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RECORD OF DECISION

SOIL VAPOR INTRUSION AT SD-052-02 BUILDING 775 SITE (BUILDINGS 774 AND 776) AND SD-052-01 APRON 2 CHLORINATED PLUME SITE (BUILDINGS 785 AND 786) FORMER GRIFFISS AIR FORCE BASE ROME, NEW YORK

Air Force Civil Engineer Center
Building 171
2261 Hughes Avenue, Suite 155,
Joint Base San Antonio Lackland, TX

September 2016

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LIST OF ACRONYMS

AFB	Air Force Base
AFRPA	Air Force Real Property Agency
Air Force	United States Air Force
AOC	Area of Concern
ARARs	Applicable or Relevant and Appropriate Requirements
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
BRAC	Base Realignment and Closure Act
CDI	chronic daily intake
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
DAF	dilution attenuation factor
DCE	dichloroethylene
E&E	Ecology and Environment, Inc.
EPA	United States Environmental Protection Agency
FFA	Federal Facilities Agreement
FPM	FPM Remediations, Inc./FPM Group, Ltd.
FS	Feasibility Study
ft	feet
GAC	granulated activated carbon
gpm	gallons per minute
HQ	Hazard Quotient
in w.g.	inches of water gauge
IRA	Interim Response Action
IRP	Installation Restoration Program
LTM	Long Term Monitoring
LUC/IC	Land Use Control/Institutional Control
$\mu g/m^3$	microgram per cubic meter
$\mu g/L$	microgram per Liter

LIST OF ACRONYMS (continued)

NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	operations and maintenance
ppb	parts per billion
RAO	Remedial Action Objective
RfD	reference dose
RI	Remedial Investigation
ROD	Record of Decision
ROI	Radius of Influence
RSLs	Region Screening Levels
SAC	Strategic Air Command
scfm	standard cubic feet per minute
SF	slope factor
sq ft	square feet
SSVM	sub-slab vapor mitigation
SVI	Soil Vapor Intrusion
TCE	trichloroethylene
VC	vinyl chloride
VISLs	Vapor Intrusion Screening Levels
VMP	vapor monitoring point
VOC	Volatile Organic Compound

DECLARATION FOR THE RECORD OF DECISION

Site Name and Location

Soil Vapor Intrusion at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786)

Former Griffiss Air Force Base, Rome, New York

EPA ID # NY4571924451

Statement of Basis and Purpose

This Record of Decision (ROD) presents the selected remedial alternative for Soil Vapor Intrusion (SVI) at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) at the former Griffiss Air Force Base (AFB) in Rome, New York. It has been developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record for this site, a copy of which is available on-line at http://afcec.publicadmin-record.us.af.mil/Search.aspx**.**

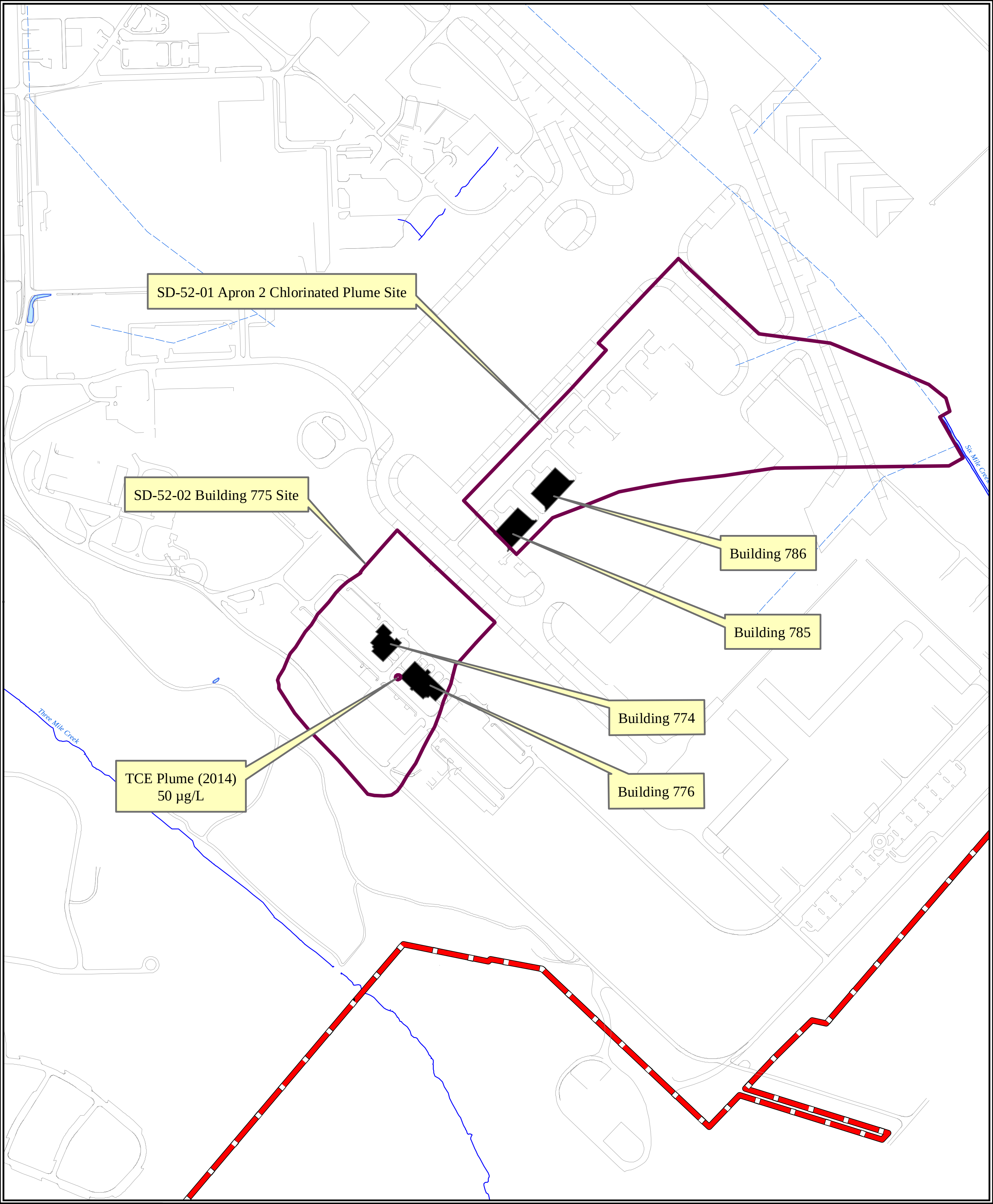
The remedy has been selected by the United States Air Force (Air Force) and the United States Environmental Protection Agency (EPA) with the concurrence of the New York State Department of Environmental Conservation (NYSDEC) pursuant to the Federal Facility Agreement among the parties under Section 120 of CERCLA, dated March 29, 1990. The remedy has been selected under the CERCLA, NCP, and EPA CERCLA guidance. A copy of the NYSDEC concurrence letter is included as Appendix A of this ROD.

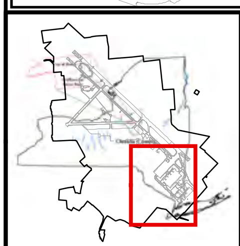
Assessment of the Site

Buildings 774 and 776 are located between Phoenix Drive and Ready Road at the former Griffiss AFB in Rome, New York (Figure 1). The SVI potential at these buildings is a result of contaminated groundwater associated with the SD-52-02 Building 775 Site.

Buildings 785 and 786 are located on the southwestern corner of Apron 2 between Aprons 1 and 2 (Figure 1). The SVI potential at these buildings is a result of contaminated groundwater associated with the SD-52-01 Apron 2 Chlorinated Plume Site.

Based on EPA Guidance, SVI is a potential pathway to human exposure. The vapor intrusion pathway from soil to human ingestion is considered complete if the following five conditions are met: *"1). A subsurface source of vapor-forming chemicals is present (in soil or groundwater) underneath or near a building. 2). Vapors form and have a route along which to migrate toward the building. 3). The building is susceptible to soil gas entry, which means openings exist for the vapors to enter the building and driving forces exist (air pressure differences) to draw the vapors from the subsurface through the openings into the buildings. 4). One or more vapor-forming*





Key to Features

- Road/Airfield
- Storm Drain
- Surface Water
- Base Boundary
- Site Location
- Existing Facility
- Demolished Facility
- IRP Site

Figure 1
Buildings 774, 776, 785, and 786
Site Locations

N

0 500 1,000
Feet

UNITED STATES AIR FORCE
GRIFFISS AIR FORCE BASE
ROME, NEW YORK

FPM Remediations, Inc.

Y:\GIS_Projects\Griffiss\Projects\1015-11-01\SVI\SVI Proposed Plan\Figure 1.mxd

chemicals comprising the subsurface vapor source is present in the indoor environment. 5). The building is occupied by one or more individuals when the vapor-forming chemical is present indoors" (EPA, June 2015*).*

SVI mitigation is ongoing that these buildings which is based on the results from the Feasibility Study (FS) conducted in 2008 for SVI at Buildings 774, 776, 785, and 786 and evaluation of the ongoing Interim Response Action (IRA). Both of these documents were reviewed by the Air Force, New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH) and United Stated Environmental Protection Agency (EPA). The FS evaluated all available alternatives based on:

- Evaluation of potential threats to human health and the environment,
- Prevention of Volatile Organic Compounds (VOCs) from entering the interior of buildings, and
- Technical and cost effectiveness.

For the FS, soil vapor analytical results were compared to the Air Force Industrial/Commercial SVI Screening Levels. The SVI risk-based screening values were calculated using conservative exposure assumptions for human health to indoor air and soil vapor under an industrial/commercial scenario.

The IRA, horizontal sub-slab depressurization, was implemented by the Air Force following the FS. The purpose of the IRA was to evaluate the effectiveness of horizontal sub-slab depressurization. Under the IRA and future remedial actions, protectiveness of the remedy will be evaluated using applicable NYSDOH criteria, pertinent EPA Regional Screening Levels (RSLs), or a site-specific human health risk assessment prepared in accordance with EPA guidelines.

Description of the Remedy

The selected remedy is SVI mitigation by horizontal sub-slab depressurization at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786). The action addresses the vapor intrusion potential associated with the contaminated groundwater at SD-052-02 Building 775 and SD-052-01 Apron 2 Chlorinated Plume Sites as recommended by the ROD for the On-Base Groundwater Area of Concern (AOC) which was finalized in December 2008 and signed by the Air Force and EPA in March 2009 (Air Force Real Property Agency [AFRPA], December 2008).

Statutory Determination

The selected remedy for the SVI potential at Buildings 774 and 776 and Buildings 785 and 786 is protective of human health and the environment and complies with federal and state Applicable or Relevant and Appropriate Requirements (ARARs), is cost effective, and utilizes permanent solutions and resource recovery technologies to the extent practicable. The remedial action objectives (RAOs) are intended to prevent individual human exposure to soil gas vapor levels within buildings at unacceptable levels represented by an excess cancer risk greater than 1×10^{-6} and also represented by a potential non-cancer risk for a hazard index greater than one.

Until groundwater ARARs are achieved, SVI potential at Buildings 774 and 776 and Building 785 and 786 will exist that may not allow for unlimited use and unrestricted exposure. Therefore, a statutory review, according to Section 121(c) of CERCLA, will be conducted within five years after initiation of the remedial action, and at a minimum of once every 5 years thereafter until performance standards are achieved, to insure that the remedy is protective of human health and the environment.

ROD Data Certification Checklist

The following information is included in this ROD.

- Chemicals of concern and their respective concentrations (Section 5)
- Risk represented by the chemicals of concern (Section 7)
- Cleanup levels established for chemicals of concern and the basis for these levels (Section 8)
- How source materials constituting principal threats are addressed (Section 4)
- Current and reasonably anticipated future land use assumptions used in the risk assessment and ROD (Sections 6 and 7)
- Potential land use that will be available at the site as a result of the selected remedy (Section 6)
- Key factors that led to selecting the remedy (Sections 10, 12, 13 and 14)

___________________________________ ______________

Date

Director
Installation Directorate
Air Force Civil Engineer Center

___________________________________ ______________

WALTER E. MUGDAN Date
Director, Emergency and Remedial Response Division
United States Environmental Protection Agency, Region 2

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DECISION SUMMARY

1 SITE NAME, LOCATION, AND DESCRIPTION

The former Griffiss AFB covered approximately 3,552 contiguous acres in the lowlands of the Mohawk River Valley in Rome, Oneida County, New York. Topography within the valley is relatively flat, with elevations on the former Griffiss AFB ranging from 435 to 595 feet (ft) above mean sea level. Three Mile Creek, Six Mile Creek (both of which drain into the New York State Barge Canal, located to the south of the base), and several state-designated wetlands are located on the former Griffiss AFB, which is bordered by the Mohawk River on the west.

1.1 SD-052 Soil Vapor Intrusion Operable Unit

The SD-052 Soil Vapor Intrusion Operable Unit is comprised of two sites: SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) at the former Griffiss AFB in Rome, New York.

1.1.1 Buildings 774 and 776

These two buildings are located between Phoenix Drive and Ready Road at the former Griffiss AFB in Rome, New York (Figure 1). The SVI potential at these buildings is a result of contaminated groundwater associated with the SD-52-02 Building 775 Site.

Building 774 is a one-story office building, approximately 18,990-square feet (sq ft) in size, is currently occupied by a computer/security firm. The building is occupied on work days from 8 AM to 5 PM by approximately 45 people. Building 774 was built in 1959, but underwent major renovations in 2000. New windows and doors were installed along with 36 new air handlers including new air ducts in ceilings and new cooling towers. The building's foundation is an 8-inch thick concrete slab with no basement. The floors are mostly carpeted except for the bathrooms, janitor's closet and boiler room where floor drains exist. Building 776 is a one-story office building and is approximately 27,410 sq ft. The building is currently occupied by a software development firm. The building is occupied on work days from 7 AM to 6 PM by approximately 80 people. Building 776 was built in 1959, but underwent major renovations in 2002. New windows, which do not open, and doors were installed, the interior was refinished and most floors were covered with new carpeting. Heat and outdoor air are provided through 43 heat pumps. The building is built on a 3.5 to 6-inch thick concrete slab, with no basement. Several floor drains exist in bathrooms and one crack was observed in the concrete floor near the southeastern entrance door.

1.2 Buildings 785 and 786

Buildings 785 and 786 are located on the southwestern corner of Apron 2 between Aprons 1 and 2 (Figure 1). The SVI potential at these buildings is a result of contaminated groundwater associated with the SD-52-01 Apron 2 Chlorinated Plume Site.

