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COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

Fax (804) 698-4019 TDD (804) 698-4021

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

June 14, 2013

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

RECEIVED

JUN 25 2013

Division Director (JAP00)

Subject: Virginia Annual Air Quality Monitoring 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 this fiscal year.

A draft of the Annual Network Review was posted for public inspection from April 29, 2013, to May 31, 2013, on the DEQ "Air Monitoring Public Notices" web page. No comments were received from the public. Please contact me if you have any questions regarding this transmittal.

Sincerely,

David K. Paylor

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

Attachments

VA NETWORK CHANGES 2013

**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY MONITORING NETWORK CHANGES**

INSTRUMENTATION CHANGES SINCE LAST REVIEW

JULY 1, 2012 to JUNE 30, 2013

51-510-0009, L-126-C Alexandria Health Department, City of Alexandria, AQCR7

On August 21, 2012, the Office of Air Quality Monitoring shutdown the existing monitor site located at the Alexandria Health Department Building on North St. Asaph Street in Alexandria City. The site was shut down due to the eminent closure of the building in which the monitoring equipment was located. The location has been in the Virginia ambient air monitoring network since 1980. Day to day operation of this site was performed by the City of Alexandria Department of Public Health employees. The continuous monitors, NO₂, SO₂, CO and Ozone, were relocated to 3200 Colvin Street in the City of Alexandria. The entry below describes this location. The PM₁₀ monitor was not relocated to the new location due to the amount and the proximity of local industrial and commercial activity.

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

As described above, the Old St. Asaph Street site (51-510-0009) has been relocated to 3200 Colvin Street. This site now monitors for NO₂, SO₂ and CO. The ozone (O₃) monitor 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 potential interferences.



- X. Monitoring site probe location**
- A. Railroad Switching Yard – 250 yards from monitor probe line intakes**
- B. Alexandria City Bus (DASH) 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/School Bus parking - 325 yards**
- H. I-95/I-495 Capital Beltway – 520 yards**

Due to the proximity to the asphalt operation and the bus maintenance facility along with other siting difficulties the PM10 monitor that was operating at the Old Saint Asaph St. site has been deactivated. In its place DEQ has reassigned the Tucker Elementary School PM10 site (AQS 51-510-0020) from a Special Purpose Monitor (SPM) to a SLAMS monitor. The original SPM designation was made because the monitor was required through a local requirement directed at a local business. Historical review of the data from the Tucker Elementary School monitor indicates that the results are representative and consistent with the results from the St Asaph street site. Data from the new site began August 24, 2012.

51-047-0002, 42-B, Farmington Elementary School, Culpeper, Culpeper Co, AQCR7

This site housed a PM10 sampler that was located in a rural area. This monitor was shutdown effective December 31, 2012. The last sampling date was December 29, 2012. The table below indicates the highest and second highest maximum 24 hour concentrations over the last 3 calendar years. Data below is from DEQ's Annual Air Monitoring Report and is based on certified data gathered currently available in AQS.

2009-2011 PM ₁₀ 24-Hour Average Concentrations (units in µg/m ³)							
Site	2009		2010		2011		>150 µg/m ³
	1 st Max	2 nd Max	1 st Max	2 nd Max	1 st Max	2 nd Max	
(42-B) Culpeper Co.	27	26	46	30	32	26	0

51-187-0004, 30-E, Warren Co. Memorial Hospital, Front Royal, Warren Co., AQCR2

This site housed a PM10 sampler that was located in a rural area. This monitor was shutdown effective December 31, 2012. The last sampling date was December 29, 2012. The table below indicates the highest and second highest maximum 24 hour concentrations over the last 3 calendar years. Data below is from DEQ's Annual Air Monitoring Report and is based on certified data gathered currently available in AQS.

2009-2011 PM ₁₀ 24-Hour Average Concentrations (units in µg/m ³)							
Site	2009		2010		2011		>150 µg/m ³
	1 st Max	2 nd Max	1 st Max	2 nd Max	1 st Max	2 nd Max	
(30-E) Warren Co.	31	24	42	28	31	31	0

51-760-0024, 158-W, Science Museum of Virginia (SMV), Broad Street, Richmond City, AQCR5

The monitoring site located at the Science Museum site in Central Richmond City was shutdown effective December 31, 2012. The reason for this shutdown was due to the complete renovation of the entire area behind the Science Museum to make room for a new public gathering facility associated with the Science Museum and for the New Washington Redskins training facility. This site housed a continuous Carbon Monoxide (CO) monitor, Sulfur Dioxide (SO₂) monitor and a Nitrogen Dioxide (NO₂) monitor. Data collection for these analyzers ended at midnight, December 31, 2012.

51-770-0015, 109-M, Round Hill Montessori Elementary School, Roanoke City, AQCR2

This site was shut down on March 8, 2013 due to school construction. Review of the proposed plans indicated that there will be no room for replacing the site on the Round Hill property based on siting criteria in Subpart 58 Appendix E. The power to the shelter was disconnected on March 8, 2013. The PM_{2.5} samplers (2025 and TEOM) and support equipment was removed on March 13, 2013 and brought back to the shop at AQM for refitting and repair. The CO monitor was placed at the Vinton Shelter in Roanoke County (AQS 51-161-1004).

