Document Readers

SF-424
Application for Federal Assistance
Title: VADEQ Community-Scale Methyl Bromide Mon

Document Status

Document Phase:	Draft	Last Modified:	05/20/2011
Current Editor:	Mike Jones		
Delegate:	Dennis Finney		

GMS Information

Competition Close Date:			
AAShip:			
Approving Region:	HQ		
Project Officer:	Mike Jones	PO Phone:	
Awarding Region:	HQ		
Grant Coordinator:			

Solicitation Information

Opportunity ID:	EPA-OAR-OAQPS-11-05	Competition ID:	
Opportunity Title:	Community-Scale Air Toxics Ambient Monitoring	Competition Title:	
Opening Date:	03/23/2011	Closing Date:	05/23/2011
Grants.Gov Tracking Number:	GRANT10873378		
Date Received by EAPPLY:	05/20/2011		

Submission Information

Submission:	Application	Grant:	Non-Construction
Date Submitted:	05/20/2011	Time Submitted:	01:59:54 PM
Type of Application:	New		

Applicant Information

	Grants.gov	IGMS
Applicant Type:	A: State Government	
Applicant Name:	Virginia Department of Environmental Quality	
Applicant DUNS #:	8097437680000	
Organizational Unit:	Air Quality Monitoring	
Sub Org Unit:	Air Division	
EIN:	54-1661753	
Address:	629 East Main Street	
City:	Richmond	
State:	VA: Virginia	
Zip:	23219-2405	
County:		
POC Name:	Charles Turner	
POC Phone:	804 527-5178	
POC E-Mail:		
POC FAX #:		

Project Information

Federal Agency:	EPA

CFDA:	66.034
Project Title:	VADEQ - Community-Scale Methyl Bromide Monitoring Project for Suffolk, Virginia
Project Period Start:	10/01/2011 **Project Period End:** 09/30/2013

Congressional Districts

Applicant Cong Dist:	VA-001 **Project Cong Dist:** VA-004

Estimated Funding

Federal	$364,400
Applicant	$0
(For all applicants including states)	
State	$0
(For state contribution to non-state applicants)	
Local	$0
Other	$0
Program Income	$0
TOTAL	**$364,400**

Is the Application subject to review by State Executive Order 12372 Process?	Program Not Selected For Review
Available for Review:	
Is the Applicant delinquent on any Federal Debt?	No

Authorized Representative

Authorized Rep:	Valerie Thomson		
Title:	Director of Administration	**Phone:**	804 698-4157

Key Contacts

Authorized Rep:			
Title:		**Phone:**	
Address:			
City:			
State:		**Zip:**	
Fax:		**E-Mail:**	
Payee:			
Title:		**Phone:**	
Address:			
City:			
State:		**Zip:**	
Fax:		**E-Mail:**	
Administrative Contact:			
Title:		**Phone:**	
Address:			
City:			
State:		**Zip:**	
Fax:		**E-Mail:**	
Project Manager:			
Title:		**Phone:**	
Address:			
City:			
State:		**Zip:**	
Fax:		**E-Mail:**	

Budget Summary

Section A - BUDGET SUMMARY

	Estimated Unobligated Funds		New or Revised Budget		
	Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	TOTALS
TOTALS	$0	$0	$364,400	$0	$364,400

Section B - BUDGET CATEGORIES

Object Class Categories	Summary of TOTALS
a. Personnel	$20,517
b. Fringe Benefits	$7,435
c. Travel	$2,600
d. Equipment	$162,000
e. Supplies	$20,000
f. Contractual	$132,000
g. Construction	$0
h. Other	$14,000
i. Total Direct Charges	$358,552
j. Indirect Charges	$5,848
k. TOTALS	$364,400
Program Income	$0

Comments:

Application Attachments

Grants.gov Application:

Notifications History

OMB Number: 4040-0004
Expiration Date: 03/31/2012

Application for Federal Assistance SF-424

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
☐ Preapplication	☒ New	
☒ Application	☐ Continuation	* Other (Specify):
☐ Changed/Corrected Application	☐ Revision	

* 3. Date Received:	4. Applicant Identifier:
05/20/2011	

5a. Federal Entity Identifier:	5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:	7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name:	Virginia Department of Environmental Quality

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
54-1661753	8097437680000

d. Address:

* Street1:	629 East Main Street
Street2:	
* City:	Richmond
County/Parish:	
* State:	VA: Virginia
Province:	
* Country:	USA: UNITED STATES
* Zip / Postal Code:	23219-2405

e. Organizational Unit:

Department Name:	Division Name:
Air Quality Monitoring	Air Division

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:	Mr.	* First Name:	Charles
Middle Name:			
* Last Name:	Turner		
Suffix:			

