TSP/ICPMS	1/6	Background	Neighborhood	11/1/08	NATTS			
	Carbonyl	TO-11A	1/6	Background	Neighborhood	11/1/08	NATTS			
	VOCs	TO-15	1/6	Background	Neighborhood	11/1/08	NATTS			
	PAH	TSP	1/6	Background	Neighborhood	11/1/08	NATTS			
	Hexavalent Chromium	TSP LO VOL	1/6	Background	Neighborhood	11/1/08	NATTS			
	NOy	Chemiluminescence	Continuous	Population	Neighborhood	5/1/05	NCORE			
	NO2 Trace Meteorological Instrumentation	Chemiluminescence Wind Speed, Humidity Temp., Wind direction Barometric Pressure	Continuous	Population	Neighborhood	5/1/05	Ncore			
			Continuous	Population	Neighborhood	7/1/10	NCORE			
			Automated GC	Background	Regional	5/1/13	PAMS			
TO-12			Background	Regional	5/1/13	PAMS				
51-087-0015 (72-N)	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS	Henrico Co. - Piedmont DEQ	-77.5675	37.6703
51-101-0003 (82-C)	PM-10	SSI HI VOL	1/6	Population	Neighborhood	1/11/90	SLAMS	West Point - Elementary School	-76.7953	37.5594
51-670-0010 (154-M)	PM-10 Metals VOCs Carbonyl	PM10 SSI HI VOL TSP/ICPMS TO-15 TO-11	1/6	Population	Neighborhood	11/1/08	SLAMS	Hopewell - Carter G. Woodson Middle School	-77.2901	37.2906
			1/6	Population	Neighborhood	11/1/08	Urban Toxics			
			1/6	Population	Neighborhood	11/1/08	Urban Toxics			
			1/6	Population	Neighborhood	11/1/08	Urban Toxics			
51-760-0025 (158-X)	NO2 CO	Chemiluminescence Gas Filter Correlation	Continuous	Near Road	Microscale	10/1/13	SLAMS	City of Richmond - Joseph Bryan Park	77.4692	37.5911
			Continuous	Near Road	Microscale	10/1/13	SLAMS			

There are 4 collocated monitor in AQCR V. At Station 72-M, 510870014 - collocated PM2.5 FRM, collocated VOC and Station 154-M collocated Hi Vol PM10 and VOC sampler

VA DEQ, AQCR VI HAMPTON ROADS, 2014

SITE I.D.	POLLUTANT MEASURED	METHOD OR INSTRUMENT	SAMPLING INTERVAL	MONITORING OBJECTIVE	SCALE	BEGINNING DATE	MONITOR TYPE	LOCATION	LONGITUDE	LATITUDE
51-650-0008 (179-K)	O3	UV Absorption	Continuous	Population	Neighborhood	7/1/10	SLAMS	Hampton City - NASA Langley CAPABLE Site	-76.3869	37.1036
	SO2	Fluorescence	Continuous	Population	Neighborhood	7/1/10	SLAMS			
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	7/1/10	SLAMS			
	CO	Gas Filter Corr.	Continuous	Population	Neighborhood	7/1/10	SLAMS			
	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	7/1/10	SLAMS			
	PM2.5	TEOM	Continuous	Population	Neighborhood	7/1/10	SPM			
	PM10	SSI HI VOL	1/6	Population	Neighborhood	7/1/10	SLAMS			
51-710-0024 (181-A1)	SO2	Pulsed Fluorescence	Continuous	Population	Neighborhood	1/7/10	SLAMS	Norfolk City - NOAA Storage Facility	-76.3017	36.8578
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	1/7/10	SLAMS			
	CO	Gas Filter Corr.	Continuous	Population	Neighborhood	12/22/09	SLAMS			
	PM10	SSI HI VOL	1/6	Population	Neighborhood	6/21/97	SLAMS			
	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS			
51-800-0004 (183-E)	O3	UV Absorption	Continuous	Population	Neighborhood	4/1/87	SLAMS	Suffolk City - Tidewater Community College	-76.4386	36.9033
51-800-0005 (183-F)	O3	UV Absorption	Continuous	Population	Neighborhood	4/1/91	SLAMS	Suffolk City - Tidewater Research Station, Holland	-76.7314	36.6675
51-810-0008 (184-J)	PM2.5 FRM	Sequential	Daily	Population	Neighborhood	1/1/99	SLAMS	VA Beach City - VA Beach DEQ Office	-76.1814	36.8411
	VOC	TO-15	1/6	Background	Neighborhood	7/1/05	Urban Toxics			
	Carbonyl	TO-11A	1/6	Background	Neighborhood	7/1/05	Urban Toxics			
	Metals	TSP	1/6	Background	Neighborhood	8/2/05	Urban Toxics			

There are two collocated monitors in AQCR VI. Collocated PM10 and PM2.5 FRM are both at 181-A1, 51710024, the NOAA Storage Facility in Norfolk.