The PM_{2.5} and the TEOM monitors will be relocated to the Vinton shelter as well. Prior to placing the monitors at the Vinton shelter the site will have to have some trees cut and the fence line will have to be expanded to accommodate the PM_{2.5}FRM monitor. Statistical analysis from the Office of Risk Assessment has indicated that the Salem PM_{2.5} monitor data (AQS 51-775-0011)

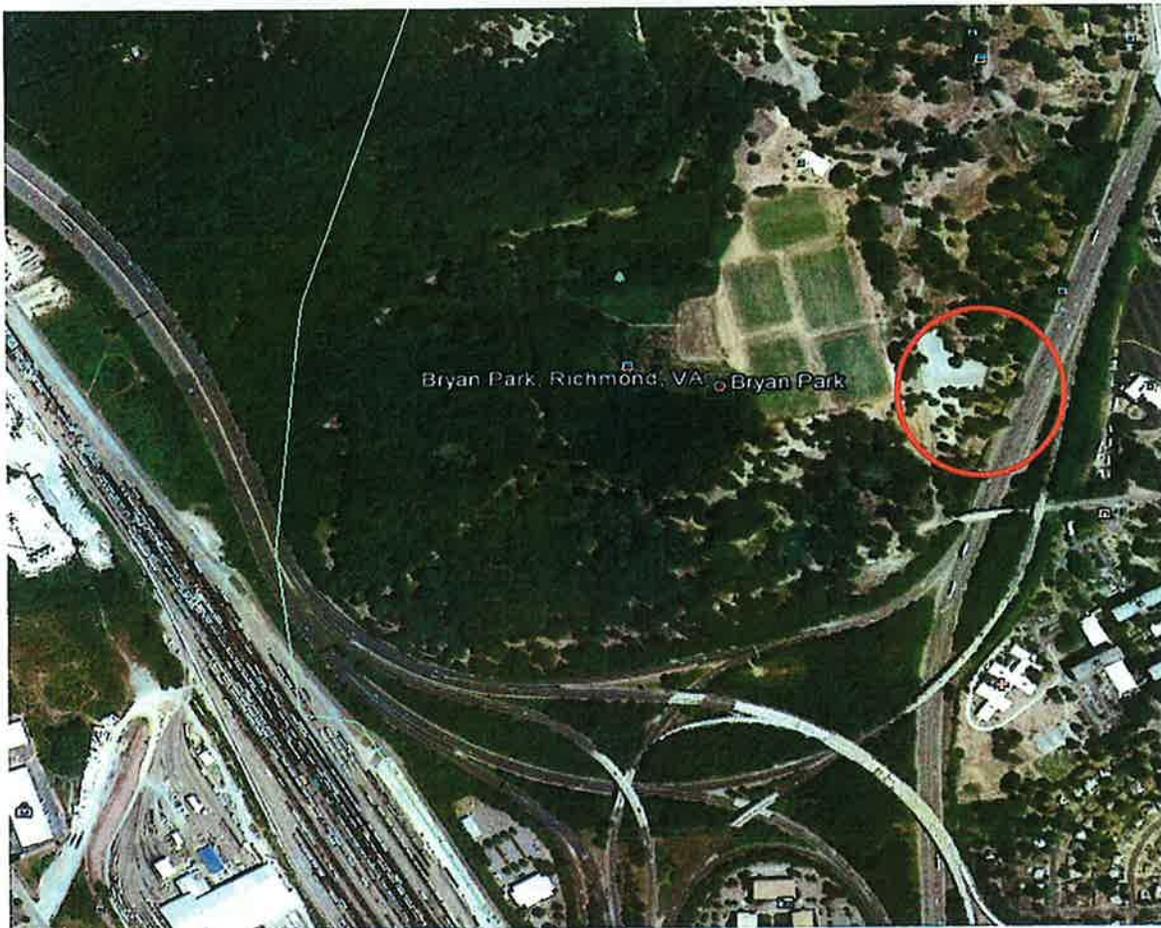
represents a statistically similar data set so the Salem High School FRM (AQS 51-775-0011) will be used as indicative of the PM2.5 results in the Roanoke area until the Vinton site is properly outfitted.

51-113-0003, 35-A, Big Meadows SNP, Madison Co. AQCR7

The TEOM continuous particulate monitor began failing the Data Quality Objectives on December 25, 2012. A flow check was performed and the monitor failed the QA checks. Evaluation of the monitor indicated that it had an internal hardware failure. Parts have been ordered and the monitor was shutdown and will be restarted upon installation of the new parts. A review of the data resulted in invalidating the TEOM data back to July 2012.

51-760-XXXX Richmond Near Road Site, Bryan Park Interchange (N 37° 35'26.9", W 77° 28' 8.9")

All local approvals have been received for the Richmond Area Phase I near road monitoring site. The site footprint has been staked out in the park and the electrical contractor has provided the electrical specifications and a Purchase Order has been issued. The shelter has been purchased and is currently at the AQM office awaiting the completion of the electrical installation. Projected Date to begin data collection is June 12, 2013. The approved site is shown on the map below.



51-059-XXXX Hampton Roads Near Road Site, I-64/I-264 Interchange (N 36° 51'11", 76°11'42")

The Norfolk Planning Department has waived planning committee approval for the Near Road Monitoring Site application and has forwarded the request to the city manager's office. The shelter for this site is being stored at a local DOT residency until the leasing agreement approval is signed. Projected date to have the shelter on site is June 30, 2013. Proposed site is shown on the map below.