Title:	Director of Air Quality Monitoring

Organizational Affiliation:	

* Telephone Number:	804 527-5178	Fax Number:	804 527-5160

* Email:	charles.turner@deq.virginia.gov

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.034

CFDA Title:

Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities Relating to the Clean Air Act

*** 12. Funding Opportunity Number:**

EPA-OAR-OAQPS-11-05

* Title:

Community-Scale Air Toxics Ambient Monitoring

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

VADEQ - Community-Scale Methyl Bromide Monitoring Project for Suffolk, Virginia

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: VA-001 b. Program/Project: VA-004

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 10/01/2011 * b. End Date: 09/30/2013

18. Estimated Funding ($):

* a. Federal	364,400.00
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	364,400.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on

☒ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☐ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Ms. * First Name: Valerie

Middle Name:

* Last Name: Thomson

Suffix:

* Title: Director of Administration

* Telephone Number: 804 698-4157 Fax Number: 804 698-4178

* Email: valerie.thomson@deq.virginia.gov

* Signature of Authorized Representative: Valerie Thomson * Date Signed: 05/20/2011

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 4040-0006
Expiration Date 07/30/2010

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Surveys,Studies, Investigations, Demonstrations and Special Purpose Activities relating to the Clean Air Act	66.034	$	$	$ 364,400.00	$	$ 364,400.00
2.						
3.						
4.						
5. Totals		$	$	$ 364,400.00	$	$ 364,400.00

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SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
	Surveys,Studies, Investigations, Demonstrations and Special Purpose Activities relating to the Clean Air Act				
a. Personnel	$ 20,517.00	$	$	$	$ 20,517.00
b. Fringe Benefits	7,435.00				7,435.00
c. Travel	2,600.00				2,600.00
d. Equipment	162,000.00				162,000.00
e. Supplies	20,000.00				20,000.00
f. Contractual	132,000.00				132,000.00
g. Construction					
h. Other	14,000.00				14,000.00
i. Total Direct Charges (sum of 6a-6h)	358,552.00				$ 358,552.00
j. Indirect Charges	5,848.00				$ 5,848.00
k. TOTALS (sum of 6i and 6j)	$ 364,400.00	$	$	$	$ 364,400.00
7. Program Income	$	$	$	$	$

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SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8.	$	$	$	$
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	$	$	$	$

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 261,659.00	$ 72,500.00	$ 105,000.00	$ 50,644.00	$ 33,515.00
14. Non-Federal	$				
15. TOTAL (sum of lines 13 and 14)	$ 261,659.00	$ 72,500.00	$ 105,000.00	$ 50,644.00	$ 33,515.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS) (b)First	(c) Second	(d) Third	(e) Fourth
16. Surveys,Studies,Investigations, Demonstrations and Special Purpose Activities relating to the Clean Air Act	$ 102,741.00	$	$	$
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	$ 102,741.00	$	$	$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges: $358,552

22. Indirect Charges: $5,848 28.5% of salaries of $20,517

23. Remarks: 28.5% Approved Indirect Rate on salaries only

Title: Community-Scale Methyl Bromide Monitoring Project for Suffolk, Virginia

Applicant information: Virginia Department of Environmental Quality (DEQ), 629 East Main Street, PO Box 1105, Richmond, Virginia 23218; Charles Turner, Director, Office of Air Quality Monitoring, Telephone (804) 527-5178, Facsimile (804) 527-5160, Charles.Turner@deq.virginia.gov

Funding Requested: $364,400

Total Project cost: $364,400

Project periods: Upon approval, DEQ will begin formation of the stakeholder group, location of fixed monitoring site for each facility, and equipment procurement. Monitoring for this project will begin no later than April 1, 2012 with a project completion date of September 30, 2013.

DUNS number – 809743768

Basis/Rationale

The DEQ proposes to perform an air monitoring study in order to assess the degree and extent to which emissions of methyl bromide from fumigation operations in Suffolk, Virginia impact the local community. Methyl bromide is a federal hazardous air pollutant and a Virginia state toxic air pollutant.

There are two large-scale fumigation facilities in Suffolk, Virginia that emit methyl bromide above major source threshold levels. Both facilities built without an air permit to construct and operate and DEQ is processing a 112(g) case-by-case maximum achievable control technology (MACT) application for each facility. The City of Suffolk's proximity to the Port of Virginia and the increased use of methyl bromide as a quarantine and pre-shipment fumigant might result in a disproportionate adverse impact from the operation of these facilities on residents of Suffolk.