VA DEQ, AQCR VII NORTHERN VIRGINIA, 2014

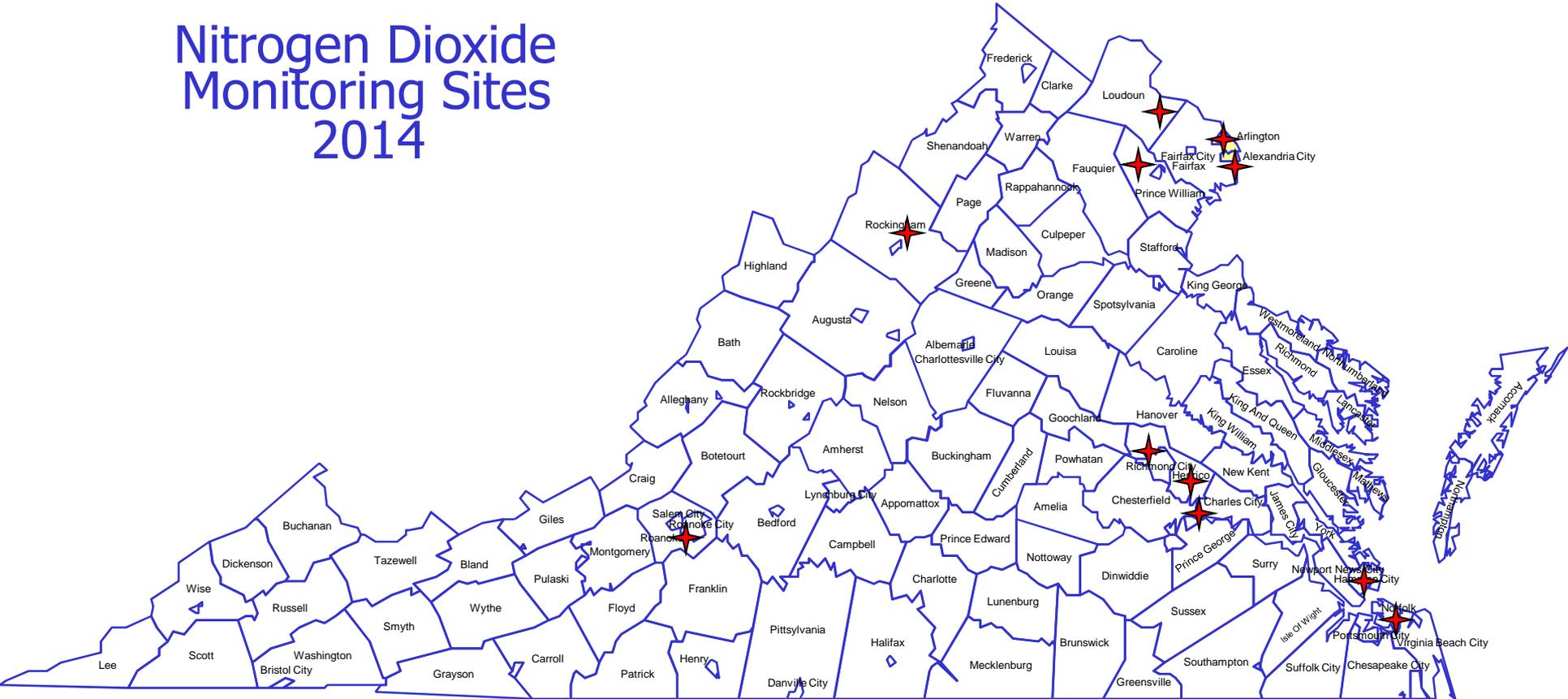
SITE I.D.	POLLUTANT MEASURED	METHOD OR INSTRUMENT	SAMPLING INTERVAL	MONITORING OBJECTIVE	SCALE	BEGINNING DATE	MONITOR TYPE	LOCATION	LONGITUDE	LATITUDE
51-013-0020 (47-T)	O3	UV Absorption	Continuous	Population	Neighborhood	8/1/79	SLAMS	Arlington -	-77.0592	38.8575
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	8/1/79	SLAMS	Aurora Hills		
	CO	Gas Filter Correlation	Continuous	Population	Neighborhood	4/1/81	SLAMS	Visitors Center		
	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS			
51-059-0030 (46-B9)	O3	UV Absorption	Continuous	Population	Neighborhood	7/1/98	SLAMS	Fairfax -	-77.1056	38.7728
	SO2	Pulsed Fluorescence	Continuous	Population	Neighborhood	8/29/13	SLAMS	Lee District park		
	PM2.5 FRM	Sequential	Daily	Population	Neighborhood	1/1/99	SLAMS			
	PM2.5	TEOM	Continuous	Population	Neighborhood	7/1/10	SPM			
	VOC	TO-15	1/6	Population	Neighborhood	6/1/02	Urban Toxics			
	Carbonyl Metals	TO-11A TSP	1/6 1/6	Population Population	Neighborhood Neighborhood	6/1/02 6/1/02	Urban Toxics Urban Toxics			
51-107-1005 (38-I)	O3	UV Absorption	Continuous	Population	Neighborhood	4/4/98	SLAMS	Loudoun Co. -	-77.4900	39.0244
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	4/4/98	SLAMS	Broad Run H.S.		
	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS			
51-153-0009 (45-L)	O3	UV Absorption	Continuous	Population	Urban	4/1/91	SLAMS	Prince Wm. Co. -	-77.6356	38.8553
	NO2	Chemiluminescence	Continuous	Population	Urban	4/1/94	SLAMS	Long Park		
51-510-0021 (L-126-I)	NO2	Chemiluminescence	Continuous	Population	Neighborhood	8/29/13	SPM	Alexandria,	-77.0864	38.8065
	CO	Gas Filter Correlation	Continuous	Population	Neighborhood	8/29/13	SPM	3200 Colvin St.		
51-510-0020 (L-126-H)	PM10	SSI HI VOL	1/3	Population	Neighborhood	6/4/06	SLAMS	Alexandria - Tucker Elem. Sch.	-77.1268	38.8050