Virginia Continuous Air Monitoring Sites Data Acquisition System

All Monitoring sites that contain continuous analyzers have been incorporated onto the Virginia DEQ Air Data Acquisition System. The communications between all sites have been upgraded from dial up modems to internet communications based router/modems. All sites have been upgraded to in-line pressure transducers on the gas cylinder supplies for the zero/span/precision checks. The Hanover Site (AQS 51-085-0003) will be upgraded to automated quality hardware and will be enabled with remote QAQC procedures by July 1, 2013.

ANTICIPATED INSTRUMENTATION CHANGES

JULY 1, 2013 through JUNE 30, 2014

51-087-0014, 72-M MathScience Innovation Center, Henrico County; AQCR5 – PAMS Auto GC

The MSIC monitoring site is currently designated the NCore monitoring site for the Commonwealth of Virginia. In anticipation of the PAMS re-engineering effort AQM will relocate the PAMS Automated Gas Chromatograph from the currently designated PAMS monitoring site at our Corbin site in Caroline County (AQS 51-033-0001) to the NCore site at the MathScience center. The MathScience Center has an existing NOy monitor, NOx monitor, meteorological equipment and an ozone monitor so that the additional required monitoring for the PAMS program currently is in place. The Auto GC will be in place in time for the beginning of the PAMS season i.e. June 1, 2012.

51-033-0001, 48-A, USGS Geomagnetic Center, Corbin, Caroline County; AQCR7- NOx and NOy

The Auto GC that historically been located in the Corbin monitoring site, as described above, will be started up at the MathScience Innovation Center. The NOy monitor and the NOx

monitor that usually are started up with the PAMS program will not be started up and will remain as inventory equipment for use as needed at other stations.

Near Road Monitoring Sites

51-760-XXXX Richmond Near Road Site, Bryan Park Interchange (N 37° 35'26.9", W 77° 28' 8.9") - Carbon Monoxide

The carbon monoxide monitor formerly housed at the Science Museum of Virginia Site will be relocated to the near road monitoring site at Bryan Park in Richmond City. This will occur after the NO2 monitor at the site has been established. This addition will likely occur late Summer 2013.

51-059-XXXX Hampton Roads Near Road Site, I-64/I-264 Interchange (N 36° 51'11", 76°11'42") Carbon Monoxide

The Hampton Roads site is scheduled to be in place and operational by August 30, 2013. This assumes that the appropriate approvals for the site have been procured by June 1, 2013. Once the site is in place and demonstrated consistent operation, the CO monitor from the NOAA facility (AQS 51-170-0024) will likely be relocated to the Near Road Site. This is expected to occur prior to November 1, 2013.

Virginia Continuous Air Monitoring Sites Data Acquisition System

AQM will implement phase 2 and part of phase 3 of the Data Acquisition System Implementation schedule. This involves a hardware upgrade at both the Science Museum of Virginia site (51-760-0024) in Richmond City and at the Hanover County Site (AQS 51-085-0003). This hardware upgrade will facilitate the initiation of an automated Quality Assurance program that will allow regional operators and AQM technicians to perform zero/span/precision and calibration procedures from remote locations. Once these 2 sites have been tested and validated, hardware upgrades will be implemented at all of the ozone-only sites as follows:

Station No.	AQS Number	Station Location	Station No.	AQS Number	Station Location
71-H	51-041-0004	Chesterfield Co. – Beach Road VDOT	183-E	51-800-0004	Tidewater Community College, Suffolk
29-D	51-139-0004	Luray Caverns Airport, Luray, Page Co.	183-F	51-800-0005	Tidewater Research Station, Holland, Suffolk
21-C	51-163-0003	Natural Bridge Station, Rockbridge County	48-A	51-033-0001	U.S.G.S. Geomagnetic Center, Corbin Caroline County
16-B	51-197-0002	Rural Retreat, Wythe Co.	37-B	51-061-0002	Phelps Wildlife Area, Fauquier Co.

In addition to the completion of the ozone-only sites, the following multi-pollutant sites should be upgraded with the hardware to perform the remote Quality Assurance procedures by June 30, 2013:

Station No.	AQS Number	Station Location	Station No.	AQS Number	Station Location
72-M	51-087-0014	Henrico Co. – MathScience Innovation Center	28-J	51-069-0010	Rest, Frederick County
75-B	51-036-0002	Charles City Co. – Rt. 608, Shirley Plantation	33-A	51-003-0001	Albemarle High School, Albemarle County
26-F	51-165-0003	Rockingham VDOT, Rockingham County	19-A6	51-161-1004	Herman L. Horn Elementary School, Vinton