Each building is 28,251 sq ft and is currently an unoccupied airplane hangar. The buildings are largely open with several first and second floor offices on the buildings' interior perimeters. Buildings 785 and 786 were built in 1959 on a 13.5 to 14-inch thick, unsealed concrete slab. These buildings served as aircraft maintenance facilities (nose docks) and were taken out of service in 1995 after the Griffiss AFB was realigned. Building 786 was occupied for a few years by a pallet refurbishing company until 2002. From 2002 to 2013, the buildings were used for equipment storage. During that time, all heating and air handling equipment were in a state of disrepair and assumed inoperable. In addition, the buildings were poorly sealed due to broken windows, open hangar doors, and missing exterior sheet metal. Renovations at Buildings 785 and 786 were initiated in the summer of 2013 and are currently ongoing. The renovations include repairs to the hangar doors, exterior sheet metal, and windows, repairs to electrical and heating systems, interior and exterior painting, and removal of first and second floor offices. Once the renovations are complete, both buildings will be used as aircraft hangars according to airport representatives.

1.3 Geology and Hydrogeology

Due to its high average precipitation and predominantly silty sands, the former Griffiss AFB is considered a groundwater recharge zone. Buildings 774 and 776 are located on Strategic Air Command (SAC) hill which is an elevated area in the southeast section of the former Griffiss AFB, overlooking the Aprons. The immediate area around the building is flat with little or no elevation difference. The area is covered with grass, asphalt parking lots, roads, and concrete walkways. Past investigations have indicated that the groundwater flow direction is in the south-southwesterly direction towards Landfill 6. The aquifer is comprised of silty sands with an average thickness extending from 60 ft below ground surface (bgs) to 120 ft bgs, where shale bedrock is encountered. The soils above the aquifer consist of 50 to 60 ft of fill material (LAW, December 1996). Due to a relatively flat gradient, average groundwater velocities at this site are slow and have been estimated at approximately 10 ft per year.

The immediate area surrounding Buildings 785 and 786 is relatively flat, mostly covered with reinforced concrete and has little or no elevation difference. The aquifer has an average thickness extending from approximately 4 ft bgs to 14.5 ft bgs. The soils above the aquifer consist of uniform brown, silty fine sand with gravel and occasional clay. The soils appear to be fill material (AFRPA, December 2008). A groundwater divide exists at Building 786, which causes low groundwater velocities in the area. Past investigations have indicated that flow direction is in the northeasterly direction towards Six Mile Creek.

2 HISTORY AND ENFORCEMENT ACTIVITIES

<u>Griffiss AFB Operational History</u>

The mission of the former Griffiss AFB varied over the years. The base was activated on February 1, 1942, as Rome Air Depot, with the mission of storage, maintenance, and shipment of material for the U.S. Army Air Corps. Upon creation of the U.S. Air Force in 1947, the depot was renamed Griffiss AFB. The base became an electronics center in 1950, with the transfer of Watson Laboratory Complex (later Rome Air Development Center [1951], Rome Laboratory, and then the Information Directorate at Rome Research Site, established with the mission of accomplishing applied research, development, and testing of electronic air-ground systems). The 49th Fighter Interceptor Squadron was also added. The Headquarters of the Grounds Electronics Engineering Installations Agency was established in June 1958 to engineer and install ground communications equipment throughout the world.

On July 1, 1970, the 416th Bombardment Wing of the SAC was activated with the mission of maintenance and implementation of both effective air refueling operations and long-range bombardment capability.

Griffiss AFB was designated for realignment under the Base Realignment and Closure Act (BRAC) in 1993 and 1995, resulting in deactivation of the 416th Bombardment Wing in September 1995. The Information Directorate at Rome Research Site and the Northeast Air Defense Sector will continue to operate at their current locations; the New York Air National Guard operated the runway for the 10th Mountain Division deployments until October 1998, when they were relocated to Fort Drum. The Defense Finance and Accounting Services has established an operating location at the former Griffiss AFB.

Environmental Background

As a result of the various national defense missions carried out at the former Griffiss AFB since 1942, hazardous and toxic substances were used and hazardous wastes were generated, stored, or disposed at various sites on the installation. The defense missions involved, among others, procurement, storage, maintenance, and shipping of war material; research and development; and aircraft operations and maintenance. As a result of historical operations, CERCLA hazardous substances, pollutants and contaminants have been released into the environment.

Numerous studies and investigations under the United States Department of Defense Installation Restoration Program (IRP) have been carried out to locate, assess, and quantify the past toxic and hazardous waste storage, disposal, and spill sites.

These investigations included a records search in 1981, interviews with base personnel, a field inspection, compilation of an inventory of wastes, evaluation of disposal practices, and an assessment to determine the nature and extent of site contamination; Problem Confirmation and Quantification studies (similar to what is now designated a Site Investigation) in 1982 and 1985; soil and groundwater analyses in 1986; a base-wide health assessment in 1988 by the U.S. Public Health Service, Agency for Toxic Substances and Disease Registry (ATSDR); base-specific hydrology investigations in 1989 and 1990; a groundwater investigation in 1991; and site-specific studies and investigations between 1989 and 1995. The ATSDR issued a Public Health Assessment for Griffiss AFB, dated October 23, 1995, and an addendum, dated September 9, 1996.

Pursuant to Section 105 of CERCLA, Griffiss AFB was included on the National Priorities List (NPL) on July 15, 1987. On August 21, 1990, the agencies entered into a Federal Facilities Agreement (FFA) under Section 120 of CERCLA. On March 20, 2009, 2,897.2 acres were deleted from the NPL. These sites are within the 655 acres remaining on the NPL. Under the terms of the FFA, the Air Force was required to prepare and submit numerous reports to the EPA and NYSDEC for review and comment. These reports address remedial activities that the Air Force is required to undertake under CERCLA and include identification of AOCs on base. A scope of work for a Remedial Investigation (RI), a work plan for the RI, including a sampling and analysis plan and a quality assurance project plan, a baseline risk assessment, a community relations plan and an RI report were developed. Site-specific reports produced by the Air Force include the final RI for Nosedocks/Apron 2 (FPM Group, Ltd.[FPM], April 2004), the final FS for Building 775 (Ecology and Environment, Inc. [E&E], April 2005), and the FS for Nosedocks/Apron 2 (FPM, May 2005). These documents cover the groundwater contamination at SD-052-02 Building 775 and SD-052-01 Apron 2 Chlorinated Plume Sites. A ROD for the On-Base Groundwater AOC was signed by the Air Force and EPA in March 2009 and recommended that the SVI potential would be addressed separately. Documents that address the SVI potential include Assumptions and Screening Levels for SVI Evaluation (Air Force, October 2007), a SVI Evaluation at Buildings 774, 776, 785, 786, and 817 (FPM, July 2008), a FS conducted in 2008 (FPM, February 2010), the Work Plan for Sub-Slab Vapor Mitigation Design (FPM, February 2011), Completion Report Sub-Slab Vapor Mitigation Systems, Buildings 774, 776, 785, and 786 (FPM, February 2013), and the Quarterly Operations and Maintenance Report for SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) Sub-slab Vapor Mitigation Systems (1st Quarter/2016) (FPM, July 2016). These documents are all available to the public in the administrative record file which is available to the public on the web at http://afcec.publicadmin-record.us.af.mil/Search.aspx**.** There are no specific enforcement actions or administrative orders pertaining to the SVI at these sites.

The source of contamination associated with the SD-052-02 Building 775 Site (Buildings 774 and 776) has not been identified, but solvent use in Building 774 is thought to be the primary source of trichloroethylene (TCE) contamination.

The source of contamination associated with the SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) originated from chlorinated solvent use. Buildings 785 and 786 are also known as Nosedocks 4 and 5 and were used as maintenance facilities for B-52 bombers until base closure in 1995. Chlorinated solvents were used in all nosedock facilities throughout their active period of use.

3 COMMUNITY PARTICIPATION

A proposed plan for SVI at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) (Air Force, August 2016), proposing SVI mitigation by horizontal sub-slab depressurization, was released to the public on August 19, 2016 as required by CERCLA § 117(a) and the NCP (40 Code of Federal Regulations [CFR] § 300.430(f)((f)(3). The document was made available to the public in the Information Repository available on-line at http://afcec.publicadmin-record.us.af.mil/Search.aspx**.**

The notice of the availability of these documents was published in the Rome Daily Sentinel Newspaper on August 18, 2016. A 30-day public comment period was held from August 19, 2016 to September 19, 2016 to solicit public input on the final Proposed Plan for the SVI at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786). During this period, the public was invited to review the Administrative Record and comment on the preferred alternative being considered.

In addition, Griffiss AFB hosted a public meeting on September 7, 2016 at the Griffiss Institute located at 725 Daedalian Drive, Rome, New York 13441. The date and time of the meeting was published in the Rome Daily Sentinel Newspaper. At the meeting, the Air Force provided data gathered at the sites, the preferred alternative, and the decision-making process. The meeting provided the opportunity for the community to comment officially on the plan. The public meeting was recorded and transcribed, and a copy of the transcript is included in Appendix B and was added to the Administrative Record.

During the proposed plan public comment public, no comments were received by the Technical Assistance for Public Participation Subcommittee on the selected remedy. These comments are provided in the Responsiveness Summary (Section 15.0). Once this ROD is signed, notice of availability will be published in the Rome Daily Sentinel Newspaper; and it will be available for public inspection and copying on-line at the AFCEC Administrative Record pursuant to 40 CFR 300.430(f)(6). Additional site documentation and general information concerning the environmental program at the former Griffiss AFB can also be found on the AFCEC administrative record website at http://afcec.publicadmin-record.us.af.mil/Search.aspx. Visit the website to inquire about the installation activities or obtain background information.

4 SCOPE AND ROLE OF OPERABLE UNIT

To date, remedies have been selected for 40 sites at the former Griffiss AFB. Two of these sites include the SD-052-02 Building 775 and SD-052-01 Apron 2 Chlorinated Plume Sites. The RODs for these sites were signed by the Air Force and EPA in March 2009 and selected the remedies for groundwater contamination. It was stated in these RODs, that SVI would be addressed separately. Therefore, this document has been prepared to provide the recommended action to address SVI potential associated with the contaminated groundwater at these sites. This is the final decision document scheduled for the former Griffiss AFB.

The former Griffiss AFB was included on the NPL in 1987 with a portion of the base being deleted from the NPL in 2009 (2,897 acres). The SD-052-02 Building 775 and SD-052-01 Apron 2 Chlorinated Plume Sites are among a number of sites administrated under the former Griffiss AFB IRP and are within the 655 acres remaining of the 3,552 acres initially on the NPL.

5 SITE CHARACTERISTICS

5.1 Groundwater Investigation/Remedy

5.1.1 SD-052-02 Building 775 Site (Buildings 774 and 776)

SD-052-02 Building 775 Site (Buildings 774 and 776) is associated with a trichloroethylene (TCE) contaminated groundwater plume. The Building 775 Site plume is located downgradient and south of former maintenance facilities in Buildings 774 and 776 and former fuel pump house Building 775. Solvent use in Building 774 is thought to be a primary source of contamination. Solvent use was widespread in these facilities in the 1950s, 1960s, and early 1970s. The contaminated groundwater is assumed to be the source of the contaminated soil vapors.

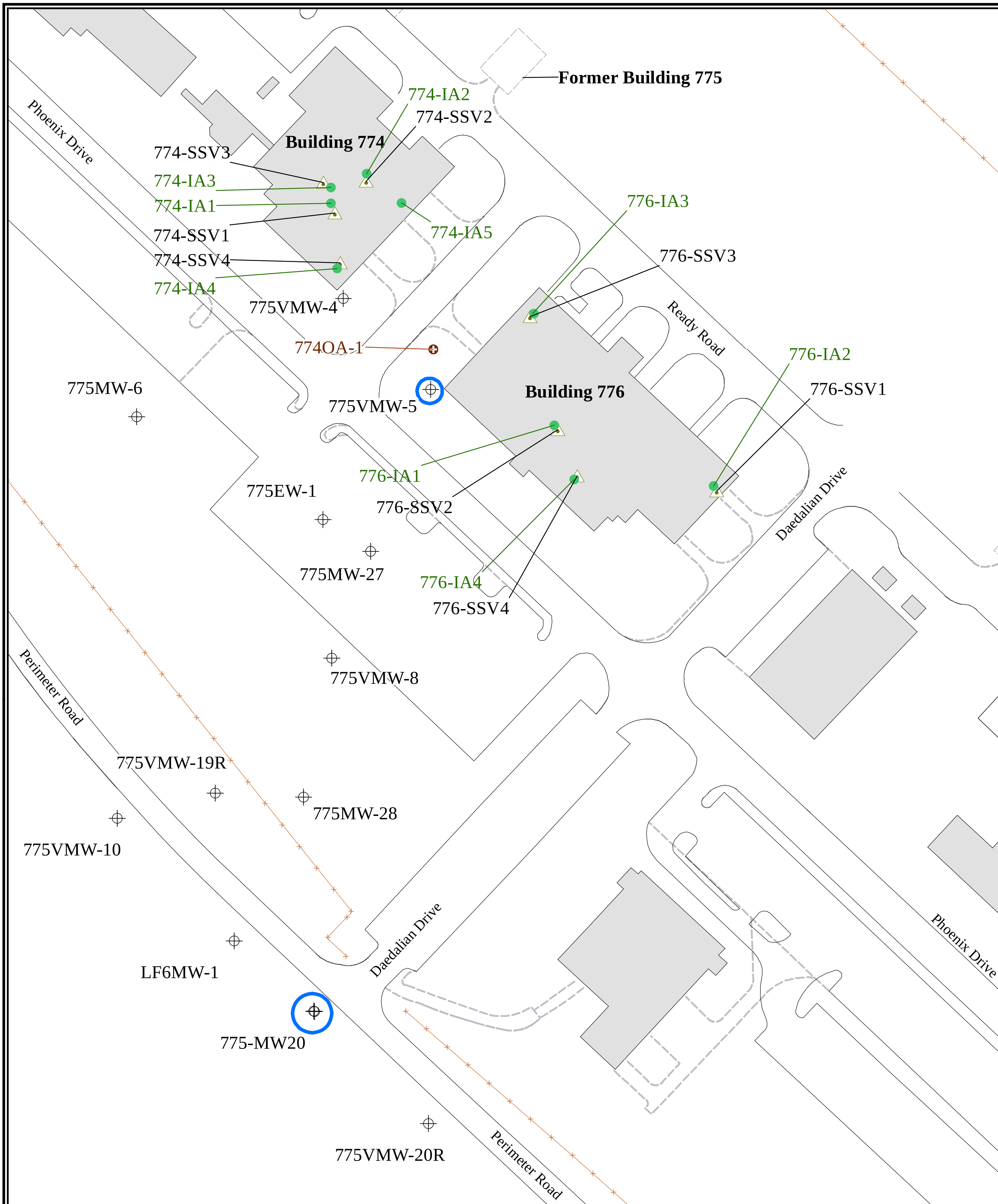
Groundwater sampling in September 2004 showed that monitoring well 775VMW-5, located near the corner of Building 776, is the only well near Buildings 774 and 776 that contains significant levels of TCE (99 microgram per liter (µg/L)). Most of the Building 775 plume appears to have migrated south toward Landfill 6. In the September 2004 sampling round, the maximum TCE concentration detected was 134 µg/L at well 775MW-20 (located near the leading edge of the plume adjacent to Perimeter Road). TCE was detected at 132 µg/L in well 775VMW-10, which is also located near the leading edge of the plume adjacent to Perimeter Road. The TCE exceedances at both 775MW-10 and -20 were detected in the bottom half of the sandy aquifer (screened intervals from 88 to 120 ft bgs). In November 2006, TCE exceedances were reported in eight monitoring wells 775MW-2, -5, -6, -8, -10, -20, -27, and -28, ranging from 5.76 to 82 µg/L.