There are 2 collocated monitors in AQCR VII. A collocated PM2.5 FRM is located at Station 47-T, 510130020, Aurora Hills Visitor Center, Arlington

III. Virginia Air Quality Monitoring Network Maps

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

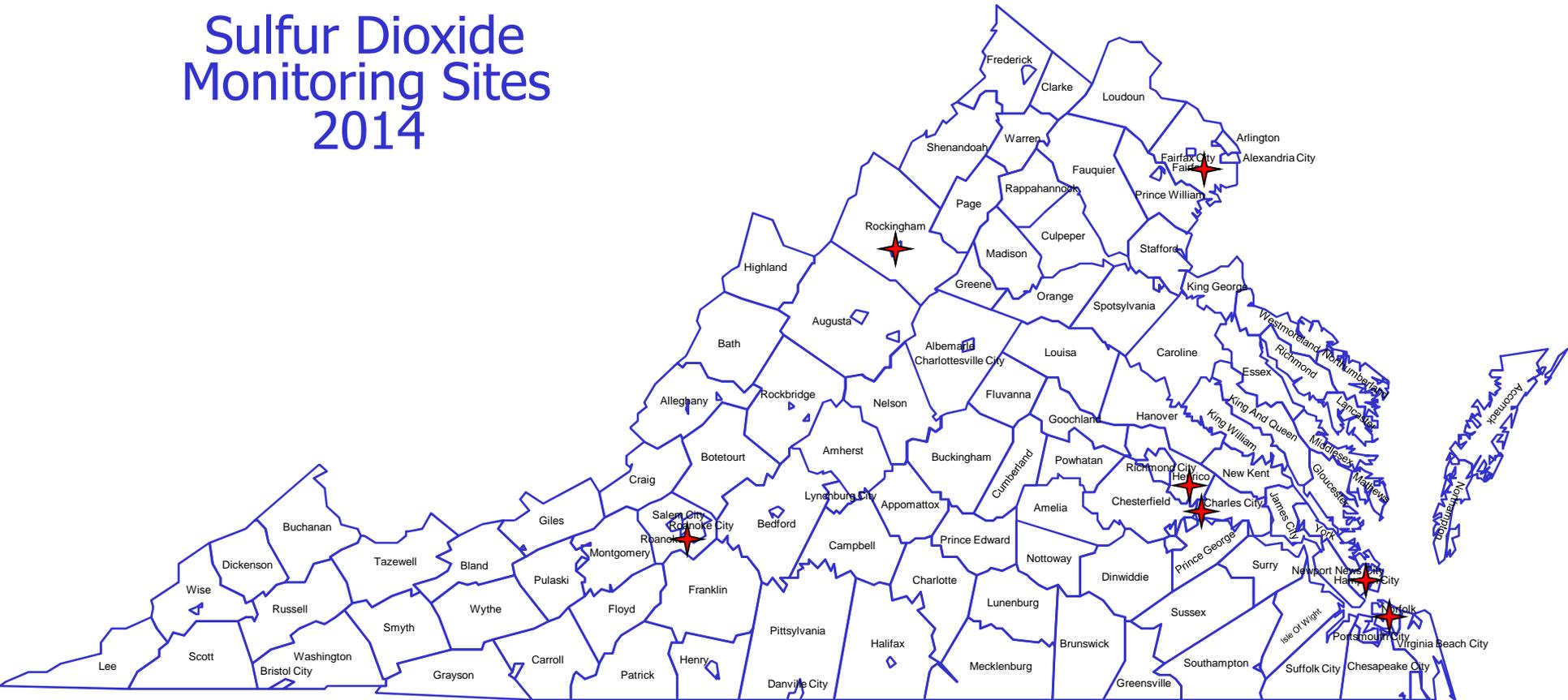
Nitrogen Dioxide Monitoring Sites 2014



 VA Department of Environmental Quality