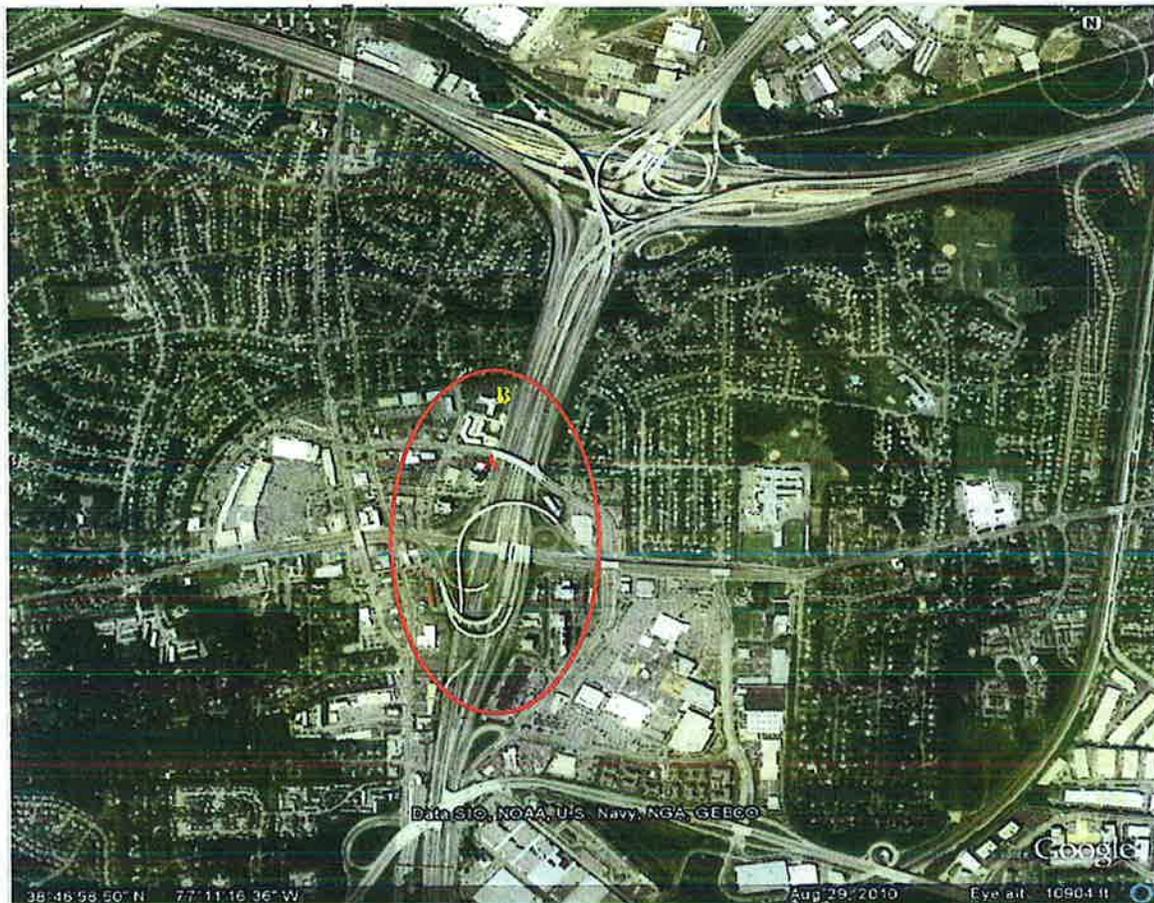
The Air Quality Monitoring Web page will be updated to indicate those stations that are included in the remote QA program.

ANTICIPATED SITE CHANGES
JULY 1, 2013 through JUNE 30, 2014

Near Road Monitoring Sites

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

In addition to the Richmond Area and Hampton Roads area Near Road Monitoring sites, the Northern Virginia area is 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 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.



Two sites have been selected and evaluated for this area so far:

site A (N 38° 46' 54", W 77° 10' 50.23") - was determined to be too close to the adjoining overpass which is deemed an obstruction based on the Technical Assistance Document.

Site B (N 38° 47' 01", W 77° 10' 48.17") – was abandoned when negotiations broke down with the private landowner of the property.

Additional sites have been selected but not yet analyzed. Once the Northern Virginia Near Road site has been installed and has demonstrated consistent operation, the CO monitor located at the

Aurora Hills Visitor Center in Arlington Co. (AQ5 51-013-0020) will be moved to this site per the requirements of the August 2011 revised requirements for the Carbon Monoxide air monitoring network. In addition, per the requirements of the Dec 2012 PM2.5 revised NAAQS standards the site will be evaluated for installation of a PM2.5 monitor. The regulatory deadline of the PM2.5 installation is January 1, 2015.

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

Airport officials indicate that DEQ will have to move this monitoring site due to FAA regulations. Process of identifying a new site has just begun. AQM has met with the Page County School Board about possible sites on School property.

SPECIAL STUDIES ACTIVITIES SINCE LAST REVIEW

JULY 1, 2012 to JUNE 30, 2013

VA DEQ Office of Air Quality Monitoring received a grant from EPA to study the Methyl Bromide fumigation operations in Suffolk City (Hampton Roads, AQCR6). The Virginia Department of Health has provided extensive information on recommended data gathering and evaluation and will be assisting with the Risk Assessment report that will be generated from the data gathered during this study. VA DEQ selected two facilities based on preliminary studies done in winter and summer of 2010. At the time both operations were fumigating at close to their maximum rate. When the IR camera studies were begun in fall of 2012 the facilities were operating at a significantly reduced capacity due to market conditions in their primary targeted market, China. The IR camera results were inconclusive because the dilution ratio of air to Methyl Bromide was elevated such that the concentration of Methyl Bromide was below the detection capability of the camera.

The actual sampling runs begin in spring of 2013. The first set of samples gathered at each site will be to determine the baseline or background level of Methyl Bromide. Several sets of samples will be taken at both facilities between April and June. The bulk of these sampling runs will be performed when the facilities are not aerating (venting) the Methyl Bromide. These sampling runs will include grab (instantaneous) samples to determine maximum concentration sites, hourly samples to compare versus the short term ambient concentration standard and 8 hour samples to gather data to assess environmental exposure. The data from these samples will be sent to the Virginia Department of Health so that they can begin their health assessment.