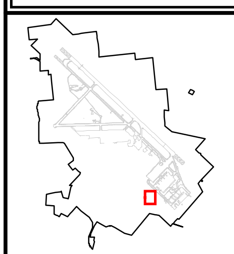
The groundwater remedy for the SD-52-02 (Building 775 Site) has been implemented in accordance with the On-Base Groundwater AOC ROD which was signed by the Air Force and EPA in March 2009. The selected remedy is a groundwater extraction system with discharge to an off-site treatment facility. The groundwater extraction system is designed to contain the contaminated plume (> 50 µg/L) and extract the contaminants from the aquifer. Initially, one extraction well (775EW-1) was installed but deemed inappropriate for groundwater extraction. It was replaced by a replacement extraction well (775EW-1R) and an additional extraction well (775EW-3). 775EW-1 was converted to a monitoring well. 775EW-1R and 775EW-3 were connected with a force main and the extracted contaminated groundwater is discharged to the existing sanitary sewer system for treatment at the City of Rome Water Pollution Control Facility.

The groundwater extraction and discharge system was started up on January 5, 2009. The system was fine tuned in January-March 2009 and has continued to operate since March 2009. The initial system design extraction pump rate of 4 gallons per minute (gpm) has decreased over the first year of operation and stabilized around 3.2 gpm. The size of the 50 µg/L TCE plume decreased significantly since 2006, and have remained stable during the 2009 through 2014 performance monitoring sampling events. Results from the most recent sampling event (2014) showed that the TCE concentration in the vicinity of the system was 55.4 J µg/L (775VMW-5). The groundwater standard for TCE is 5 µg/L (NYSDEC, June 1998). The J data qualifier indicates that the concentration is an estimate. The 2014 TCE plume and monitoring wells in the vicinity of Buildings 774 and 776 are illustrated on Figure 2.

5.1.2 SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786)

SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) is associated with a TCE contaminated groundwater plume (Figure 3). An RI was performed in 2002 and 2003 in which two chlorinated plumes (referred to as the southern and northern plumes) were delineated at Apron 2 and the surroundings areas. The three primary contaminants present in the groundwater





Key to Features

- Monitoring Well
- Indoor Air Sample Location
- Outdoor Air Sample Location
- Sub-Slab Vapor
- Existing Road
- Removed Road
- Demolished Facility
- Existing Facility
- TCE 50 µg/L September 2014

Figure 2
Buildings 774 and 776
2006 and 2008
SVI Sample Locations

0 50 100 200
Feet

N

UNITED STATES AIR FORCE
GRIFFISS AIR FORCE BASE
ROME, NEW YORK

FPM Remediations, Inc

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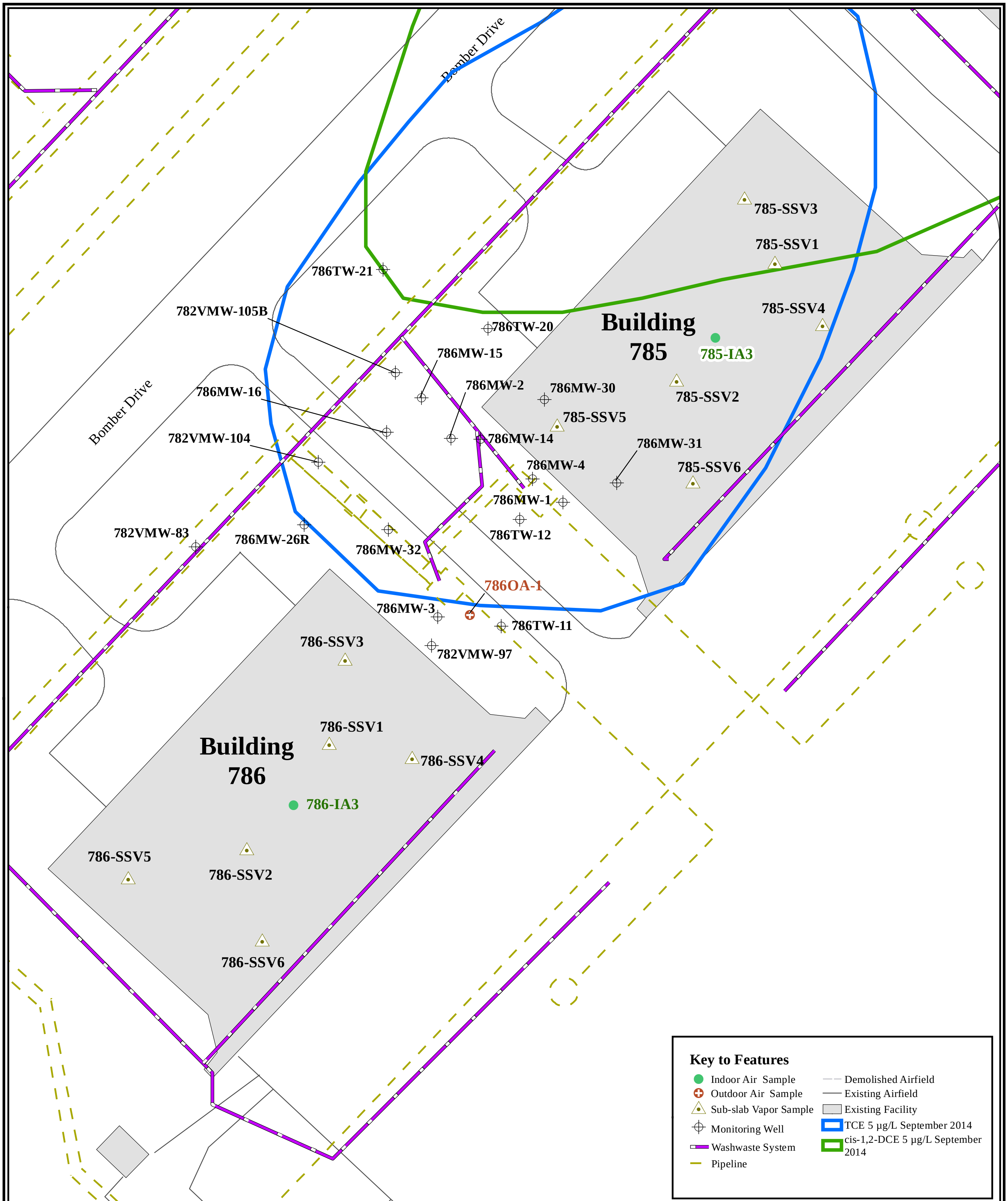


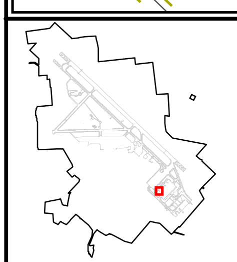


Figure 3
Building 785 and 786
2006 and 2008 SVI Sample Locations

0 25 50 100
Feet

N

UNITED STATES AIR FORCE
GRIFFISS AIR FORCE BASE
ROME, NEW YORK

FPM Remediations, Inc

Y:\GIS_Projects\Griffiss\Projects\1015-11-01\SVI\SVI Proposed Plan\Figure 3.mxd

that exceed NYSDEC Class GA Groundwater Standards are TCE and its breakdown products cis-1,2 dichloroethylene (DCE) and vinyl chloride (VC). The source of the contamination is assumed to be extended use of chlorinated solvents in the nosedock facilities (Buildings 782 through 786), with potential leaks due to floor drains, sewer lines, and oil water separators.

Several petroleum contaminated plumes originating from the Apron 2 fueling system are present and commingle with the southern chlorinated groundwater plume in the area. Significant reductive dechlorination is occurring and TCE exceedances are present only at the source (near Building 785). TCE is almost completely degraded to cis-1,2 DCE and VC downgradient of the source and it appears that no significant source of TCE remains at the site. Recent sampling data (2014) for TCE, cis-1,2 DCE, and VC showed maximum concentrations of 11.6 µg/L, 51 µg/L, and 35.6 µg/L, respectively. The groundwater standards for TCE, cis-1,2 DCE, and VC are 5 µg/L, 5 µg/L, and 2 µg/L, respectively (NYSDEC, June 1998). The 2014 TCE and cis-1,2 DCE plumes in the vicinity of Buildings 785 and 786 are illustrated on Figure 4. Several long-term monitoring (LTM) programs for petroleum and performance monitoring for chlorinated groundwater contamination are ongoing at Apron 2 to monitor and track contamination. The groundwater remedy for the SD-52-01 Apron 2 Chlorinated Plume Site has been implemented in accordance with the On-Base Groundwater AOC ROD which was signed by the Air Force and EPA in March 2009. The selected remedy is monitoring natural attenuation using the ongoing physical, chemical, and natural biological processes that reduce the contaminants within the aquifer. Based on previous investigations and studies, it has been determined that natural attenuation is evident at the Apron 2 Chlorinated Plume Site. Currently, thirteen monitoring wells and three surface water sampling locations are sampled. Target VOC concentrations remain stable or are decreasing at Apron 2.

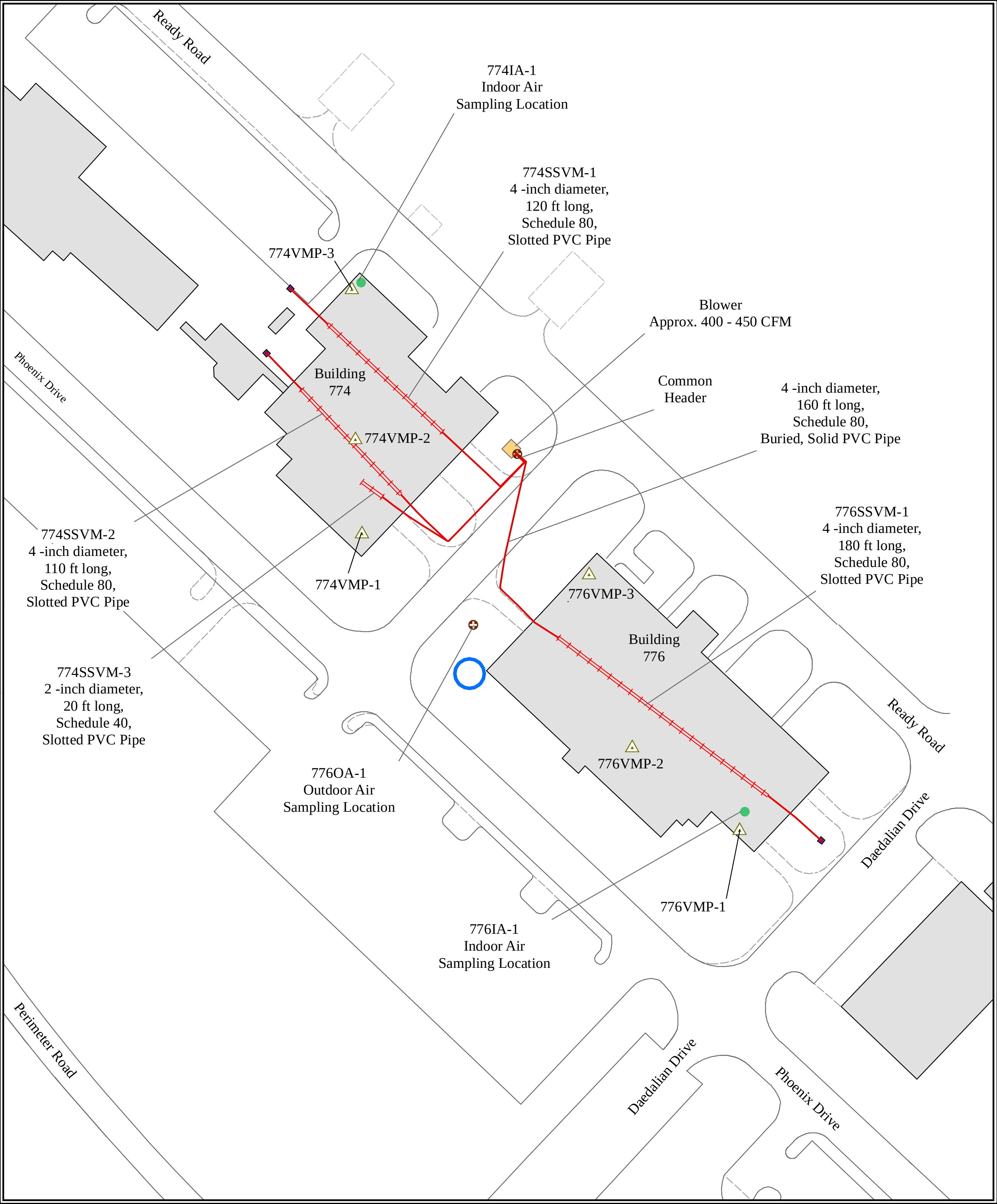
5.2 SVI Investigation

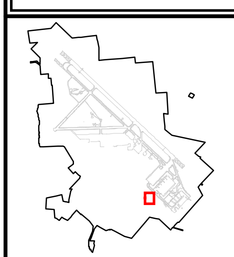
5.2.1 SD-052-02 Building 775 Site (Buildings 774 and 776)

In September 2006, E&E performed an SVI evaluation consisting of sub-slab vapor samples from Buildings 774 and 776. The results indicated that chloroform and TCE were present at concentrations above their respective Air Force screening levels. The indoor air samples collected from both buildings indicated that these same contaminants were present but at levels below the screening values.

E&E performed an additional SVI survey at Buildings 774 and 776 between October 2006 and February 2007. As part of this survey:

- Four soil vapor samples were collected from open grassy areas south of the buildings towards Perimeter Road (Figure 2).
- Two sub-slab vapor samples collected in each Buildings 774 and 776.
- Two indoor air samples collected in each building, and
- One outdoor air sample collected between the two buildings.





Key to Features

- Indoor
- Outdoor
- SubSlab Vapor
- Horizontal Well Screen
- Horizontal Well Riser
- Existing Road
- Removed Road
- TCE 50 µg/L September 2014
- SVE System
- Entrance/Exit Pit
- Demolished Facility
- Existing Facility

Figure 4
Buildings 774 and 776
SSVM System Layout

0 50 100 200
Feet

N

UNITED STATES AIR FORCE
GRIFFISS AIR FORCE BASE
ROME, NEW YORK

FPM Remediations, Inc

Y:\GIS_Projects\Griffiss\Projects\1015-11-01\SVI\SVI Proposed Plan\Figure 4.mxd

The results indicated that the soil vapor samples showed TCE detections up to 70 microgram per cubic meter (µg/m^3) (775-SV-03), the sub-slab samples showed TCE concentrations up to 1,700 µg/m^3 at Building 774 and 3,000 µg/m^3 at Building 776. The indoor samples showed TCE concentrations up to 2.4 µg/m^3 in Building 774 and 4.4 µg/m^3 in Building 776. The AF screening levels for sub-slab vapor was 409 µg/m^3 and 41 µg/m^3 in indoor air.