The first facility, Royal Fumigation, Inc. (Royal) is located at 520 Finney Avenue in Suffolk, Virginia. The primary activity is the fumigation of logs for export using methyl bromide as the fumigant. When the prescribed fumigation period is over, the storage containers are aerated by opening the warehouse doors and using exhaust fans to pull the gas-laden air into the ventilation stacks. Aeration continues until the measured methyl bromide concentration level in the building is less than 5 parts per million. DEQ has little information about the ambient concentration during aeration. The Royal facility has the potential to emit over 90 tons of methyl bromide per year. The second facility, Western Fumigation Inc. (Western) is located at 4165 Pruden Boulevard and has the potential to emit 55 tons per year of methyl bromide. Neither facility controls methyl bromide emissions.
Both operations are located in populated areas with a potential impact on sensitive populations. Royal is located between two housing subdivisions. Western is located across from a high school and a preschool facility with a playground. In addition, a new apartment building was recently constructed downwind of the facility. DEQ performed preliminary monitoring of both facilities and analyzed samples with some results above the health-based state standard. DEQ does not have a complete understanding of potential impacts from these facilities because of a lack of a permitting history and minimal experience with methyl bromide.

Preliminary monitoring was inconclusive prompting DEQ to recognize a need for a more comprehensive study. DEQ considered performing a modeling study at each of these facilities. However, it is our understanding that EPA-preferred dispersion models do not properly simulate impacts from fumigation facilities due to the fact that these models assume steady-state emissions and meteorological conditions. In addition, it is difficult for these models to simulate the dispersion of "dense gases" such as those used in fumigation operations.
The primary goal of the study is to assess health risk based on ambient air quality in the vicinity of these two fumigation facilities. The study is expected to provide the following additional benefits:

- Refined monitoring data will provide an indication of the validity of preliminary monitoring data pointing to elevated concentrations of methyl bromide.

- Although at this time it is believed that EPA-preferred dispersion models may not accurately simulate the impacts of methyl bromide fumigation facilities, having the ability to measure concentrations across the plume will be helpful in developing future methods and models to estimate methyl bromide ambient impacts for future permitting actions and risk assessments.

- Data collected will be useful for permitting staff to determine acceptable operating parameters that may be included in new source and operating permits for future fumigation operations.

Technical Approach

The proposed monitoring project will be used to determine the maximum concentration of methyl bromide during fumigation and aeration operations and to compare the monitored results against Virginia state air toxics health-based standards. The monitoring will include instantaneous, hourly, and 24-hour concentrations. Monitoring data collected will be used to determine a degradation curve for methyl bromide in the ambient air. The data will also be used to determine a 24-hour methyl bromide exposure level and to estimate the annual exposure. Production information (fumigant loading) will be collected on an aeration by aeration basis from each facility. The proposed monitoring project will enable DEQ to determine the methyl bromide concentrations in heavily populated areas with a focus on potentially sensitive populations. In addition, the collected data will provide supporting observations to determine whether available models or other methods can be used to predict methyl bromide impacts.

DEQ plans to perform fence-line sampling during the fumigant aeration process. The study samples will be collected in different phases of the fumigation process as well as under varying meteorological conditions. The Project Sampling Network will tentatively consist of one fixed and five portable monitoring stations surrounding the monitored facility. Ideally, the fixed location should be located downwind of the facilities. The exact location for this site will be dependent on the predominant primary wind direction in the area and available land use. DEQ will use this site to collect meteorological data, one 24-hour canister sample for annual concentration, and up to 24 hourly samples per sampling date for risk and health assessment. The portable stations will be located around the facility and as close as possible to the warehouse's vents. These locations will be determined based on the direction of facility plume observed by the FLIR camera. DEQ plans to set up a series of portable ppbRAE 3000 PID at these roaming locations in order to detect possible highest concentrations, spatial concentration for degradation curves, and 1-hour canister samples using the passive sampler. Colorimetric samples will be utilized to confirm any elevated methyl bromide detected by the ppbRAE 3000 monitor. In addition to the above stations, a DEQ technician will act as a revolving station. This technician will operate the ppbRAE 3000 PID monitors and collect grab canister samples if necessary.

The initial phase of the proposed project includes direct ambient monitor readings using various sampling techniques which will allow DEQ to determine the characteristics of the plumes. Monitoring is planned to include both temporal and spatial based ambient samples. Next, DEQ will use the collected data to perform a risk assessment of methyl bromide for populated areas potentially impacted by the fumigation facilities. Finally, DEQ will provide the necessary information to the Virginia Department of Health (VDH) in order for them to produce an overall health effects report.

A Quality Management Plan and a Quality Assurance Project Plan (QAPP) for the project will be developed and submitted prior to the first day of sample collection for approval. This QAPP should include the approved laboratory methods TO-15.