ANTICIPATED SPECIAL STUDIES ACTIVITIES

JULY 1, 2013 to JUNE 30, 2014

Once the initial background studies are complete (early June 2013) sampling will begin on ambient levels during the aeration phases of the fumigation process. Data will be collected on hourly and 8 hour time scales. These sampling runs will be supported by the placement of a Photo-ionization Detector network to get a better spatial evaluation of the dispersion of the Methyl Bromide during the aeration process. The eight hour samples will be collected to determine overall exposure during the aerations and will be placed in areas where exposure to the general public is most likely. The aeration studies are projected to be completed in late fall of 2013. The data generated from this study will be used to develop two documents: 1) A data quality report to demonstrate that the study has met the DQO's of the project and 2) A risk assessment report generated by the DEQ Office of Risk Programs. These documents will be used by the Virginia Department of Health to develop the Risk Assessment report.

VA SITE LISTING AQCR I-VII 2013

VA DEQ, AQCR I SOUTHWEST VIRGINIA, 2013

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
51-027-0006 (4-G)	TSP - Lead	Tisch HI VOL TSP Sampler	1/6	Source-oriented	Neighborhood	11/1/2010	SLAMS	Buchanan Co. - VP-1 Upper Stock Pile area	-82.0182	37.2475

There are no collocated monitors in AQCR I

VA DEQ, AQCR II VALLEY OF VIRGINIA, 2013

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 PM2.5 FRM PM2.5	UV Absorption Sequential TEOM	Continuous 1/3 Continuous	Population Population Background	Urban Urban Urban	4/1/91 1/1/08 1/1/08	SLAMS SLAMS SPM	Rest, Frederick County - Lester Buildings	-78.0814	39.2828
51-113-0003 (N-35-A)	O3 PM2.5 PM2.5	UV Absorption IMPROVE TEOM	Continuous 1/3 Continuous	Background Background Background	Regional Regional Regional	5/04	Natl Park IMPROVE Natl Park	Madison County - Shenandoah Nat'l Park Big Meadows	-78.4355	38.5227
51-139-0004 (29-D)	O3 PM2.5 FRM	UV Absorption Sequential	Continuous 1/3	Population Background	Urban Regional	7/21/99 10/00	SLAMS SLAMS	Page County - Luray Caverns Airport	-78.5047	38.6633
51-161-1004 (19-A6)	NO2 O3 SO2 CO PM2.5 FRM PM2.5	Chemiluminescence UV Absorption Fluorescence Gas Filler Corr. Sequential TEOM	Continuous Continuous Continuous Continuous Daily Continuous	Population Population Population Population Population Background	Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood	1/1/81 8/81 1/29/87 3/14/13 6/1/13 (proj) 6/1/13 (proj)	SLAMS SLAMS SLAMS SLAMS SLAMS SPM	Vinton - Roanoke Co. Hom Elem. School	-79.8842	37.2856
51-163-0003 (21-C)	O3 PM2.5	UV Absorption IMPROVE	Continuous Continuous	Background Background	Regional Regional	4/8/99	SLAMS IMPROVE	Rockbridge Co. - Natural Bridge Station	-79.5131	37.6261
51-165-0003 (26-F)	SO2 NO2 PM2.5 FRM O3	Fluorescence Chemiluminescence Sequential UV Absorption	Continuous Continuous 1/3 Continuous	Population Population Population Population	Neighborhood Neighborhood Neighborhood Neighborhood	9/22/97 4/04 1/1/07 4/1/07	SLAMS SLAMS SLAMS SLAMS	Rockingham Co. - VDOT	-78.8195	38.4775
51-770-0011 (109-H)	PM-10 Lead	SSI HI VOL TSP HI VOL	1/6 1/6	Source Source	Middle Middle	5/9/88 10/22/09	SLAMS NAMS	Roanoke - Cherry Hill Subdivision	-79.9994	37.2758
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, 2013

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	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, 2013

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	UV Absorption	Continuous	Background	Regional	4/1/93	SLAMS	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, 2013

SITE ID.	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 Highest Concentration	Neighborhood	3/29/88 1/1/92	SLAMS SLAMS	Charles City Co. - Route #608 Shirley Plantation	-77.2608	37.3419
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 PM2.5 FRM PM-10 PM2.5 PM10 Metals Lead Carbonyl VOCs PAH	UV Absorption Sequential SSI HI VOL TEOM Specification Sequential PM-10 LO VOL TSP/ICPMS TSP/ICPMS TO-11A TO-15 TSP	Continuous Daily 1/6 Continuous 1/3 Mini-Trends 1/3 1/6 1/6 1/6 1/6 1/6	Population Population Population Population Population Background Background Background Background	Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood	6/12/81 1/1/89 1/1/08 7/18/00 1/1/04 10/8/09 11/1/08 11/1/08 11/1/08 11/1/08 11/1/08	SLAMS SLAMS SLAMS SPM SPM NCore NCore NATTS NATTS NATTS NATTS	Henrico Co. - MathScience Center	-77.4003	37.5583
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	1/1/190	SLAMS	West Point - Elementary School	-76.7953	37.5594
51-670-0010 (154-M)	PM-10 Metals VOCs Carbonyl PAH	PM10 SSI HI VOL PM10 SSI HI VOL TSP/ICPMS TO-15 TO-11 TSP	1/6 1/6 1/6 1/6 1/6	Population Population Population Population Population	Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood	1/1/1/08 1/1/1/08 1/1/1/08 1/1/1/08 1/1/1/08	SLAMS SLAMS SLAMS Urban Toxics Urban Toxics SPM	Hopewell - Hopewell Toxics Study, Carter G. Woodson Middle School	-77.2901	37.2906