After the initial SVI survey, a meeting was held between the Air Force, Air Force Institute for Operational Health, NYSDEC, NYSDOH, and the EPA on December 13, 2007 to discuss the SVI survey findings. During this meeting, an agreement was reached that these buildings required additional investigation to confirm the 2006 survey results. It should be noted that in the meeting it was decided that chloroform has been determined not to be a Contaminant of Concern (COC) (FPM, April 2008). A subsequent SVI investigation was performed by FPM in April/May 2008. During this survey the following samples were collected:

- Four sub-slab vapor samples from beneath Buildings 774 and 776 (each),
- Four indoor air samples from within each building, and
- One outdoor background air sample.

The indoor air TCE concentrations reported for Building 774 during the April 2008 sampling event were two orders of magnitude higher than those reported during the 2006 sampling event. Concentrations that exceeded screening criteria ranged from 236 µg/m^3 (774IA-4) to 559 µg/m^3 (774IA-2). Further investigation revealed, that prior to this sampling event, building renovations were performed which included removal of old carpet glue using solvents. Indoor air results for Building 776 were comparable to the previous results. Indoor and outdoor air samples were recollected from Building 774 in May 2008 due to the apparently skewed results. All of the May 2008 results indicated that indoor air TCE concentrations were comparable to the 2006 results. The indoor/outdoor sampling results for Building 774 and 776 are provided in Table 1 and 2, respectively.

The sub-slab TCE vapor results for Building 774 were within the same order of magnitude as those reported in 2006 with two exceedances of 490 µg/m^3 and 590 µg/m^3 at locations 774SSV-1 and 774SSV-2, respectively. The sub-slab vapor concentrations reported in Building 776 were lower than those reported in 2006 and did not exceed initial screening levels. The sub-slab vapor sampling results for Building 774 and 776 are provided in Table 1 and 2, respectively.

The SVI investigation at SD-052-02 Building 775 Site (Buildings 774 and 776) was initially performed utilizing NYSDOH guidance for assessing the soil vapor at the site. EPA guidance was used in later phases of the investigations including the mitigation phase which is discussed in Section 5.4.

5.2.2 SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786)

E&E performed an initial SVI survey at Buildings 785 and 786 between October 2006 and February 2007. As part of this investigation the following samples were collected (Figure 4):

Table 1
Building 774 Detected Indoor, Outdoor Air, and Sub-slab Vapor Analytical Results (2006 and 2008)

Sample Location	**774IA-1**			**774IA-2**			**774IA-3**		**774IA-4**		**774IA-5**	**774OA-1**			**774SSV-1**		**774SSV-2**		**774SSV-3**	**774SSV-4**
Sample ID	**774-IA1**	**774IA1BB**	**774IA1CA**	**774-IA2**	**774IA2BB**	**774IA2CA**	**774IA3BB**	**774IA3CA**	**774IA4BB**	**774IA4CA**	**774IA5CA**	**774-OA1**	**774OA1BB**	**774OA1CA**	**774-SSV1**	**774SSV1BB**	**774-SSV2**	**774SSV2BB**	**774SSV3BB**	**774SSV4BB**
Sample Type	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Outdoor**	**Outdoor**	**Outdoor**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**
Sample Date	**12/20/2006**	**4/15/2008**	**5/29/2008**	**12/20/2006**	**4/15/2008**	**5/29/2008**	**4/15/2008**	**5/29/2008**	**4/15/2008**	**5/29/2008**	**5/29/2008**	**12/20/2006**	**4/15/2008**	**5/29/2008**	**10/24/2006**	**4/15/2008**	**10/24/2006**	**4/15/2008**	**4/15/2008**	**4/15/2008**
Sample Depth (ft above ground - Indoor and Outdoor and ft bgs for SSV)	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**1**	**1**	**1**	**1**	**1**	**1**
Sample Collection Duration (hr)	**8**	**12**	**12**	**8**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**8**	**8**	**8**	**8**	**12**	**8**	**12**	**12**	**12**
Volatiles (TO-15) in µg/m^3																				
cis-1,2-dichloroethene	U	1.57 J	0.685	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.64	0.60
trichloroethylene (tce)	2.4	347*	3.99*	3.4*	559*	4.21*	389*	4.7*	236*	2.13	6.61*	U	0.492	U	1700*	490*	810*	590*	66*	69*
vinyl chloride	U	0.13 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:

J - The analyte was positively identified, but the quantitation is an approximation.

U - Not detected.

µg/m^3: microgram per cubic meter.

Exceedance of the Air Force Industrial/Commercial SVI Screening Level

*- TCE above EPA Industrial Regional Screening Level (3 µg/m3)

Table 2
Building 776 Detected Indoor, Outdoor Air, and Sub-slab Vapor Analytical Results (2006 and 2008)

Sample Location	**776IA-1**		**776IA-2**		**776IA-3**	**776IA-4**	**776SSV-1**		**776SSV-2**		**776SSV-3**	**776SSV-4**
Sample ID	**776-IA1**	**776IA1BB**	**776-IA2**	**776IA2BB**	**776IA3BB**	**776IA4BB**	**776-SSV1**	**776SSV1BB**	**776-SSV2**	**776SSV2BB**	**776SSV3BB**	**776SSV4BB**
Sample Type	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**Indoor**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**
Sample Date	**12/20/2006**	**4/15/2008**	**12/20/2006**	**4/15/2008**	**4/15/2008**	**12/20/2006**	**10/24/2006**	**4/15/2008**	**10/24/2006**	**4/15/2008**	**4/15/2008**	**4/15/2008**
Sample Depth (ft above ground - Indoor and Outdoor and ft bgs for SSV)	**5**	**5**	**5**	**5**	**5**	**5**	**1**	**1**	**1**	**1**	**1**	**1**
Sample Collection Duration (hr)	**8**	**12**	**8**	**12**	**12**	**12**	**8**	**12**	**8**	**12**	**12**	**12**
Volatiles (TO-15) in µg/m³												
cis-1,2-dichloroethene	U	U	U	U	U	U	U	U	U	U	0.64	U
trichloroethylene (tce)	4.4*	3.28 M*	2.9	2.35	2.51	2.62	3000*	6.9	700*	110*	120*	230*
vinyl chloride	U	U	U	U	U	U	U	U	U	U	U	U

Notes:

M - A matrix effect was reported in the sample.

U - Not detected.

µg/m³: microgram per cubic meter.

Exceedance of the Air Force Industrial/Commercial SVI Screening Levels

*- TCE above EPA Industrial Regional Screening Level (3 µg/m3)

- No soil vapor samples were collected in October 2006 from around Buildings 785 and 786 because the soil was saturated from the ground surface to more than 8 ft bgs and NYSDOH guidelines suggest that no sample be collected under these conditions.
- Ten sub-slab vapor samples and one duplicate sample were collected in October 2006. Two samples from each building were collected from beneath the concrete floors of Buildings 785 and 786 (two samples were collected due to the large size of each of the buildings). The samples were centrally located within the buildings because the center of the building typically exhibits the highest levels of sub-slab vapor.
- Two indoor air samples were collected in the same locations as the sub-slab samples previously collected.
- One outdoor air sample was collected between Buildings 785 and 786.

The results indicated that the sub-slab samples showed TCE concentrations up to 11,000 µg/m^3 at Building 785 and 81,000 µg/m^3 at Building 786. The indoor samples showed TCE concentrations up to 2.72 µg/m^3 in Building 785 and 0.43 µg/m^3 in Building 786.

Several other VOCs (e.g. benzene) were reported in the sub-slab vapor and indoor air samples, but were either detected below screening levels, detected in the outdoor air sample, or not deemed to be a COC for this site. As part of the survey, building use and product inventories were performed per the SVI Sampling Work Plan (FPM, April 2008). It was noted that several pallets which held drums of motor oil, paint cans, buckets, and pails were located on the southwestern side of Building 785. In Building 786, a forklift, compressed gas and propane cylinders, a container of motor oil, and a bucket of hydraulic oil were reported. A hand-held parts per billion (ppb)-RAE meter was used to measure total VOC concentrations at these locations where readings ranged from 0 to 2,800 ppb. The highest concentration was detected in Building 785 near the pallets.

FPM performed a follow-up SVI investigation at Buildings 785 and 786 in April 2008 to confirm the results of the 2006 SVI survey. During this follow-up the following samples were collected (Figure 3):

- Six sub-slab vapor samples from each buildings,
- One indoor air sample from each building, and
- One outdoor air sample from between Buildings 785 and 786.

The indoor air TCE concentrations reported for Building 785 during this sampling round were similar in magnitude as those reported in the 2006 sampling round. A low detection of TCE (0.655 µg/m^3 at 785IA-3) and several low petroleum detections were reported. Indoor air results for Building 786 were comparable to the previous results and no TCE or daughter products were detected. The indoor/outdoor sampling results for Building 785 and 786 are provided in Table 3 and 4, respectively.

Sub-slab vapor results for Building 785 were one to two orders of magnitude lower than the previous results. However, there was one exceedance that was reported for sampling location 785-SSV6 (2,200 µg/m^3). Sub-slab vapor results for Building 786 were lower but the same order

Table 3

Building 785 Detected Indoor, Outdoor Air, and Sub-slab Vapor Analytical Results (2006 and 2008)

Sample Location	**785IA-1**	**785IA-2**	**785IA-3**	**786OA-1**		**785SSV-1**		**785SSV-2**		**785SSV-3**	**785SSV-4**	**785SSV-5**	**785SSV-6**
Sample ID	**785-IA1**	**785-IA2**	**785IA3BB**	**786-OA1**	**786OA1BB**	**B785-SSV1**	**785SSV1BB**	**B785-SSV2**	**785SSV2BB**	**785SSV3BB**	**785SSV4BB**	**785SSV5BB**	**785SSV6BB**
Sample Type	**Indoor**	**Indoor**	**Indoor**	**Outdoor**	**Outdoor**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**
Sample Date	**12/20/2006**	**12/20/2006**	**4/17/2008**	**12/20/2006**	**4/18/2008**	**10/24/2006**	**4/17/2008**	**10/24/2006**	**4/17/2008**	**4/17/2008**	**4/17/2008**	**4/17/2008**	**4/17/2008**
Sample Depth (ft above ground - Indoor and Outdoor and ft bgs for SSV)	**5**	**5**	**5**	**5**	**5**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Sample Collection Duration (hr)	**12**	**12**	**12**	**12**	**12**	**8**	**12**	**8**	**12**	**12**	**12**	**12**	**12**
Volatiles (TO-15) in µg/m^3													
1,2,4-trimethylbenzene	NA	NA	1.30	U	0.949	NA	1.9 M	NA	2.3 M	2.9 M	4 M	3.4 M	9 M
1,3,5-trimethylbenzene	NA	NA	0.650 F	U	U	U	0.70 F	U	0.9 M	1.1 M	1.6 M	1.6 M	3.5 M
benzene	1.1	1.1	0.617	0.96	0.617	U	10	15	3.5 J	17	19 M	14	20
cis-1,2-dichloroethene	U	U	U	U	U	75	13	U	0.69 J	0.48 F	14 M	0.52 F	56
ethylbenzene	NA	NA	0.441 F	NA	U	U	1 M	U	1.9 M	1.8 M	2.4 M	3 M	4 M
m,p-xylene (sum of isomers)	NA	NA	1.28 F	NA	0.883 F	U	2.7 M	U	4.4 M	6.3 M	8.8 M	10 F	12 F
Naphthalene	NA	NA	1.33	NA	U	NA	1.2 M	NA	1.9 M	1.2 M	1.4 M	1.8 M	1.6 M
o-xylene	NA	NA	0.485 F	NA	0.441 F	U	1.1 M	U	1.6 M	1.9 M	2.8 M	4.9 M	3.3 M
tetrachloroethylene (pce)	U	U	U	U	U	U	U	U	U	U	U	U	U
toluene	NA	NA	2.72	NA	1.49	60	5.5 M	13	5.1 M	12 M	18 M	64	28 M
trichloroethylene (tce)	U	U	0.655	U	U	11000*	110*	2300*	430 J*	220*	11 M	180*	2200*
vinyl chloride	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:

U - Not detected.

F - The analyte was detected above the method detection limit (MDL), but below the reporting limit (RL).

J- The analyte was positvely identified, but the quantitation is an approximation.

NA- Not Available

Exceedance of the Air Force Industrial/Commercial SVI Screening Levels

*- TCE above EPA Industrial Regional Screening Level (3 µg/m3)

Table 4
Building 786 Detected Indoor, Outdoor Air, and Sub-slab Vapor Analytical Results (2006 and 2008)

Sample Location	786IA-1	786IA-2	786IA-3	786OA-1		786SSV-1		786SSV-2		786SSV-3	786SSV-4	786SSV-5	786SSV-6
Sample ID	**786-IA1**	**786-IA2**	**786IA3BB**	**786-OA1**	**786OA1BB**	**B786-SSV1**	**786SSV1BB**	**B786-SSV2**	**786SSV2BB**	**786SSV3BB**	**786SSV4BB**	**786SSV5BB**	**786SSV6BB**
Sample Type	**Indoor**	**Indoor**	**Indoor**	**Outdoor**	**Outdoor**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**	**SSV**
Sample Date	**12/20/2006**	**12/20/2006**	**4/18/2008**	**12/20/2006**	**4/18/2008**	**10/24/2006**	**4/18/2008**	**10/24/2006**	**4/18/2008**	**4/18/2008**	**4/18/2008**	**4/18/2008**	**4/18/2008**
Sample Depth (ft above ground - Indoor and Outdoor and ft bgs for SSV)	**5**	**5**	**5**	**5**	**5**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Sample Collection Duration (hr)	**8**	**8**	**12**	**12**	**12**	**8**	**12**	**8**	**12**	**12**	**12**	**12**	**12**
Volatiles (TO-15) in µg/m^3													
1,2,4-trimethylbenzene	NA	U	0.749	U	0.949	NA	3.9 M	NA	4.8 M	4.5 M	4.2 M	170	4.8 M
1,3,5-trimethylbenzene	NA	U	U	U	U	U	1.6	U	1.8 M	1.7 M	1.5 M	58	2 M
benzene	1.2	1.2	0.747	0.96	0.617	U	29	24 J	21	21	35	36 M	16
cis-1,2-dichloroethene	U	U	U	U	U	480	230	U	12	1.2 M	U	3.1 M	5.4
ethylbenzene	NA	NA	U	NA	U	U	2.3 M	U	3.1 M	2.3 M	2.9 M	29 M	2.3 M
m,p-xylene (sum of isomers)	NA	NA	0.750 F	NA	0.883 F	U	9 M	U	8.4 F	8.9 M	8.4 F	91 M	9.2 M
Naphthalene	NA	NA	1.01 J	NA	U	NA	1.3 M	NA	2.1 M	2.6 M	1.2 M	27 M	1.5 M
o-xylene	NA	NA	U	NA	0.441 F	U	3 M	U	3.9 M	2.8 M	3.8 M	57 M	3 M
tetrachloroethylene (pce)	U	0.896 F	U	U	U	2200	70	U	0.97 F	U	U	57 M	23
toluene	NA	NA	1.92	NA	1.49	U	21	U	14	12	20	75 M	15
trichloroethylene (tce)	0.43 J	U	U	U	U	81000*	19,000 J*	4,700 J*	1500*	69*	320*	3600*	6,500 M*
vinyl chloride	U	U	U	U	U	U	M	U	U	U	U	U	U

Notes:
U - Not detected.
F - The analyte was detected above the method detection limit (MDL), but below the reporting limit (RL).
J- The analyte was positvely identified, but the quantitation is an approximation.
NA- Not Available
µg/m^3: microgram per cubic meter.
Exceedance of the Air Force Industrial/Commercial SVI Screening Levels
*- TCE above EPA Industrial Regional Screening Level (3 µg/m3)

of magnitude as the previous results. TCE concentrations ranged from 69 µg/m^3 at 786SSV-3 to 19,000 µg/m^3 at 786SSV-1 (previous concentration at 786SSV-1 was 81,000 µg/m^3). In total, four TCE exceedances were reported at sampling locations 786-SSV1, -SSV2, -SSV5, and -SSV6. The sub-slab vapor sampling results for Building 785 and 786 are provided in Table 3 and 4, respectively.