In order to achieve these goals, the monitoring plan associated with this project will tentatively be performed as follows:

1. Collect meteorological data (wind speed, wind direction, temperature and relative humidity) prior to and during the project.
2. Use an infrared camera to map plume dispersion during the aeration portion of the process.

The infrared camera analysis is important because these facilities do not have standard vertical stacks but vent at ground level through nonstandard vent geometries. In addition, methyl bromide has untested dispersion characteristics making monitor siting difficult.

3. Use the results from the infrared camera evaluation to establish a network of canister and portable photo ionization detector (PID) monitoring locations to locate the maximum concentration as well as the spatial gradient of methyl bromide concentrations.
4. Set up a temporary fixed station for the 24-hour sampler and the field gas chromatograph with PID to collect information to illustrate the temporal gradients. Conduct exposure monitoring through the use of one-hour canister sampling at locations where people live, work, and play with an emphasis on sensitive populations. Locations may include the preschool playground and subdivisions.
5. Use monitored information to determine ambient concentrations, spatial and temporal gradients and methyl bromide degradation curves.
6. This information will be used by DEQ to estimate annual methyl bromide exposure for each community and to perform a risk assessment. The collected information will also be used by VDH to develop the health affects report.

Data Analysis

The data gathered during this monitoring study will be directed at the following deliverables:

Data Report

The data reporting process will include the ongoing review and evaluation as it is generated. The data that we are evaluating will be compared to the data quality objectives outlined in the Quality Assurance Project Plan (QAPP). The monitoring plan and the QAPP will continuously be updated based on these evaluations. The formal deliverable document will be the formal data report at the end of the monitoring phase of this project. The data report will include all phases of operation including background data, fumigation data and aeration data. This report will also include a quality assurance evaluation of all data gathered during the monitoring study.

Risk Assessment

The risk assessment will use the data generated from the study to determine the non-cancer respiratory risk associated with exposure to methyl bromide from the Suffolk fumigation facilities. The risk assessment will use the 24-hour cumulative samples along with the hourly results to determine the potential impact of the acute and chronic exposure to methyl bromide. The data sets will be used to calculate an upper confidence limit on the mean to estimate an exposure point concentration. An appropriate statistical method will be used to address non-detected results. . The MDL from the analysis of the canister sample will be determined in SIM (selective ion mode) mode. The risk will be expressed as a hazard quotient which is calculated as the exposure concentration divided by the inhalation reference concentration contained in EPA's Integrated Risk Information System (IRIS).

Health Assessment

The final Health Assessment will be performed by VDH. They will be looking for data that demonstrates the short term or acute exposure to methyl bromide in the surrounding communities during the aeration process using one hour samples. They will also evaluate how long the methyl bromide will remain as a detectable component in the ambient air surrounding the facilities. This will be done by developing degradation curves from sequential one hour samples. The health assessment report will include an evaluation of the simultaneous portable PID data and the grab samples to determine the spatial distribution of the ambient methyl bromide concentrations.

Modeling (if applicable)

The Office of Air Quality Assessment (OAQA) will perform sample modeling runs using production information during the monitoring study. OAQA will use the monitored results to compare with the modeled ambient concentrations to validate the model runs. The accuracy of the model runs relative to the monitored data will determine if an adequate modeling approach can be developed.

Environmental Justice

Both facilities are located adjacent to populated areas with populations that contain children and the elderly. Across the parking lot from the Western facility is a high school and a preschool with a playground. A new

apartment building with a courtyard playground is located downwind of the Western facility. The Royal facility is encircled by single family homes on the east, south and west of the facility. Figure 1 below provides an overhead view of the locations of these facilities and their proximity to surrounding homes and public facilities.

Community Collaboration/Outreach

DEQ will form a stakeholder group to act as the primary mode of communication with the people of Suffolk. The stakeholder group will consist of local citizens, members of the Suffolk public school system, local officials, industry representatives, respiratory health advocacy groups, VDH staff, and DEQ staff. The methods for meetings and public discussions will be similar to those used in previous projects. DEQ will incorporate improvements and lessons learned including frequent stakeholder meetings, discussions of data as it is generated /gathered, and frequent project updates through the use of social media and the DEQ web page.
DEQ's community collaboration involvement will continue after project completion to help the community address long term exposure to methyl bromide, if warranted.