There are 2 collocated monitor in AQCR V. At Station 72-M, 510870014 - collocated PM2.5 FRM, and Station 154-M collocated HI Vol PM10

VA DEQ, AQCR VI HAMPTON ROADS, 2013

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)	SO2	Fluorescence	Continuous	Population	Neighborhood	7/1/10	SLAMS	Hampton	-76.3869	37.1036
	O3	UV Absorption	Continuous	Population	Neighborhood	7/1/10	SLAMS	NASA Langley		
	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	7/1/10	SLAMS	CAPABLE Site		
	PM2.5 CO	TEOM Gas Filter Corr.	Continuous	Population	Neighborhood	7/1/10	SPM			
51-710-0024 (181-A1)	PM10	SSI HI VOL	1/6	Population	Neighborhood	6/2/97	SLAMS	Norfolk -	-76.3017	36.8578
	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS	NOAA Storage		
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	1/7/10	SLAMS	Facility		
	CO	Gas Filter Corr.	Continuous	Population	Neighborhood	12/22/09	SLAMS			
51-800-0004 (183-E)	SO2	Pulsed Fluorescence	Continuous	Population	Neighborhood	1/7/10	SLAMS		-76.4386	36.9033
	O3	UV Absorption	Continuous	Population	Neighborhood	4/1/87	SLAMS	Suffolk - Tidewater Community College		
51-800-0005 (183-F)	O3	UV Absorption	Continuous	Population	Neighborhood	4/1/91	SLAMS	Suffolk - 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 -	-76.1814	36.8411
	VOC	TO-15	1/6	Background	Neighborhood	7/1/05	Urban Toxics	VA Beach DEQ Office		
	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, 517100024, the NOAA Storage Facility in Norfolk.

VA DEQ, AQCR VII NORTHERN VIRGINIA, 2013

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
	VOC	TO-15	1/6	Population	Neighborhood	6/1/02	Urban Toxics	Lee District		
	Carbonyl	TO-11A	1/6	Population	Neighborhood	6/1/02	Urban Toxics			
	Metals	TSP	1/6	Population	Neighborhood	6/1/02	Urban Toxics			
51-107-1005 (38-I)	PM2.5 FRM	Sequential	Daily	Population	Neighborhood	1/1/99	SLAMS		-77.4900	39.0244
	O3	UV Absorption	Continuous	Population	Neighborhood	4/4/98	SLAMS	Loudoun Co. -		
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	4/4/98	SLAMS	Broad Run H.S.		
51-153-0009 (45-L)	PM2.5 FRM	Sequential	1/3	Population	Neighborhood	1/1/99	SLAMS		-77.6356	38.8553
	O3	UV Absorption	Continuous	Population	Urban	4/1/91	SLAMS	Prince Wm. Co. -		
51-510-0021 (L-126-I)	NO2	Chemiluminescence	Continuous	Population	Urban	4/1/94	SLAMS	Long Park	-77.0864	38.8065
	SO2	Pulsed Fluorescence	Continuous	Population	Neighborhood	8/29/13	SLAMS	Alexandria,		
	O3	UV Absorption	Continuous	Population	Neighborhood	8/29/13	SPM	3200 Colvin St.		
	NO2	Chemiluminescence	Continuous	Population	Neighborhood	8/29/13	SLAMS			
	CO	Gas Filter Correlation	Continuous	Population	Neighborhood	8/29/13	SLAMS			
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 3 collocated monitors in AQCR VII. A collocated PM2.5 FRM is located at Station 47-T, 510130020, Aurora Hills Visitor Center, Arlington