The SVI investigation at SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) was initially performed utilizing NYSDOH guidance for assessing the soil vapor at the site. EPA guidance was used in later phases of the investigations including the mitigation phase which is discussed in Section 5.4.

5.3 Feasibility Study

The purpose of the FS was to evaluate SVI mitigation alternatives for Buildings 774, 776, 785, and 786. SVI mitigation prevents the potential for soil vapor contaminants from entering the buildings and/or otherwise mitigates the vapors upon their entry for the protection of indoor occupants. SVI mitigation evaluation and implementation was performed in parallel to, but distinct from, the ongoing source remediation. All 2006 and 2008 SVI investigation and evaluation results were comprehensively reviewed and evaluated during the preparation of the 2009 FS (FPM, February 2010). Based on the evaluation results of the FS, the preferred alternative is horizontal sub-slab depressurization. The FS is located on the AFCEC administrative record website at http://afcec.publicadmin-record.us.af.mil/Search.aspx.

5.4 Interim Response Action

Based on the presence of elevated TCE concentrations in sub-slab vapors and the findings of the FS, the preferred alternative was implemented as an ongoing IRA at Buildings 774, 776, 785, and 786 to assess the effectiveness of horizontal sub-slab depressurization.

5.4.1 SD-052-02 Building 775 Site (Buildings 774 and 776)

A sub-slab vapor mitigation (SSVM) system, horizontal sub-slab depressurization, was installed at SD-052-02 Building 775 Site (Buildings 774 and 776) in Spring 2011 (FPM, February 2013). The system is composed of four horizontal wells as shown in Figure 4.

5.4.1.1 SSVM System Components

The SSVM system is composed of three horizontal wells for Building 774 (774SSVM-1 -2, and -3) and one horizontal well for Building 776 (776SSVM-1). The horizontal wells are illustrated on Figure 4. The depths of the horizontal wells range from 6 ft to 8 ft bgs with screen lengths ranging from 20 ft to 180 ft long. The horizontal extraction wells are connected in line with a regenerative blower capable of achieving a maximum flow rate of 600 standard cubic feet per minute (scfm) and a maximum vacuum of 106 inches of water gauge (in w.g.). The regenerative blower is connected in line with a vapor-after-treatment system comprising of two air purification canisters each containing granular activated carbon (GAC). The GAC is used to remove chlorinated solvents in the vapor phase. The calculated life span of GAC is approximately four months (FPM, February 2013).

5.4.1.2 Vapor Monitoring Points

The sub-slab vapor monitoring points (VMPs) were strategically placed to monitor effective Radius of Influence (ROI) and vapor transport and mitigation. In Building 774, three sub-slab VMPs were installed; 774VMP-1, -2, and -3 with one interval screened less than a foot beneath the sub-slab. Building 776 also has three sub-slab VMPs: 776VMP-1, -2 and -3. The VMPs are located from 25 ft to 45 ft off axis of the horizontal wells. All VMPs are illustrated on Figure 4.

5.4.1.3 Baseline and Start-up Vapor Monitoring Point Sub-Slab Sampling

A baseline sample event was conducted prior to SSVM system start-up at each newly installed VMP location. At Building 774, TCE concentrations were reported above the 2016 industrial EPA RSL[1] of 30 $\mu g/m^3$ at 774VMP-1, -2, and -3 (580 $\mu g/m^3$, 2,900 $\mu g/m^3$, and 300 $\mu g/m^3$, respectively). The EPA RSL is associated with a cancer risk of 1 X 10^{-6} or one-in-a-million. At Building 776, TCE concentrations were reported above the 2016 EPA RSLs. 776VMP-2 and -3 showed TCE in sub-slab vapor at 300 $\mu g/m^3$ and 360 $\mu g/m^3$, respectively. The concentrations are also above the non-cancer Hazard Quotient (HQ) = 1 of 88 $\mu g/m^3$.

In addition to sub-slab sampling, indoor and outdoor air quality samples were also collected. The Building 774 indoor air concentration for TCE was 4.4 $\mu g/m^3$ while the indoor air concentration for TCE in Building 776 was 3.6 $\mu g/m^3$. Both concentrations were above the 2016 industrial EPA RSL for indoor air at 3 $\mu g/m^3$ (EPA, May 2016). The EPA RSL is associated with a cancer risk of 1 X 10^{-6} or one-in-a-million. One outdoor air sampled was collected between the two buildings where the result for TCE was 0.98 $\mu g/m^3$, which is within the acceptable EPA risk range. The concentrations meet the non-cancer HQ = 1 of 8.8 $\mu g/m^3$.

5.4.1.4 Ongoing Operations and Maintenance - Building 774 and 776

The Building 774 and 776 SSVM system has operated since June 2011. Operation and Maintenance (O&M) includes weekly system component readings (system temperature, flow, vacuum and motor status), semi-annual VMP vacuum measurements, and GAC disposal and replacement every four months. Indoor and outdoor air sampling, sub-slab vapor sampling, and influent sampling are conducted semi-annually during the heating and cooling months (CAPE/FPM, July 2016). Semi-annual monitoring results from 2011 to 2016 show a decrease in TCE sub-slab vapor and indoor air concentrations. TCE concentrations have decreased from 410 $\mu g/m^3$ to 1.9 $\mu g/m^3$ at 774VMP-1, 84 $\mu g/m^3$ to 0.61 J $\mu g/m^3$ at 774VMP-2, 11 $\mu g/m^3$ to non-detect[2] at 774VMP-3, 38 $\mu g/m^3$ to non-detect at 776VMP-1, 3.8 $\mu g/m^3$ to non-detect at 776VMP-2, and 10 $\mu g/m^3$ to 2.9 $\mu g/m^3$ at 776VMP-3. The J data qualifier indicates that the concentration is an estimation.

[1] Sub-slab RSLs calculated using the EPA Vapor Intrusion Screening Level Calculator (VISL, November 2015).
[2] The detection limit for TCE is 0.049 $\mu g/m^3$

In addition, no TCE was detected in indoor air samples, from 2011 through 2016, above the 2016 industrial EPA RSL for indoor air of 3 μg/m^3. All sub-slab vapor, indoor air, and outdoor air sampling results are presented in Table 5 and influent air sampling results are presented in Table 6. Figures 5 and 6 show the trend for sub-slab results at Buildings 774 and 776 since the start-up of the SSVM system. All indoor and outdoor air concentrations were within an acceptable range and did not pose any unacceptable risk to building occupants (CAPE/FPM, July 2016).

5.4.2 SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786)

The SSVM system, horizontal sub-slab depressurization, was installed at the SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) in Winter and Spring 2011 (FPM, February 2013). The system is shown in Figure 7.

5.4.2.1 SSVM System Components

The Building 785 and 786 system is composed of two horizontal wells. The horizontal well for Building 786 (786SSVM-1) was constructed of a 160 ft screen at a depth of 10 ft bgs. The horizontal well for Building 785 (785SSVM-1) was constructed of a 140 ft screen at a depth of 8 ft bgs. The horizontal extraction wells (785SSVM-1 and 786SSVM-1) are connected in line with a regenerative blower, including all blower components. The blower capacity is capable of achieving a maximum flow rate of 420 scfm and a maximum vacuum of 110 in w.g. The regenerative blower is connected in line with a vapor-after-treatment system comprising of two air purification canisters each containing 140 pounds of GAC. The GAC is used to remove chlorinated solvents in the vapor phase. The calculated life span of GAC is approximately four months (FPM, February 2013).

5.4.2.2 Vapor Monitoring Points

The VMPs were strategically placed to monitor effective ROI and vapor transport and mitigation. At Building 786, 786VMP-1, -2 and -3 are respectively 15 ft, 30 ft and 45 ft off the 786SSVM-1 well axis. At Building 785, 785VMP-2, -4, and -5 are respectively 15 ft, 30 ft, and 60 ft off the well axis. The VMPs for both horizontal wells contain three intervals of depth, a shallow (2 to 2.5 ft bgs), a medium (5 to 5.5 ft bgs) and a deep (10 to 10.5 ft bgs).

5.4.2.3 Baseline and Start-up Vapor Monitoring Point Sub-Slab Sampling

A baseline sample was collected prior to SSVM system start-up at each newly installed VMP location. At Building 785, TCE concentrations were reported above the industrial EPA RSL (30 μg/m^3) at 785VMP-4 and -5 (720 μg/m^3 and 610 μg/m^3, respectively). The EPA RSL is associated with a cancer risk of 1 X 10^{-6} or one-in-a-million. At Building 786, TCE concentrations were reported above the industrial EPA RSL at 786VMP-1, -2, and -3 (4,900 μg/m^3, 740 μg/m^3, and 2,200 μg/m^3, respectively). The concentrations are also above the non-cancer HQ=1 of 88 μg/m^3. In addition to sub-slab sampling, indoor and outdoor air quality samples were also collected. No indoor or outdoor air results at Buildings 785 and 786 were above the industrial EPA RSL.