Environmental Results: Outcomes, Outputs, and Performance Measures

Outcomes from the proposed project include improved community awareness, citizen involvement to include input to local governing entities regarding siting decisions for methyl bromide operations, industry awareness of community issues, data to develop an air quality analysis approach for methyl bromide and a better understanding of the fumigation industry and the impact of methyl bromide emissions for DEQ permitting staff.
Outputs from the proposed project include instantaneous methyl bromide concentrations from PID portable monitors and grab canister samples, hourly methyl bromide concentration data, and 24-hour cumulative methyl bromide concentration data. The data will be used to develop a monitoring data report, a risk assessment report, and an overall health effects report. In addition, another possible benefit of the data will be to develop a modeling approach for methyl bromide.

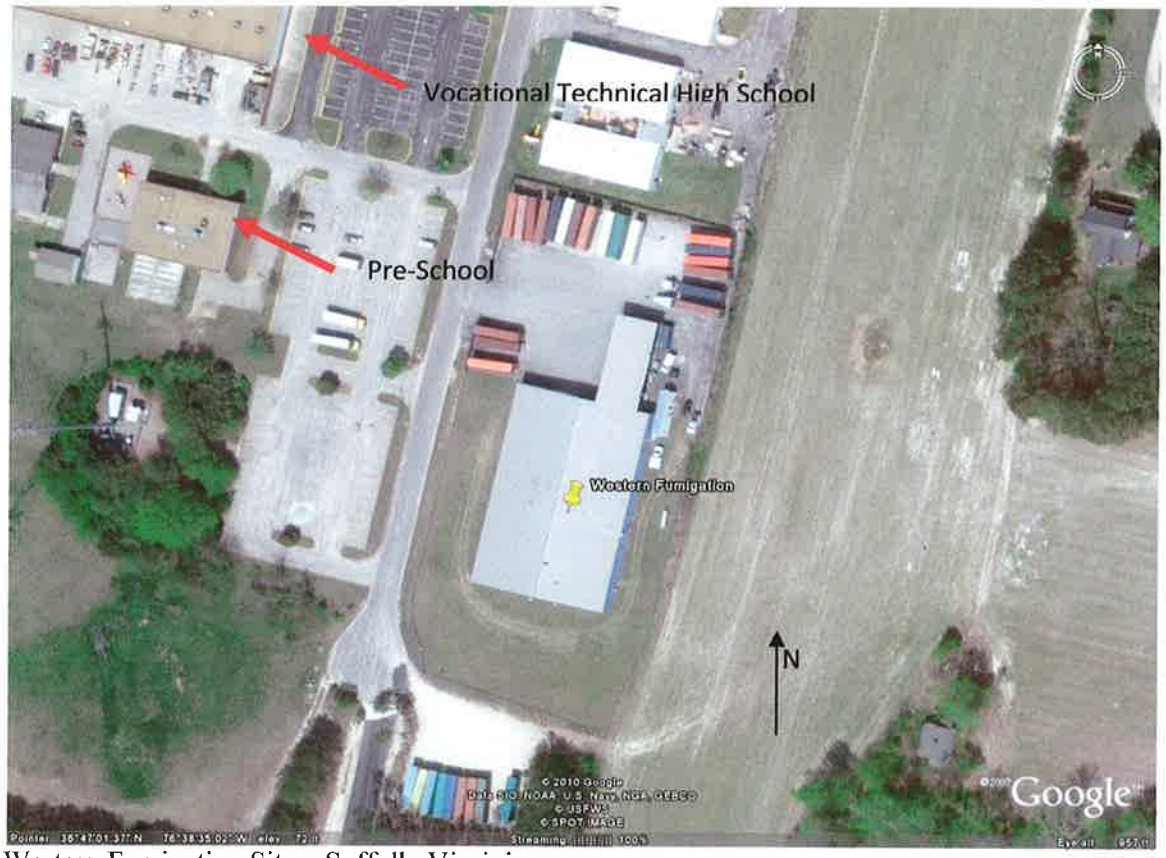
The performance measures used to determine the effectiveness of the study are directed towards the output and the outcomes as defined above. These performance measures can be categorized as data specific measures – data quantity and quality; documentation specific measures – comprehensive reporting and inclusive review; community specific measures – community meeting effectiveness and follow-up measures.