VA AIR MONITORING NETWORK MAPS 2013

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Regional Offices

VALLEY REGIONAL OFFICE

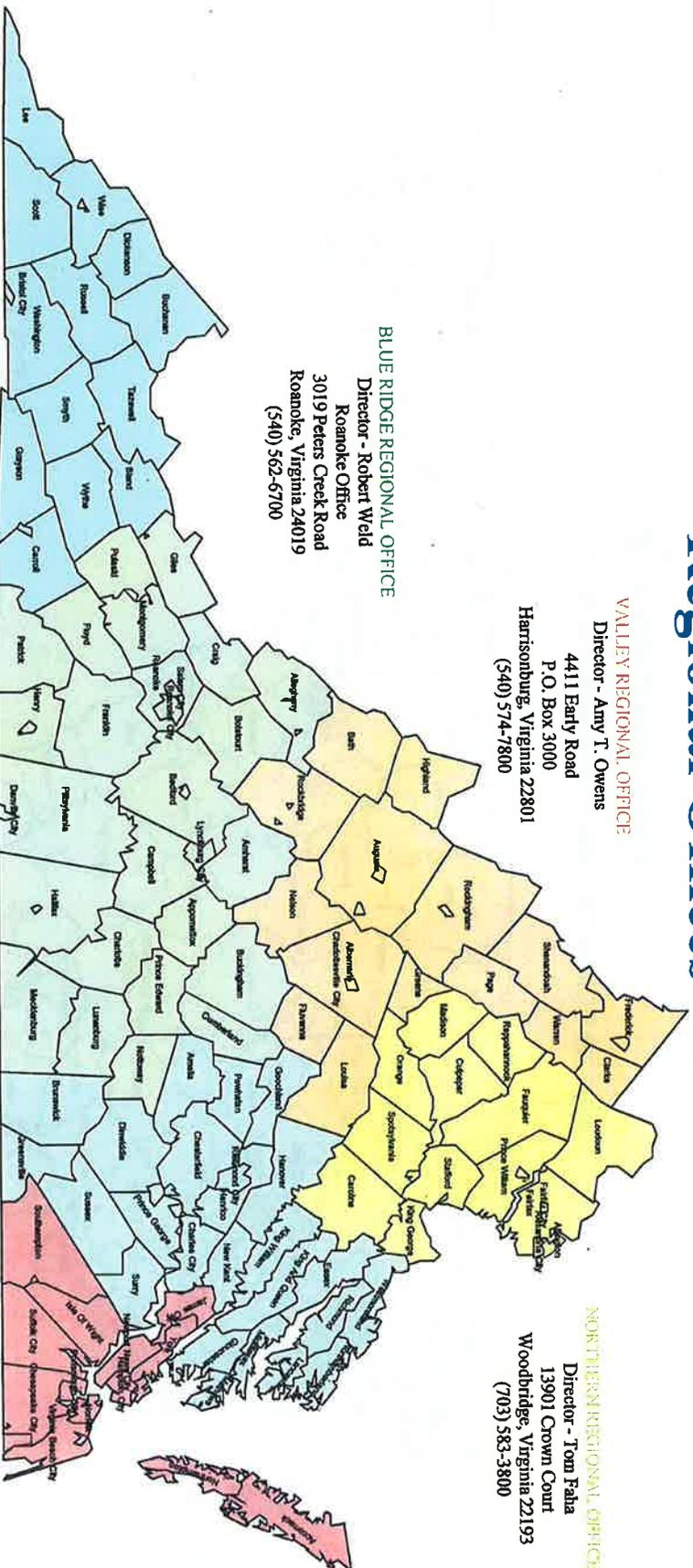
Director - Amy T. Owens
 4411 Early Road
 P.O. Box 3000
 Harrisonburg, Virginia 22801
 (540) 574-7800

NORTHERN REGIONAL OFFICE

Director - Tom Faha
 13901 Crown Court
 Woodbridge, Virginia 22193
 (703) 583-3800

BLUE RIDGE REGIONAL OFFICE

Director - Robert Wald
 Roanoke Office
 3019 Peters Creek Road
 Roanoke, Virginia 24019
 (540) 562-6700



SOUTHWEST REGIONAL OFFICE

Director - Dallas Sizemore
 355 Deadmores St.
 P.O. Box 1688
 Abingdon, Virginia 24212
 (276) 676-4800

BLUE RIDGE REGIONAL OFFICE

Director - Robert Weid
 Lynchburg Office
 7705 Timberlake Road
 Lynchburg, Virginia 24502
 (434) 582-5120

PIEDMONT REGIONAL OFFICE

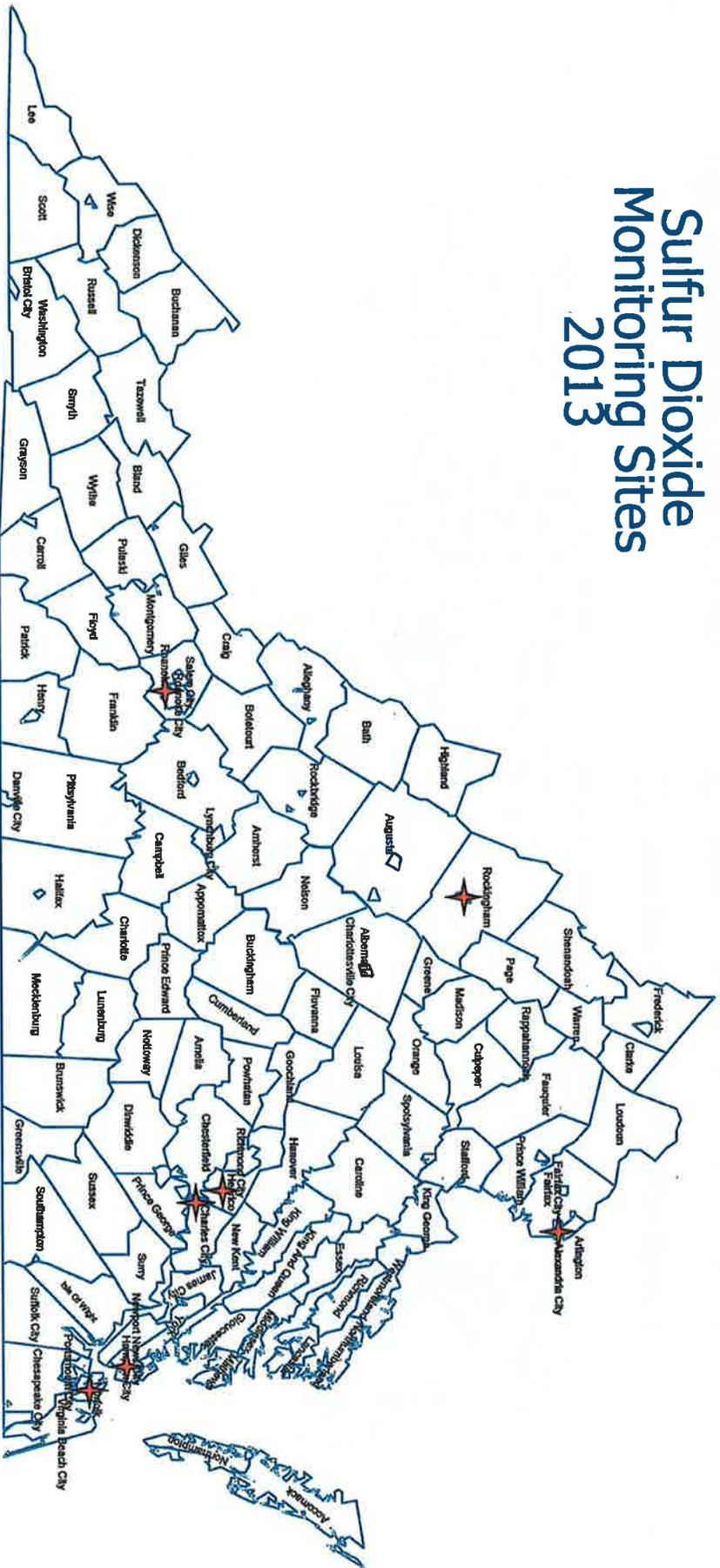
Director - Mike Murphy
 4949-A Cox Road
 Glen Allen, Virginia 23060
 (804) 527-5020