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location			**774VMP-1**											
Sample ID	**Sub-slab Vapor Screening Level* (µg/m³)**	**Indoor Air Screening Level* (µg/m³)**	**774VMP0101AA**	**774VMP0101AB**	**774VMP0101AC**	**774VMP0101AD**	**774VMP0101AG**	**774VMP0101HA**	**774VMP0101IA**	**774VMP0101JA**	**774VMP0101KA**	**774VMP0101MA**	**774VMP0101NA**	**774VMP0101PA**
Sample Type			**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**
Sample Date			**4-May-2011**	**24-Aug-2011**	**21-Oct-2011**	**25-Jan-2012**	**6-Aug-2012**	**21-Feb-2013**	**8-Aug-2013**	**30-Jan-2014**	**17-Jul-2014**	**22-Jan-2015**	**31-Aug-2015**	**3-Feb-2016**
Sample Depth (ft bgs / ags)			**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Sample Collection Duration (hr)			**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Volatiles (TO-15) in µg/m³														
1,1,1-trichloroethane	220,000	22,000	U	U	1.1	U	U	22,000	U	0.84 J	U	0.2 J	U	0.29 J
1,1-dichloroethane	77	7.7	0.53 J	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	U	U	U	U	U	0.27 J	U	U
1,2,4-trimethylbenzene	310	31	6.7	3.2	U	12	1.8	1.3 J	U	U	U	0.35 J	1.8	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	0.37 J	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	2.5	0.9	U	3.2 J	0.47 J	0.52 J	U	U	U	U	0.49 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	1.4 J	0.40 J	U	U	U	U	U	0.65 J	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	U	0.31 J	U	U	0.17 J	1 J	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	U	1.9	U	2.6 J	2.2	15	1.1	U	U	U	0.18 J	U
4-ethyltoluene	NA	NA	4.6	1.2	U	3.2 J	0.56 J	0.26 J	U	U	U	0.14 J	0.52 J	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	0.28 J	U	U	U	U	U	0.81 J	U
acetone	1,400,000	140,000	54	31	18	64	30 B	86	28	43 J	U	64	20	22
benzene	16	1.6	1.6	4.3	U	U	0.44 J	1.3	0.64	0.49 J	U	0.89	0.43 J	0.45 J
carbon disulfide	31,000	3,100	U	0.66	U	U	U	0.42 J	1.3 J	U	U	0.89 J	9	0.71 J
carbon tetrachloride	20	2	1	0.70 J	U	U	0.50 J	0.76 J	0.71 J	0.55 J	U	0.57 J	0.52 J	0.39 J
chlorobenzene	2,200	220	U	0.51 J	U	U	U	U	0.15 J	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	18	9.1	U	U	0.38 J	U	0.42 J	0.82 J	U	U	0.49 J	U
chloromethane	3,900	390	3.5	U	U	U	1.1	2.1	1.2	1.5	U	1.3	1.1	0.95 J
cis-1,2-dichloroethene	NA	NA	0.89	0.77	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	1.1 J	U	U	0.42 J	U	U	U	0.49 J	U
cyclohexane	260,000	26,000	4.8	7.8	2.4	U	2.3	18	0.91	1.1	U	1.1	0.59 J	1.3
ethyl acetate	3,100	310	U	U	0.77 J	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	1.4	2.8	U	4.1 J	0.95	1.8	0.97	U	U	0.25 J	6.2	0.22 J
freon 11 (trichlorofluoromethane)	31,000	3,100	31	19	2.0	1.9 J	2.3	2 J	3.7	2.4	15 J	1.6	2.1	5.3
freon 113 (freon TF)	1,300,000	130,000	U	0.78 J	U	U	0.63 J	0.65 J	0.50 J	0.62 J	U	0.97 J	0.54 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.1	2.8	2.5	2.4 J	2.8	3.4 J	2.3 J	3.1	2.8 J	2.5	2.3 J	1.7 J
freon 22	2,200,000	220,000	NA	NA	NA	300	83	7.3 J	17	8.2	1100	5.1	U	3.5
heptane	NA	NA	U	3.7	U	U	0.68 J	18	0.57 J	0.51 J	U	0.44 J	U	0.51 J
hexane	31,000	3,100	U	7.9	U	5.1	1.2	27	0.67 J	0.71	U	0.51 J	0.21 J	0.5 J
isopropyl alcohol	NA	NA	U	U	2.8	17 J	22	65	15	4.0 J	9.0 J	13	7.4 J	4.5 J
m,p-xylene (sum of isomers)	4,400	440	5.3	9	U	12	3.1	6.4	2.5	U	U	0.56 J	6.3	0.62 J
methyl butyl ketone	NA	NA	U	U	U	U	0.43 J	U	0.58 J	U	U	1.2 J	U	0.56 J
methyl ethyl ketone	220,000	22,000	1.7	4.9	1.7	1.9 J	3.2 B	6.1	3.2	2.5	U	7.2	2.6	3.4
methyl isobutyl ketone	130,000	13,000	U	U	U	U	1.1 J	U	0.61 J	0.40 J	U	1.2 J	0.8 J	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	0.99	0.46 J	U	0.72 J	0.77 J	0.50 J	0.69 J	U	1.3 J	0.53 J	2.3
Naphthalene	3.6	0.36	U	U	U	U	0.60 J	1.1 J	U	U	U	U	0.54 J	U
n-Butane	NA	NA	NA	NA	NA	U	1.4	3.7	1.0 J	12	U	1.9	1.1 J	1.9
n-Propylbenzene	44,000	4,400	NA	NA	NA	2.2 J	0.36 J	U	U	U	U	U	0.45 J	U
o-xylene	4,400	440	2.4	2.4	U	7.9	1.2	2	0.63 J	U	U	0.27 J	2.3	0.26 J
styrene	44,000	4,400	U	U	U	U	0.48 J	0.41 J	U	U	U	0.12 J	0.54 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	U	1.4 J	1.4 J	U	U	0.96 J	0.77 J	U
tetrachloroethylene (pce)	470	47	0.97 J	1	U	U	U	U	U	U	U	U	U	0.2 J
tetrahydrofuran	NA	NA	3.1	U	U	U	2.2 J	U	U	U	U	0.75 J	U	U
toluene	220,000	22,000	1.6	17	2.1	5.2	4.2	7.4	3.3	0.69 J	1.4 J	1	3.4	1.5
trichloroethylene (tce)	30	3	580	410	3.7	4.8 J	1.0 J	0.24 J	0.18 J	6.8	U	0.71 J	0.5 J	1.9
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
NA- Not Available
µg/m³: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* ($\mu g/m^3$)	Indoor Air Screening Level* ($\mu g/m^3$)	774VMP-2											
Sample ID			**774VMP0201AA**	**774VMP0201AB**	**774VMP0201AC**	**774VMP0201AD**	**774VMP0201AG**	**774VMP0201HA**	**774VMP0201IA**	**774VMP0201JA**	**774VMP0201KA**	**774VMP0201MA**	**774VMP0201NA**	**774VMP0201PA**
Sample Type			**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**
Sample Date			**4-May-2011**	**24-Aug-2011**	**21-Oct-2011**	**25-Jan-2012**	**6-Aug-2012**	**21-Feb-2013**	**8-Aug-2013**	**30-Jan-2014**	**17-Jul-2014**	**22-Jan-2015**	**31-Aug-2015**	**3-Feb-2016**
Sample Depth (ft bgs / ags)			**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Sample Collection Duration (hr)			**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Volatiles (TO-15) in $\mu g/m^3$														
1,1,1-trichloroethane	220,000	22,000	85	2.4	U	U	2.6	U	U	U	U	U	0.66 JM	U
1,1-dichloroethane	77	7.7	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	12	4	0.65 J	6.0 J	1.7	0.45 J	0.34 J	0.31 J	U	0.28 J	1.8	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	3.9	2	U	U	0.43 J	U	U	U	U	0.11 J	0.5 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	0.37 J	U	U	U	U	U	0.71 J	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	U	2.2	U	2.1 J	U	12	U	0.26 J	U	U	0.21 J	U
4-ethyltoluene	NA	NA	8.5	1.5	U	U	0.52 J	U	U	U	U	U	0.64 J	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	0.34 J	U	U	0.47 J	U	U	0.28 J	U
acetone	1,400,000	140,000	53	U	11	110 J	43	82	22	47 J	U	17	29	8.1 J
benzene	16	1.6	6	4.4	U	U	0.53 J	1.2	0.34 J	0.79	U	0.74	0.41 J	0.48 J
carbon disulfide	31,000	3,100	0.95	0.6	U	U	1.2 J	U	U	U	U	U	0.19 JM	U
carbon tetrachloride	20	2	1.4	0.70 J	U	U	0.59 J	U	1.0 J	0.78 J	U	0.54 J	0.67 J	0.69 J
chlorobenzene	2,200	220	U	0.56 J	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	45	1.8	0.69 J	U	0.69 J	U	0.76 J	1.1	U	0.23 J	0.58 J	U
chloromethane	3,900	390	U	U	U	U	0.77 J	1.9	1.3	1.0 J	U	1.1	0.82 J	U
cis-1,2-dichloroethene	NA	NA	0.73	U	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	U	0.43 J	U
cyclohexane	260,000	26,000	5.9	10	3.5	U	1.8	12	1.3	1.6 J	U	0.98	0.19 JM	U
ethyl acetate	3,100	310	U	0.62 J	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	1.6	3.2	U	1.9 J	0.94	1.5	0.31 J	0.25 J	U	0.22 J	5.2	U
freon 11 (trichlorofluoromethane)	31,000	3,100	400	22	2.2	U	3.8	1.8	7.3	3.5	14 J	1.9	3	4.3
freon 113 (freon TF)	1,300,000	130,000	0.86 J	0.78 J	U	U	0.61 J	U	0.51 J	0.82 J	U	0.82 J	0.66 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.8	2.8	2.1	3.1 J	2.5	2.9	2.4 J	3.4	U	2.6	2.9	1.9 J
freon 22	2,200,000	220,000	NA	NA	NA	750	130	6.7 J	27	U	1300 J	U	U	3
heptane	NA	NA	U	4.2	6.2	U	0.88	18	0.32 J	0.75 J	U	0.38 J	0.29 J	U
hexane	31,000	3,100	U	8.2	U	U	0.77	23	0.49 J	0.83	U	0.55 J	0.37 J	0.36 J
isopropyl alcohol	NA	NA	4.4	15	2.4	20 J	30	39	44	7.2 J	12 J	9.3 J	7.1 J	2.7 J
m,p-xylene (sum of isomers)	4,400	440	5.1	12	0.53 J	5.5 J	3.1	4.7	0.89 J	0.63 J	U	0.57 J	5.7	U
methyl butyl ketone	NA	NA	U	U	U	U	U	U	0.19 J	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	4.3	3	U	U	3.4 B	5.4	1.2 J	2.0	U	U	1.9	U
methyl isobutyl ketone	130,000	13,000	U	U	U	U	1.3 J	U	0.44 J	0.45 J	U	U	U	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	U	U	U	0.59 J	U	0.48 J	1.1 J	U	0.72 J	0.45 J	1.3 J
Naphthalene	3.6	0.36	U	U	U	U	1.9 J	U	U	U	U	U	0.82 J	U
n-Butane	NA	NA	NA	NA	NA	U	1.2 J	3.6	4.7	18 J	U	3.4	1.9	1.6
n-Propylbenzene	44,000	4,400	NA	NA	NA	U	0.31 J	U	U	U	U	U	0.46 J	U
o-xylene	4,400	440	2.2	2.8	U	3.6 J	1.1	1.2	0.34 J	0.23 J	U	0.2 J	2.2	U
styrene	44,000	4,400	U	U	U	U	0.44 J	U	0.18 J	U	U	0.078 J	0.55 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	0.63 J	U
tetrachloroethylene (pce)	470	47	2.8	U	U	U	U	U	U	0.25 J	U	U	U	U
tetrahydrofuran	NA	NA	6.7	U	U	U	1.4 J	U	U	U	U	U	U	U
toluene	220,000	22,000	3.2	17	1.4	4.8 J	3.9	4.7	1.4	1.2 J	U	0.91	4.1	0.64 J
trichloroethylene (tce)	30	3	2,900	84	11	4.2 J	20	U	0.21 J	3.3 J	U	0.29 J	1.9	0.61 J
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
NA- Not Available
$\mu g/m^3$: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* ($\mu g/m^3$)	Indoor Air Screening Level* ($\mu g/m^3$)	774VMP-3											
Sample ID			774VMP0301AA	774VMP0301AB	774VMP0301AC	774VMW0301AD	774VMP0301AG	774VMP0301HA	774VMP0301IA	774VMP0301JA	774VMP0301KA	774VMP0301MA	774VMP0301NA	774VMP0301PA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			4-May-2011	24-Aug-2011	21-Oct-2011	26-Jan-2012	6-Aug-2012	21-Feb-2013	8-Aug-2013	30-Jan-2014	17-Jul-2014	22-Jan-2015	31-Aug-2015	3-Feb-2016
Sample Depth (ft bgs / ags)			1	1	1	1	1	1	1	1	1	1	1	1
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in $\mu g/m^3$														
1,1,1-trichloroethane	220,000	22,000	12	0.67 J	U	U	U	U	U	U	U	U	U	U
1,1-dichloroethane	77	7.7	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	6.3	4.1	0.95	U	0.35 J	1.4 J	U	U	U	U	U	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	2.2	1.8	U	U	U	U	U	U	U	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	U	2.3	U	U	U	13	0.22 J	U	U	U	U	U
4-ethyltoluene	NA	NA	4.2	1.6	U	U	U	U	U	U	U	U	U	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	0.27 J	1.8 J	U	U	U	U	U	U
acetone	1,400,000	140,000	17	19	12	30 J	25 B	94	11 J	U	170 J	8 J	U	U
benzene	16	1.6	2.5	3.8	0.39 J	U	0.38 J	2.9 J	0.34 J	U	5.8 J	1.4 J	U	U
carbon disulfide	31,000	3,100	0.95	1.4	U	U	0.32 J	9	0.25 J	U	U	U	U	U
carbon tetrachloride	20	2	0.45	U	U	U	U	U	U	U	U	U	380	U
chlorobenzene	2,200	220	U	0.84	U	U	U	U	0.10 J	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	9.1	U	U	U	0.22 J	U	0.16 J	U	U	U	U	U
chloromethane	3,900	390	U	U	U	U	0.43 J	1.3 J	0.79 J	U	U	1.3 J	U	U
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	6.2	11	4.8	U	0.83	12	0.94	U	12 J	0.44 J	U	U
ethyl acetate	3,100	310	U	U	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	1.5	3.6	U	U	0.45 J	4 J	0.26 J	U	2.5 J	U	U	U
freon 11 (trichlorofluoromethane)	31,000	3,100	630	120	9.5	21	15	5.4 J	40	15 J	370	8.5	13 J	32 D
freon 113 (freon TF)	1,300,000	130,000	0.86 J	0.78 J	U	U	0.51 J	U	0.45 J	U	U	U	U	U
freon 12 (dichlorodifluoromethane)	4,400	440	U	2.6	2.4	3.5 J	2.4 J	3.5 J	2.1 J	U	24 J	3 J	U	U
freon 22	2,200,000	220,000	NA	NA	NA	880	26	11 J	11	U	4000	3.1 J	U	9.1 J
heptane	NA	NA	U	3.5	U	U	0.72 J	17	0.23 J	U	U	U	U	U
hexane	31,000	3,100	U	7.5	U	U	1.6	20	0.37 J	U	U	U	U	U
isopropyl alcohol	NA	NA	U	U	U	25 J	4.2 J	65	7.4 J	U	110 J	3 J	8.9 J	U
m,p-xylene (sum of isomers)	4,400	440	4.5	12	1.2 J	U	1.2 J	15	0.66 J	U	5.6 J	U	U	U
methyl butyl ketone	NA	NA	U	U	U	U	0.81 J	U	U	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	U	U	U	7.6 J	3.8 B	13	U	U	U	U	U	U