Data Quantity - 67% percent of planned monitoring events will be completed, 85% of all samples will be valid samples, methyl bromide detected in 50% of canister samples taken during aeration.
Data Quality - Meets measure quality objectives defined in the quality assurance project plan,
Comprehensive Reporting -All documentation developed meets the objectives defined for that report.
Inclusive Review – All reports will maintain a record of 100% of the comments and responses by all interested parties
Community Meeting Effectiveness - 100% of all meetings will have sign-in sheets and an agenda will be posted two weeks prior to each meeting.
Community Follow-up Measures- DEQ will post meeting reports for 100% of all community meetings and responses for all unanswered questions will be available to the public within 30 days of the meeting date

Programmatic Capability and Past Performance

The DEQ has extensive experience with similar community air toxics studies. In addition to the Community Air Toxics Grant funded air toxics study performed in Winchester, Virginia in 2005 and 2006, the DEQ Office of Air Quality Monitoring (AQM) performed an extensive air toxics study in Hopewell, Virginia. AQM formed a stakeholders group for the Hopewell study that consisted of members of public school administration, elected officials, city public utilities department, representatives of the general public, the VDH and DEQ. The purposes

Figure 1. Overhead views of the Western and Royal Fumigation facilities



Western Fumigation Site – Suffolk, Virginia

Royal Fumigation Site – Suffolk, Virginia

of the stakeholders group were: 1. to assist DEQ in formulating the results of the study in a way that was understandable to the general public; 2. to have a method to keep the public informed of study progress on an on-going basis; and 3. to get insights into local happenings that could impact the collected data.

The Hopewell Air Toxics Study was funded through a community air toxics grant and involved data collection at three separate monitoring sites – the Woodson upwind site, the Spruance central site and the Rice Center downwind site. AQM sampled for volatile organic compounds (VOCs), Carbonyl's, PM10-metals, and Hexavalent Chromium at each of the sites for approximately 2 years. The data was presented to the stakeholders group and then to the general public in a comprehensive data report. The data was then used to develop a Risk Assessment report that calculated cancer and non-cancer risk levels and through this report DEQ developed an action plan for addressing these risks. The deliverables from this study including the data report, the Quality Assurance Analysis report, and the Risk Assessment report were all provided to EPA Region 3 in a timely manner. Through performing this study DEQ developed a long-term Risk Assessment capability in the Air Division, AQM has a group of stakeholders who are well informed and can act to assist DEQ with the dissemination of technical air quality information and the Air Division has upgraded and improved its basic understanding of the air quality issues in Hopewell.

In addition to the Hopewell and the Winchester studies, since 2008 AQM has operated and maintained a National Air Toxics Trend Site in Eastern Henrico County, Virginia. This site is part of the national air toxics trend network and AQM manages the grant funding for this monitoring site. EPA performed a Technical Services Audit for both the monitoring site and for the Virginia analytical laboratory and the program has received the comprehensive final report. VOC, Carbonyl and Metals analytical work for the NATTS site is performed by the Virginia Division of Consolidated Laboratories (DCLS) and DCLS has recently developed the ability to analyze for polyaromatic hydrocarbons as well. DCLS analytical and documentation procedures have been evaluated and reviewed through the Technical Systems Audit process.

Detailed Budget Narrative

The project requires the following EPA support to provide necessary funding for the project in a form of a special grant award, to advise on technical and quality assurance issues, to monitor the project's progress and performance to verify the results, and to approve qualifications of key personnel.

DEQ requests a funding of $364,400 for the proposed Fumigation Evaluation Monitoring project.

• Personnel Cost	$20,517
• Fringe Benefits	$7,435
• Travel	$2,600
• Construction and Set-up Cost	$10,000
• Equipment	$162,000
• Supplies	$20,000
• Sample Analysis Costs	$132,000
• Training and Public Notice	$4,000
• Indirect Costs	$5,848

The followings are narrative details of the funding request for the proposed project; the costing details are contained in Table 1. entitled Detailed Budget Table.

Construction and Set Up (Other) Cost:

Trailer Repair and preparation : DEQ will use the existing trailers for the execution of the project. One trailer will be located at each site to gather continuing meteorological data and to house the 24 hour samplers. Each trailer will house supplies during the testing period such as additional canisters, tools and backup equipment.

Trailer preparation and repairs *$3,000*

Power installation (two sites): Each trailer will have to be supplied with power so that the 24 hour samples can be

taken and the meteorological instrumentation can be run continuously. DEQ has evaluated each site and determined there is existing infrastructure which can be modified to supply the trailers.
Power installation *@ $3,000/site* *$6,000*

Miscellaneous: DEQ will need to outfit each trailer with supplies to support the sampling effort. This will include additional fittings, mass flow controllers, tubing and other supplies.
Miscellaneous fittings, etc. *$1,000*

Equipment:
DEQ proposes to use the following instruments to support this project:

FLIR Camera: The FLIR Systems GasFindIR LW is a real-time infrared camera, capable of detecting in the long wave region of the infrared spectra (approximately 10-11um). This gives the camera the ability to visualize many VOCs and other chemical compounds with infrared absorbance in this region. This capability will be advantageous in detecting and tracking a plume, in order to maximize captured concentrations during sampling. DEQ will lease this piece of equipment during the study.
Leasing Cost *$30,000*