TIDEWATER REGIONAL OFFICE

Director - Maria Nold
 5636 Southern Blvd.
 Virginia Beach, Virginia 23462
 (757) 518-2000

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

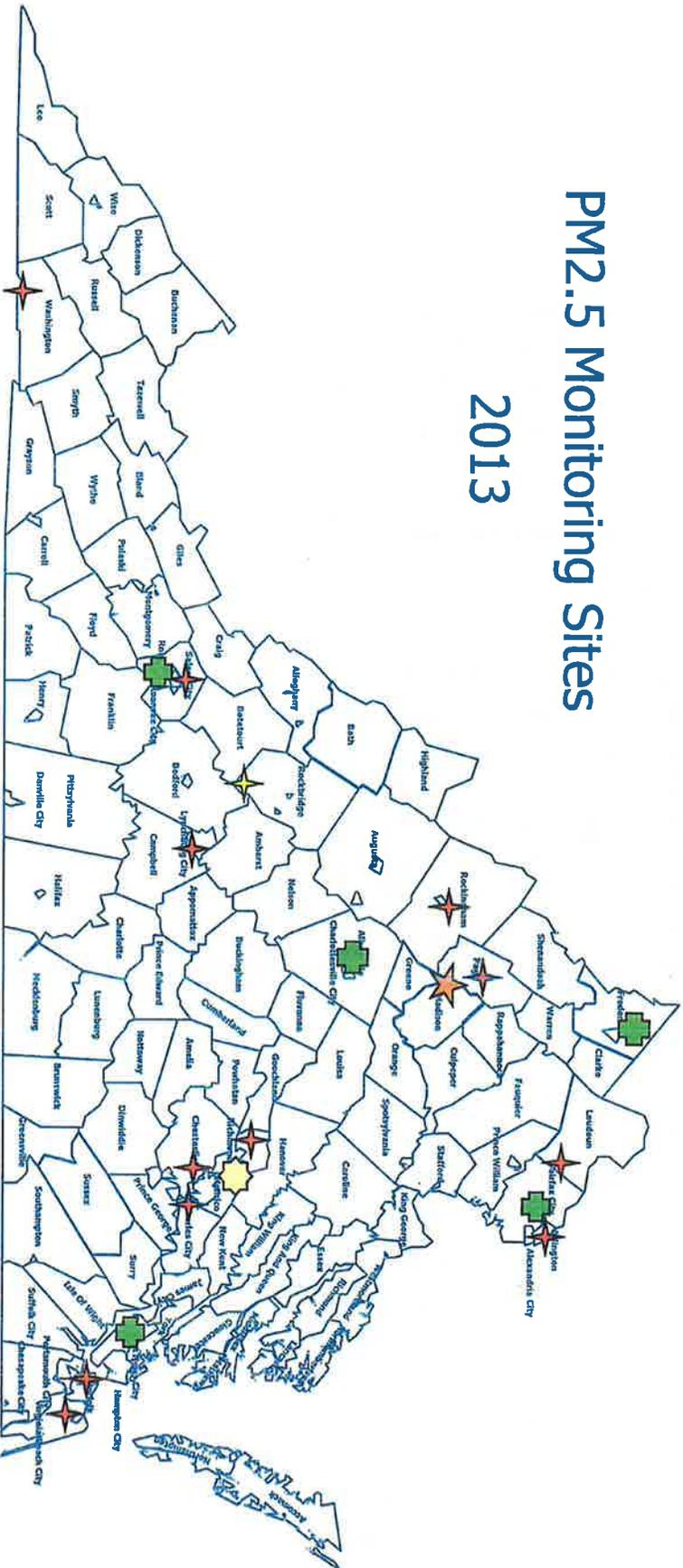
Sulfur Dioxide Monitoring Sites 2013



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

PM2.5 Monitoring Sites

2013



-  FRM Mass Sampler
-  FRM Mass and TEOM Samplers
-  IMPROVE sampler
-  FRM Mass, Speciation, TEOM Sampler
-  TEOM & IMPROVE sampler, Big Meadows, NPS

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Lead Monitoring Sites 2013