methyl isobutyl ketone	130,000	13,000	U	U	U	U	0.37 J	1.1 J	0.37 J	U	U	U	U	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	U	U	U	2.1	2.3 J	0.51 J	U	U	U	U	U
Naphthalene	3.6	0.36	U	U	U	U	0.68 J	U	U	U	U	U	U	U
n-Butane	NA	NA	NA	NA	NA	U	2.7	3.2 J	0.96 J	U	U	2.1 J	U	U
n-Propylbenzene	44,000	4,400	NA	NA	NA	U	U	U	U	U	U	U	U	U
o-xylene	4,400	440	2.2	3.2	U	U	0.38 J	3.7 J	0.26 J	U	U	U	U	U
styrene	44,000	4,400	U	1.4	U	U	0.31 J	U	0.23 J	U	5.0 J	U	U	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	1.3 J	U	0.50 J	U	U	U	U	U
tetrachloroethylene (pce)	470	47	U	U	U	U	U	U	0.24 J	U	U	U	U	U
tetrahydrofuran	NA	NA	U	U	U	12 J	1.3 J	U	U	U	U	U	U	U
toluene	220,000	22,000	2.3	16	2.2	1.3 J	4.0	12.0	1.1	U	8.6 J	0.68 J	U	U
trichloroethylene (tce)	30	3	300	11	3.0	U	1.0 J	1.3 J	0.33 J	U	9.2 J	U	U	U
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
NA- Not Available
$\mu g/m^3$: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* (μg/m^3)	Indoor Air Screening Level* (μg/m^3)	774-IA											
Sample ID			774IA1AD	774IA1AE	774IA1AF	774IA1AG	774IA1AH	774IA1IA	774IA1JA	774IA1KA	774IA1LA	774IA1MA	774IA1NA	774IA1PA
Sample Type			Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor
Sample Date			5-May-2011	6-Sep-2011	21-Oct-2011	25-Jan-2012	6-Aug-12	21-Feb-13	8-Aug-13	30-Jan-14	17-Jul-14	22-Jan-15	31-Aug-15	3-Feb-16
Sample Depth (ft bgs / ags)			5	5	5	5	5	5	5	5	5	5	5	5
Sample Collection Duration (hr)			12	12	12	12	12	12	12	12	12	12	12	12
Volatiles (TO-15) in μg/m^3														
1,1,1-trichloroethane	220,000	22,000	U	U	U	U	U	U	U	U	U	U	U	U
1,1-dichloroethane	77	7.7	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	2.7	1.6	0.65 J	U	U	U	0.28 J	0.32 J	0.20 J	U	0.13 J	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	0.27 J	U	U	U	U	U	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	0.46 J	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	1.6 J	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	U	U	U	U	U	0.55 J	0.24 J	U	U	U	U	U
4-ethyltoluene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
acetone	1,400,000	140,000	52	34	19	28 J	32 B	44	18	47	18 J	11 J	12	17
benzene	16	1.6	1.3	U	U	U	U	0.69	0.31 J	0.80	0.24 J	0.68	0.32 J	0.49 J
carbon disulfide	31,000	3,100	0.66	U	U	U	U	U	U	U	U	U	U	U
carbon tetrachloride	20	2	0.51	0.90 J	U	U	0.45 J	0.46 J	0.44 J	0.53 J	0.49 J	0.45 J	0.43 J	0.39 J
chlorobenzene	2,200	220	0.7	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	0.2 J	U	U	U	U	U	U
chloroform	5.3	0.53	0.55 J	U	U	U	0.28 J	0.32 J	0.18 J	0.57 J	U	U	0.18 J	U
chloromethane	3,900	390	U	1.2	U	1.7 J	1.2	2.7	1.0 J	1.7	1.2 J	1.1	1	1.4
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	0.21 J	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	1.3	U	U	U	U	0.57 J	0.14 J	U	U	U	U	U
ethyl acetate	3,100	310	U	U	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	0.84	0.57 J	U	U	U	0.19 J	0.24 J	0.26 J	0.23 J	0.15 J	0.19 J	0.15 J
freon 11 (trichlorofluoromethane)	31,000	3,100	33	77	4.2	8.9	5.0	3.2	40	16	18	2.2	2.5	38
freon 113 (freon TF)	1,300,000	130,000	U	0.86 J	U	U	0.56 J	0.72 J	0.55 J	0.65 J	U	0.67 J	0.49 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	U	2.8	2.4	U	2.4 J	3	2.2 J	3.0	2.9 J	2.6	2.4 J	2.2 J
freon 22	2,200,000	220,000	NA	NA	NA	350	40	10 J	11	13	330	2	U	6.8
heptane	NA	NA	1.7	U	U	U	U	0.66 J	0.21 J	0.51 J	U	U	U	U
hexane	31,000	3,100	33	U	U	U	U	1.9	0.42 J	0.74	0.34 J	U	0.28 J	0.56 J
isopropyl alcohol	NA	NA	11	32	9.9	29 J	8.3 J	26	14	26	11 J	1.6 J	U	3 J
m,p-xylene (sum of isomers)	4,400	440	2.4	1.2 J	0.57 J	U	U	0.44 J	0.65 J	0.61 J	0.45 J	U	0.5 J	U
methyl butyl ketone	NA	NA	U	U	U	U	0.62 J	U	0.61 J	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	U	2.8	U	2.5 J	2.2 B	15	2.6	1.6	3.5 J	2.1	0.93 J	1.9
methyl isobutyl ketone	130,000	13,000	U	U	U	U	0.37 J	1 J	0.35 J	0.30 J	U	U	U	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	0.93 J	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	1.1	U	U	0.45 J	1 J	0.59 J	0.76 J	U	0.88 J	0.84 J	2.7
Naphthalene	3.6	0.36	U	U	U	U	U	U	U	U	U	U	0.48 J	U
n-Butane	NA	NA	NA	NA	NA	U	0.32 J	2.5	1.0 J	18	U	2.1	1.1 J	1.4
n-Propylbenzene	44,000	4,400	NA	NA	NA	U	U	U	U	U	U	U	U	U
o-xylene	4,400	440	0.71	0.49 J	U	U	U	0.18 J	0.27 J	0.23 J	U	U	0.18 J	U
styrene	44,000	4,400	0.78	0.56 J	U	U	U	0.18 J	0.24 J	0.16 J	0.43 J	U	0.13 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	U	1.7 J	0.69 J	U	U	U	U	U
tetrachloroethylene (pce)	470	47	U	U	U	U	U	U	U	U	U	U	U	U
tetrahydrofuran	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
toluene	220,000	22,000	5.1	2.5	1.3	0.76 J	0.47 J	0.71 J	1	1.2	0.65 J	0.58 J	0.85	1.2
trichloroethylene (tce)	30	3	4.4	2.3	0.87	1.5 J	0.35 J	0.22 J	U	0.34 J	U	U	U	U
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
NA- Not Available
μg/m^3: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level ($\mu g/m^3$)	Indoor Air Screening Level ($\mu g/m^3$)	776VMP-1											
Sample ID			776VMP0101AA	776VMP0101AB	776VMP0101AC	776VMP0101AD	776VMP0101AG	776VMP0101HA	776VMP0101IA	776VMP0101JA	776VMP0101KA	776VMP0101MA	776VMP0101NA	776VMP0101PA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			4-May-2011	6-Sep-2011	21-Oct-2011	25-Jan-2012	6-Aug-2012	21-Feb-2013	9-Aug-2013	30-Jan-2014	17-Jul-2014	22-Jan-2015	31-Aug-2015	3-Feb-2016
Sample Depth (ft bgs / ags)			1	1	1	1	1	1	1	1	1	1	1	1
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in $\mu g/m^3$														
1,1,1-trichloroethane	220,000	22,000	4.5	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-tetrachloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	9.0	3.5	U	U	0.46 J	0.66 J	0.27 J	U	U	1.3	2.3	U
1,2-dichloroethane	4.7	0.47	U	0.45 J	U	U	0.32 J	U	U	U	U	U	0.22 J	U
1,3,5-trimethylbenzene	NA	NA	3.8	1.6	U	U	U	U	U	U	U	0.4 J	0.66 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	1 J	U
1,4-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	0.38 J	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	0.99 J	12 J	U
2,2,4-trimethylpentane	NA	NA	U	U	0.47 J	U	U	6.5	0.18 J	U	U	U	U	U
4-ethyltoluene	NA	NA	7.2	0.9	U	U	U	U	U	U	U	0.55 J	0.79 J	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	0.33 J	U	U	U	U	1.7	0.34 J	U
acetone	1,400,000	140,000	25	39	39	23	57	37	26	11 J	24	21	38	21 J
benzene	16	1.6	1.0	0.55	1.3	0.52 J	0.43 J	0.87	0.30 J	0.68	0.26 J	0.82	0.46 J	0.87 J
bromomethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	1.2	0.57	0.44 J	U	9.5	U	0.22 J	U	2.3 J	4.8	2.2	U
carbon tetrachloride	20	2	0.77	0.77 J	U	0.53 J	0.83 J	0.51 J	1.1 J	0.52 J	0.47 J	0.52 J♦	0.6 J	U
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	0.27 J	U
chloroform	5.3	0.53	11	0.79	U	0.27 J	U	U	0.66 J	0.17 J	0.25 J	U	0.54 J	U
chloromethane	3,900	390	U	1.1	U	0.67 J	1.3	1.4	1.2	1.1	0.85 J	0.76 J	0.98 J	U
cis-1,2-dichloroethene	NA	NA	U	9.70	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	0.17 J	0.67 J	U
cyclohexane	260,000	26,000	6.8	1.6	3.0	1.2	2.9	6.6	1.1	0.9	1.1 J	0.47 J	0.34 J	0.61 J
ethyl acetate	3,100	310	U	U	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	1.6	0.79	1.6	U	0.92	0.76 J	0.40 J	0.30 J	U	1.40	7.6	U
freon 11 (trichlorofluoromethane)	31,000	3,100	1.7	2.5	1.3	1.4	1.3	1.5	1.2	1.4	1.2 J	1.3 ♦	1.4	0.99 J
freon 113 (freon TF)	1,300,000	130,000	8.6	0.86 J	U	0.70 J	0.65 J	0.73 J	0.54 J	0.69 J	0.63 J	0.43 J	0.83 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	6.6	2.9	2.2	2.9	2.5	2.9	U	3.0	2.7 J	2.7	2.6	2 J
freon 22	2,200,000	220,000	NA	NA	NA	12	13	52 J	3	17	130	4.9	4.2	200
heptane	NA	NA	U	U	1.0	U	0.38 J	8.3	0.20 J	U	U	0.72 J	U	U
hexane	31,000	3,100	U	U	1.9	0.38 J	U	9.8	0.29 J	0.35 J	0.33 J	0.72	1.2	U
isopropyl alcohol	NA	NA	U	21	21	49	46	46	19	24	15 J	18 ♦	40	38 J
m,p-xylene (sum of isomers)	4,400	440	5.4	1.9	4.0	0.23 J	1.8 J	2.4	0.87 J	0.60 J	U	4.9	7.8	U
methyl butyl ketone	NA	NA	U	U	U	U	1.4 J	U	0.63 J	U	U	U	0.7 J	U
methyl ethyl ketone	220,000	22,000	2.9	2.7	1.9	5.9	4.3	3.9	2.8	0.86 J	4	U	4.4	2.6 J
methyl isobutyl ketone	130,000	13,000	2.2	U	U	U	3.1	U	1.1 J	0.22 J	0.28 J	0.91 J	0.92 J	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	13	0.46 J	0.49 J	0.52 J	1 J	0.47 J	0.67 J	U	0.71 J	0.43 J	U
naphthalene	3.6	0.36	U	U	U	U	3.2 J	U	0.61 J	U	U	U	0.75 J	U
n-Butane	NA	NA	NA	NA	NA	2.4	2.8	2.4	1.1 J	3.3	U	21	5.1	1.1 J
n-Propylbenzene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	0.64 J	U
o-xylene	4,400	440	2.5	0.97	1.1	U	0.65 J	0.78 J	0.31 J	0.23 J	U	1.5	3.1	U
styrene	44,000	4,400	1.1	1.1	0.56 J	U	1.0	0.2 J	0.31 J	0.20 J	U	0.3 J♦	0.88	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	1.3 J	2.0 J	1 J	0.89 J	U	U	0.95 J	2.7 J	U
tetrachloroethylene (pce)	470	47	U	2.7	U	U	U	U	U	U	U	U	U	U
tetrahydrofuran	NA	NA	4.8	1.1	U	9.9 J	0.72 J	U	U	U	U	3 J	0.82 J	U
toluene	220,000	22,000	5.6	4.1	6.1	0.40 J	1.5	3.1	1.1	0.85	0.38 J	5.2	5	U
trichloroethylene (tce)	30	3	21	38	U	0.36 J	U	U	U	0.36 J	0.71 J	U	0.81 J	U
vinyl chloride	28	2.8	U	0.81	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
$\mu g/m^3$: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level (µg/m³)	Indoor Air Screening Level (µg/m³)	776VMP-2											
Sample ID			**776VMP0201AA**	**776VMP0201AB**	**776VMP0201AC**	**776VMP0201AD**	**776VMP0201AG**	**776VMP0201HA**	**776VMP0201IA**	**776VMP0201JA**	**776VMP0201KA**	**776VMP0201MA**	**776VMP0201NA**	**776VMP0201PA**
Sample Type			**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**	**sub-slab**
Sample Date			**4-May-2011**	**6-Sep-2011**	**21-Oct-2011**	**25-Jan-2012**	**6-Aug-2012**	**21-Feb-2013**	**9-Aug-2013**	**30-Jan-2014**	**17-Jul-2014**	**22-Jan-2015**	**31-Aug-2015**	**3-Feb-2016**
Sample Depth (ft bgs / ags)			**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Sample Collection Duration (hr)			**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Volatiles (TO-15) in µg/m³														
1,1,1-trichloroethane	220,000	22,000	8.7	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-tetrachloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	9.1	3.3	0.65 J	U	0.45 J	0.73 J	2	5.6	2.7	0.3 J	2.6	U
1,2-dichloroethane	4.7	0.47	U	0.49 J	U	U	U	U	U	0.27 J	U	0.22 J	U	U
1,3,5-trimethylbenzene	NA	NA	2.8	1.2	U	U	U	U	0.55 J	1.6	0.74 J	U	0.73 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	44	7.8	U	1.2	U
1,4-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	U	U	U	0.24 J	0.56 J	6.5 J	2.1	0.92 ♦	0.80 J	U	0.21 J	U
4-ethyltoluene	NA	NA	5.1	1.0	U	U	U	0.27 J	0.58 JM	1.7	0.81 J	0.15 J	0.82 J	U
4-isopropyltoluene	NA	NA	NA	NA	NA	0.49 J	0.41 J	U	U	1.8 ♦	U	U	0.34 J	U
acetone	1,400,000	140,000	17	39	45	20	43	36	38	58	38 ♦	8.8 J	35	U
benzene	16	1.6	1.1	0.45 J	1.5	0.65	0.43 J	0.92	0.7	1.7 ♦	0.60 J♦	0.75	0.41 JM	U
bromomethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	0.98	0.79	0.38 J	0.64 J	0.41 J	0.33 J	3.4	0.44 J♦	U	U	0.7 J♦	U
carbon tetrachloride	20	2	0.77	0.77 J	0.70 J	0.53 J	0.70 J	0.56 J	0.42 J	0.62 J♦	U	0.59 J	0.69 J♦	U
chlorobenzene	2,200	220	U	U	U	0.13 J	U	U	U	0.31 J♦	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	8.3	U	U	0.30 J	0.22 J	U	0.24 J♦	0.22 J	0.33 J♦	U	0.62 J	U
chloromethane	3,900	390	U	1.2	U	0.85 J	1.4	1.7	1.4♦	1.8	1.3 J	1.2	0.87 J	U
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	0.36 J	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	0.34 J♦	U	0.82 J	U