GC-8900 system for 1-hour sample: The Series 8900 Methyl Bromide Monitoring System made by Baseline-Mocon INC provides an automated, direct measurement of Methyl Bromide in ambient air. Multipoint sampling options allow the analyzer to monitor multiple sample locations for greater coverage. Its Limit Detection Limit can be as low as 10 ppb. It provides automatic calibration to verify accuracy. The Series 8900 Methyl Bromide Analyzer uses a photo-ionization detector (PID). To be specific to methyl bromide, a pre-cut column is used with an analytical column and a timed back flush to strip off moisture and heavier hydrocarbons.
Purchase one, total *$35, 000*

ppbRAE3000 PID Portable Monitor: The tentative setup configuration for a monitored facility consists of seven ppvRAE3000 PID monitors, seven RAElink-3 remote modems, one RAElink 3 repeater, and one laptop equipped with ProRAE remote software and a RAElink-3 host modem. The ppbRAE 3000 monitors will be used to measure fugitive and vented methyl bromide. By surrounding the fence line with multiple detectors, it increases the likelihood of detecting these compounds when wind direction varies. The basic configuration allows for the four cardinal points to be covered with an additional two fixed locations in the downwind direction. An additional roving detector will cover suspected hotspots and dispersion depths in the downwind direction. Each of the RAElink -3 remote modems will transmit concentration and GPS data back to the central collection point via a RAElink-3 repeater. The central collection point will consist of ProRAE remote software loaded on an existing AQM laptop. This system will communicate with and collect data from the sensor field via a RAElink3 host modem and RAElink 3 repeater. Data will be stored on the laptop's hard drive for real-time monitoring and later analysis.
Purchase six, total *$65,000*

ATEC Model 8001 Canister Sampler: The Model 8001 Canister Sampler is a self-contained air sampling instrument designed to collect air samples into canisters for specified periods. The sampler can be configured for either sub-ambient or pressurized canister sampling as well as simultaneous collocated sampling for canisters using independent mass flow controllers. Multi-port expansion units can be added to increase the number of canister samples.
Purchase one, total *$15,000*

Passive Canister Sampler: The mobile passive sampler will be used to collect 1-hour samples at various locations around the monitored facility. It consists of a Veriflow SC423XL Series Flow Controller which supplies a constant flow with a self correcting action to compensate for changes in downstream pressure. The SC423XL is designed for air and analyzer sampling systems that require very low flow rates (less than10 sccm).
Purchase three, total *$2,000*

One RMESI or ATEC Sequential Sampler $5,000

One Canister Sampling Tree		$1,000
One Meteorological Station + Calibration Kits		$4,000
Two Handheld Meteorological Monitors and batteries		$3,000
Power Generator		$1,000
Six Battery-operated Pumps		$1,000

Supplies:

20 Restek Silco canisters	@ $600.00 each	$12,000
Personal Protection Equipment		$3,000
Calibration Gases		$1,000
Colorimetric Methyl Bromide Tubes (for confirmation)		$4,000

Sample Analysis (Contractual) Cost:
The Virginia Division of Consolidated Laboratory Services (DCLS) will perform sample analysis using the method TO-15. The collected canister samples will be analyzed by GC/MSD in Selected Ion Monitoring (SIM) mode. Prior to the starting date, DCLS will provide an SOP that meets the project specifications for sample analysis.

DEQ tentatively plans one sampling date per week for a total of approximately 24 sampling dates per facility. The following are projected numbers of canister sample per sampling date: The projected number of canister samples per sampling date is: five grab samples, one 24-hour samples, and four 1-hour samples.

Sample Analytical Costs			
Primary Samples	480	$250.00 each	$120,000
QA Samples	48	$250.00 each	$12,000

Personnel Cost
The personnel assigned to this project will include; 1 senior Engineer ($54,671) @6% of his time; 1 Senior Engineer ($51,936) @6% of his time; 1 Senior Environmental Specialist ($55,309) @6% of his time and 1 Senior Environmental Specialist ($54,328) @1% of his time.

Training and Public Participation Costs
In the category of "Other" DEQ has included costs associated with implementation and execution of the public notice and public participation aspects of this project.

Travel Costs
Travel will involve 36 trips @ 109 miles 1 way (218 miles round trip).