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Sulfur Dioxide Monitoring Sites 2014

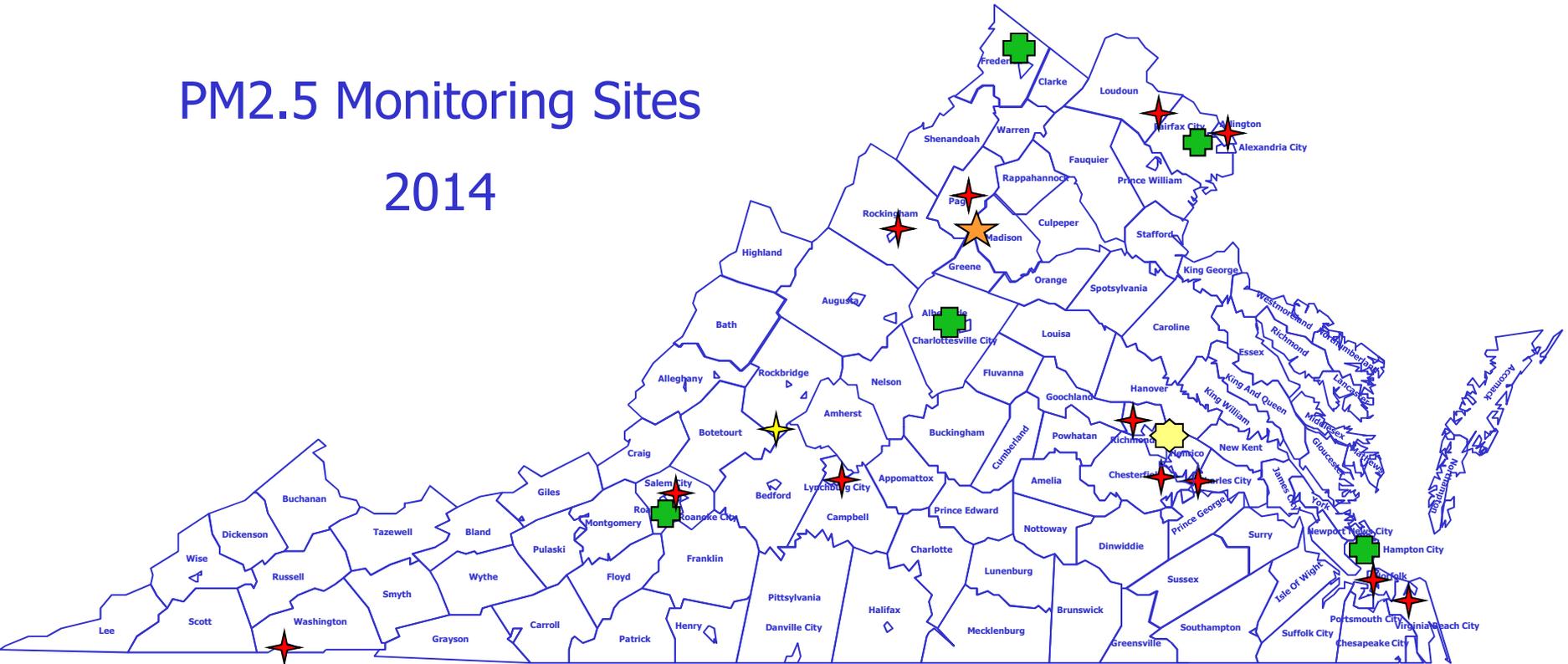


VA Department of Environmental Quality

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

PM2.5 Monitoring Sites

2014



 FRM Mass Sampler

 FRM Mass and TEOM Samplers

 IMPROVE sampler

 FRM Mass, Speciation, TEOM Sampler, Carbon

 TEOM & IMPROVE sampler, Big Meadows, NPS