Training on FLIR Camera: In order to properly use the IR camera, DEQ will send one person to training provided by the supplier of the camera. The training will be a week at a remote location.
Training (Brian King, see leveraging write-up) *$2,000*

Public Notice Costs: The public will be informed of all meetings which may involve publication in local newspapers.
Notification Costs *$1,000*

Meeting Space: All meetings are planned for public facilities. This line item is reserved for any incidental costs that may arise in locating, reserving, and using these facilities.
Meeting space contingencies *$250*

Printing and Publishing incidentals: Signs, posters or other printing costs associated with the meetings.
Signage *$750*

Table 1. Detailed Budget Table

	EPA Funding	Cost Share
PERSONNEL		
(2) AQM Engineers @6% time over 2 years	12,793	
(1)AQM Specialist @ 6% over 2 years	6,637	
(1)AQM Specialist @ 1% over 2 years	1,087	
TOTAL PERSONNEL	$20,517.00	
FRINGE BENEFITS 36.24% of salaries		
TOTAL - VA retirement system, FICA, etc.	$7,435	
TRAVEL		
Travel for DEQ personnel 218 miles/trip;36 trips @ $0.326 per mile	$2,600	
Equipment		
Leasing cost - One FLIR Camera	30,000	
One 8900 GC & accessories	35,000	
Six ppbRAE 3000 PID monitors & accessories	65,000	
One RMESI or ATEC toxic sampler	15,000	
One RMESI or ATEC sequential sampler	5,000	
Three Passive Samplers	2,000	
One Canister Sampling Tree	1,000	
One Meteorological station + calibration kits	4,000	
Two Handheld Meteorological monitor	500	
Batteries	2,500	
Power Generator	1,000	
6 Battery operate pumps	1,000	
TOTAL - EQUIPMENT	$162,000.00	
SUPPLIES		
20 Restek Silco Canisters@600.00 ea	12,000	
Personal Protective Equipment	3,000	
Calibration Gases	1,000	
Colorimetric MeBr Tubes	4,000	
TOTAL SUPPLIES	$20,000.00	
CONTRACTUAL COSTS		
Primary Samples	120,000	
QA Samples	12,000	
TOTAL CONTRACTUAL COSTS	$132,000.00	
OTHER		
Trailer Repair and preparation	$3,000	
Power installation (two sites) @ $3,000 each	$6,000	
Miscellaneous (fittings, mass flow controller, etc)	$1,000	
Training	$2,000	
Public Notice Costs	$1,000	
Meeting Space	$250	
Printing and Publishing incidentals	$750	
TOTAL OTHER	$14,000.00	
INDIRECT COSTS		
Indirect Rate – 28.50%; IC = I/R*Personnel	$5848	
TOTAL FUNDING	**$364,400.00**	

Leveraging

In addition to EPA's funding, DEQ will provide additional air monitoring support from its existing manpower and resources. DEQ personnel will be responsible for planning, guidance, oversight, sampling, data management, risk assessment, trouble shooting, and technical support. DEQ contributions also include vehicle, mobile monitoring trailers, canisters, outdoor enclosures, cost of repair sampling equipment, communication devices, etc. DEQ plans to use two monitoring trailers already owned by DEQ, the associated monitoring equipment and existing data acquisition capabilities. The office of Air Quality Monitoring (AQM) provides technical staff for planning, guidance, oversight and technical support. AQM staff is also responsible for managing; reviewing; and quality assuring the collected data to conform with air monitoring requirements prior to submittal to the EPA Air Quality System (AQS) database.

Personnel:

1. An advisory panel will be established to assist the project staff in policy, personnel and technical issues.

   Mike Dowd – Director, Division of Air Quality
   Charles Turner – Director, Office of Air Quality Monitoring
   Michael Kiss – Manager of Office of Air Quality Assessment
   Tamera Thompson – Director, Office of Air Permit Programs
   Troy Breathwaite – Air Compliance Manager, Tidewater Regional Office
   Patty Buonviri – Air Toxics Coordinator, Office of Air Permit Programs
   Pat McMurray - Risk Assessment Program Manager, Office of Remediation Program
   Dwight Flammia, Ph.D. - State Public Health Toxicologist, VDH
   Kerri Hall, MD, MS, - State Epidemiologist, VDH
   Rebecca LePrell, MPH, - Director, Division of Environmental Epidemiology, VDH

DEQ will reach out to include stakeholder groups such as local political entities, environmental groups, local resident, and industry groups to assist in guiding and implementing the project.

2. The Data and Special Studies Group of the Office of Air Quality Monitoring (AQM) is assigned to manage the project:

   James Dinh - Group Supervisor
   Brian King - Air Toxics Engineer Senior
   Baxter Gilley - Air Toxic Engineer Senior
   Frank Burbank - Environmental Specialist II
   Rudley Young - Environmental Specialist II

3. The Tidewater Regional Office (TRO) provides guidance and additional manpower to assist in sample collection. Additional staff will be properly trained by AQM.

4. The Office of Air Permitting and Office of Remediation Programs provide guidance and support for the project's final report and risk assessment.