cyclohexane	260,000	26,000	4.5	7.3	8.5	1.4	2.1	5.5	0.79	6.9 J♦	1.3 J♦	0.72	0.57 J♦	U
ethyl acetate	3,100	310	U	1.9	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	0.66	0.88	1.4	0.75 J	1.1	0.98	1.4	4.1 J♦	2.1	0.4 J	10	U
freon 11 (trichlorofluoromethane)	31,000	3,100	2.5	1.8	1.6	1.6	1.4	1.5	1.2	1.6 ♦	1.5 J	1.2	1.5	U
freon 113 (freon TF)	1,300,000	130,000	6.8	1.0 J	U	1.2 J	0.67 J	0.68 J	0.53 J	0.73 J♦	0.74 J	0.54 J	0.98 J♦	U
freon 12 (dichlorodifluoromethane)	4,400	440	11.0	3.0	2.6	3.1	2.5	2.5 ♦	0.47 J	3.3 ♦	3.0 J	2.6	2.8	U
freon 22	2,200,000	220,000	NA	NA	NA	16	14	68 J	3.3	99 J♦	170	10	4.6	900
heptane	NA	NA	0.67	1.3	U	0.38 J	0.43 J	7.1 J	0.72 J	2.3 ♦	0.69 J♦	U	0.35 J	U
hexane	31,000	3,100	U	U	U	0.53 J	0.43 J	8.5 J	0.68 J	2.3 ♦	0.79 J♦	0.32 J	1.2	U
isopropyl alcohol	NA	NA	U	68	31	41	40	44	30	95	48	16	42	U
m,p-xylene (sum of isomers)	4,400	440	2.1	2.4	3.4	1.9 J	2.4	3.2	4.7	11	5.8	1.1 J	9.6	U
methyl butyl ketone	NA	NA	U	U	U	U	1.0 J	U	1.0 J	0.94 J	U	U	U	U
methyl ethyl ketone	220,000	22,000	1.7	U	3.9	1.2 J	4.3 B	3.6	5.9	9.4	7.0 ♦	U	4 ♦	U
methyl isobutyl ketone	130,000	13,000	U	U	U	0.44 J	1.9 J	0.39 J	0.89 J	1.0 J	1.2 J♦	U	0.99 J♦	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	0.74 J	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	0.33 J	U	U	U
methylene chloride	12,000	1,200	U	0.53	U	0.55 J	0.92 J	0.98 J	0.83 J♦	0.89 J	U	U	0.56 J♦	U
naphthalene	3.6	0.36	U	U	U	U	1.9 J	0.5 J	0.61 J	U	U	0.68 J	0.85 J	5.8 J♦
n-Butane	NA	NA	NA	NA	NA	3.2	3.3	2.7 ♦	1.4	5.8 J♦	1.6 J	2.5	5.2	U
n-Propylbenzene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	0.65 J	U
o-xylene	4,400	440	1.1	0.93	0.97	0.79 J	0.82 J	1	1.8	4.5 J♦	2.1	0.37 J	3.6	U
styrene	44,000	4,400	0.78	1.0	0.65	0.44 J	1.8	U	0.44 J	4.8	1.6 J	0.67 J	0.91	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	1.3 J	1.7 J	1.7 J	17	5.0 J♦	U	2.4 J	U
tetrachloroethylene (pce)	470	47	1.4	U	7.4	U	U	U	0.17 J♦	0.52 J♦	U	U	U	U
tetrahydrofuran	NA	NA	1.6	4.3	U	U	1.1 J	3.3 J♦	U	1.4 J	U	U	0.58 J	U
toluene	220,000	22,000	3.2	4.5	6.9	1.4	1.7	3.6 J	4.5	19 J♦	4.8	0.85	4.9	U
trichloroethylene (tce)	30	3	360	3.8	3.7	3.0	1.4	0.33 J	0.20 J♦	0.81 J	1.1 J	0.42 J	0.76 J	U
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m³: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level ($\mu g/m^3$)	Indoor Air Screening Level ($\mu g/m^3$)	776VMP-3											
Sample ID			776VMP0301AA	776VMP0301AB	776VMP0301AC	776VMP0301AD	776VMP0301AG	776VMP0301HA	776VMP0301IA	776VMP0301JA	776VMP0301KA	776VMP0301MA	776VMP0301NA	776VMP0301PA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			4-May-2011	6-Sep-2011	21-Oct-2011	25-Jan-2012	6-Aug-2012	21-Feb-2013	9-Aug-2013	30-Jan-2014	17-Jul-2014	22-Jan-2015	31-Aug-2015	3-Feb-2016
Sample Depth (ft bgs / ags)			1	1	1	1	1	1	1	1	1	1	1	1
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in $\mu g/m^3$														
1,1,1-trichloroethane	220,000	22,000	18	U	U	U	U	U	U	U	U	U	0.18 J	U
1,1,2,2-tetrachloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	11	2.1	0.50 J	0.61 J	0.52 J	U	0.67 J	U	0.36 J	0.25 J	0.23 J	U
1,2-dichloroethane	4.7	0.47	U	0.62	U	0.27 J	U	0.29 J	U	U	0.27 J	U	U	U
1,3,5-trimethylbenzene	NA	NA	2.7	0.70 J	U	U	U	U	U	U	0.11 J	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	0.79 J	U	U	U
2,2,4-trimethylpentane	NA	NA	U	U	U	U	U	5.7	0.65 J	0.21 J	0.16 J	U	U	U
4-ethyltoluene	NA	NA	5.2	0.65 J	U	U	U	U	U	U	0.12 J	U	U	U
4-isopropyltoluene	NA	NA	NA	NA	NA	0.29 J	0.40 J	U	U	U	0.12 J	U	0.22 J	U
acetone	1,400,000	140,000	20	30	58	34	50	37	19	37	26	21	27	18 JD
benzene	16	1.6	2	0.39 J	1.0	0.40 J	0.32 J	0.99	0.37 J	0.81	0.31 J	0.54 J	0.28 J	0.68 J
bromomethane	NA	NA	U	U	U	U	U	U	U	U	0.11 J	U	U	U
carbon disulfide	31,000	3,100	0.95	0.95	0.63	6.0	0.44 J	U	0.21 J	U	2.0	U	0.93 J	U
carbon tetrachloride	20	2	0.38	0.83 J	0.70 J	0.51 J	0.60 J	0.53 J	0.41 J	0.49 J	U	0.49 J	0.61 J	U
chlorobenzene	2,200	220	U	U	U	U	0.22 J	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	0.093 J	U	U	U
chloroform	5.3	0.53	16	U	0.74	0.68 J	0.87 J	1.2	0.18 J	0.29 J	0.44 J	U	0.47 JM	U
chloromethane	3,900	390	U	0.97	U	U	1.3	U	1.2	0.73 J	1.3	U	0.67 J	U
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	0.30 J	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	5.4	3.5	4.8	1.2	2.8	5	0.71	3.4	1.2	0.8	0.81 M	0.91 J
ethyl acetate	3,100	310	U	U	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	1.1	0.66	1.2	0.64 J	0.72 J	0.98	0.56 J	0.47 J	0.40 J	0.3 J	0.29 J	U
freon 11 (trichlorofluoromethane)	31,000	3,100	4.6	1.7	1.5	1.4	1.4	1.5	1.1	1.3	1.3	1.3	1.4	1.1 J
freon 113 (freon TF)	1,300,000	130,000	1.6	0.93 J	U	0.60 J	0.61 J	0.63 J	0.52 J	0.57 J	0.57 J	0.53 J	0.55 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	21	2.9	2.6	2.9	2.5	2.7	2.3 J	2.9	2.8	2.7	2.6	2.1 J
freon 22	2,200,000	220,000	NA	NA	NA	6.3	15	50 J	9.9	15	50	9.2	6	140
heptane	NA	NA	U	U	U	0.36 J	0.45 J	5.4	0.36 J	0.74 J	0.34 J	U	U	U
hexane	31,000	3,100	U	U	U	0.72	0.91	7.2	0.40 J	0.89	0.24 J	U	0.37 J	U
isopropyl alcohol	NA	NA	U	12	21	28	28	34	24	63	19	20	29	28 J
m,p-xylene (sum of isomers)	4,400	440	3.8	1.7	2.7	1.7 J	1.7 J	2.6	1.6 J	0.65 J	0.99 J	0.72 J	0.71 J	U
methyl butyl ketone	NA	NA	U	U	U	U	0.78 J	U	0.25 J	U	U	0.86 J	U	U
methyl ethyl ketone	220,000	22,000	2.8	2.0	2.2	2.6	7.0 B	4.6	1.5	6.6	4.0	5.9	3.6	1.9 J
methyl isobutyl ketone	130,000	13,000	U	U	U	0.83 J	3.1	U	0.43 J	0.44 J	1.1 J	U	1.1 J	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	0.95	U	0.50 J	0.99 J	0.79 J	0.43 J	0.66 J	U	U	0.57 J	U
naphthalene	3.6	0.36	U	U	U	0.51 J	1.6 J	U	0.62 J	U	1.2 J	U	0.31 J	U
n-Butane	NA	NA	NA	NA	NA	1.7	16	1.8	1.2 J	3.3	0.69 J	1.6	1.2 J	0.75 J
n-Propylbenzene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
o-xylene	4,400	440	1.6	0.66	0.71	0.70 J	0.58 J	U	0.62 J	0.16 J	0.34 J	0.35 J	0.26 J	U
styrene	44,000	4,400	0.78	0.69	0.56 J	0.26 J	0.79 J	0.14 J	0.31 J	U	0.43 J	0.31 J	0.35 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	1.4 J	1 J	0.60 J	9.0 J	U	U	0.69 J	U
tetrachloroethylene (pce)	470	47	0.83 J	U	U	U	U	U	0.19 J	U	U	U	U	U
tetrahydrofuran	NA	NA	11	1.8	U	0.81 J	2.5 J	U	U	U	U	U	U	U
toluene	220,000	22,000	4.4	3.1	2.5	1.2	1.8	3.8	1.7	5.2	0.88	0.82	1	1.6 J
trichloroethylene (tce)	30	3	830	10	7.3	13	12	2.4	U	2.6	3.5	2.1	5.1	2.9 J
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
$\mu g/m^3$: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level ($\mu g/m^3$)	Indoor Air Screening Level ($\mu g/m^3$)	776-IA											
Sample ID			776IA1CA	776IA1DA	776IA1EA	776IA1FA	776IA1GA	776IA1HA	776IA1IA	776IA1JA	776IA1LA	776IA1MA	776IA1NA	776IA1PA
Sample Type			Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor
Sample Date			4-May-2011	6-Sep-2011	21-Oct-2011	25-Jan-2012	6-Aug-2012	21-Feb-2013	8-Aug-2013	30-Jan-2014	17-Jul-2014	22-Jan-2015	31-Aug-2015	3-Feb-2016
Sample Depth (ft bgs / ags)			5	5	5	5	5	5	5	5	5	5	5	5
Sample Collection Duration (hr)			12	12	12	12	12	12	12	12	12	12	12	12
Volatiles (TO-15) in $\mu g/m^3$														
1,1,1-trichloroethane	220,000	22,000	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-tetrachloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	1.2	1.7	0.85	U	0.55 J	U	U	U	0.32 J	U	0.29 J	U
1,2-dichloroethane	4.7	0.47	U	0.53 J	U	U	U	U	U	U	0.27 J	U	U	U
1,3,5-trimethylbenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	0.097 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	34
2,2,4-trimethylpentane	NA	NA	U	U	U	0.30 J	U	U	0.20 J	U	U	U	0.26 J	0.22 J
4-ethyltoluene	NA	NA	U	U	U	U	U	U	U	U	0.090 J	U	U	U
4-isopropyltoluene	NA	NA	NA	U	U	U	0.33 J	U	U	U	U	U	0.13 J	2.1
acetone	1,400,000	140,000	54	47	30	18	68	28	22	U	20	22	32	25
benzene	16	1.6	0.49	0.36 J	1.4	0.67 J	0.40 J	1.4	0.29 J	2.4	0.18 J	0.67	0.37 J	0.55 J
bromomethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	0.41 J	0.82	U	U	0.64 J	U	0.21 J	0.26 J	0.82 J	U	0.69 J	U
carbon tetrachloride	20	2	0.51	0.77 J	U	0.57 J	0.46 J	0.44 J	0.41 J	0.55 J	0.51 J	0.57 J	0.51 J	0.27 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	0.33 J	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	U	U	0.55 J	0.32 J	0.25 J	U	U	U	0.29 J	U	0.22 J	U
chloromethane	3,900	390	1.8	1.5	U	1.4 J	1.5	1.8	1.1	5.3	1.3	1.3	1.1	1.6
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	U	U	U	U	1.2	0.23 J	U	U	U	U	U	0.31 J
ethyl acetate	3,100	310	5.8	3.3	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	0.71	0.93	1.3	0.47 J	1.1	0.29 J	0.37 J	0.50 J	0.45 J	0.25 J	0.37 J	0.25 J
freon 11 (trichlorofluoromethane)	31,000	3,100	1.4	1.7	1.3	1.4 J	1.4	1.4	1.3	1.6	1.5	1.3	1.3	1 J
freon 113 (freon TF)	1,300,000	130,000	U	0.93 J	U	U	0.57 J	0.63 J	0.51 J	0.75 J	U	0.46 J	0.42 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	3.6	3.1	2.2	3.2 J	2.4 J	2.2 J	2.3 J	3.5	3.1	2.8	2.4 J	2 J
freon 22	2,200,000	220,000	NA	NA	NA	15	14	69	2.4	17	30	10	4.4	15
heptane	NA	NA	3.2	1.3	U	0.43 J	1.5	0.14 J	0.19 J	1.8	U	U	U	0.36 J
hexane	31,000	3,100	2.3	U	U	U	2.0	0.54 J	0.25 J	2.8	U	U	0.33 J	0.51 J
isopropyl alcohol	NA	NA	50	50	35	100	57	43	23	1.9 J	15	18	28	61
m,p-xylene (sum of isomers)	4,400	440	1.2 J	2.1	2.9	1.0 J	2.5	0.23 J	1.2 J	1.6 J	1.1 J	0.54 J	0.89 J	0.54 J
methyl butyl ketone	NA	NA	U	U	U	U	1.2 J	U	0.53 J	U	U	U	U	0.36 J
methyl ethyl ketone	220,000	22,000	3.3	4.1	U	0.84 J	6.5 B	2.1	2.6	U	2.0	2.1	3.9	2
methyl isobutyl ketone	130,000	13,000	U	U	U	0.83 J	2.7	1.1 J	1.5 J	U	1.5 J	U	U	0.68 J
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	1.3	U	U	1.7 J	1.2 J	1.8	1.0 J	0.64 J	U	0.95 J	2.1
naphthalene	3.6	0.36	U	U	U	0.71 J	2.2 J	U	U	U	U	U	1.1 J	0.38 J
n-Butane	NA	NA	NA	NA	NA	2.4	8.9	2.2	3.5	8.5	0.77 J	2.5	1.5	1.5
n-Propylbenzene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
o-xylene	4,400	440	0.44 J	0.75	0.88	0.46 J	0.81 J	U	0.66 J	0.47 J	0.36 J	U	0.32 J	0.22 J
styrene	44,000	4,400	1.1	1.0	0.82	0.33 J	1.9	U	0.16 J	U	0.35 J	0.23 J	0.33 J	0.29 J
tert-Butyl alcohol	NA	NA	NA	NA	NA	0.56 J	5.4 J	U	0.69 J	U	U	U	U	U
tetrachloroethylene (pce)	470	47	U	U	U	U	U	0.38 J	U	U	U	U	U	U
tetrahydrofuran	NA	NA	U	U	U	U	0.90 J	U	U	U	U	U	U	U
toluene	220,000	22,000	4.4	3.2	3.9	1.3	5.3	4.3	0.97	8.7	1.1	0.8	1.4	1.7
trichloroethylene (tce)	30	3	3.6	1.9	0.98	0.41 J	U	U	U	0.26 J	0.95 J	0.35 J	0.52 J	0.28 J
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
$\mu g/m^3$: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 5
Building 774 and 776 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level (µg/m³)	Indoor Air Screening Level (µg/m³)	774/776-OA											
Sample ID			776OA1DA	776OA1EA	774776OA1FA	774776OA1GA	774776OA1HA	774776OA1IA	774776OA1JA	774776OA1KA	774776OA1LA	774776OA1MA	774776OA1NA	774776OA1PA
Sample Type			Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor
Sample Date			4-May-2011	6-Sep-2011	21-Oct-2011	25-Jan-2012	6-Aug-2012	21-Feb-2013	8-Aug-2013	30-Jan-2014	17-Jul-2014	22-Jan-2015	1-Sep-2015	3-Feb-2016
Sample Depth (ft bgs / ags)			5	5	5	5	5	5	5	5	5	5	5	5
Sample Collection Duration (hr)			12	12	12	12	12	12	12	12	12	12	12	12
Volatiles (TO-15) in µg/m³														
1,1,1-trichloroethane	220,000	22,000	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-tetrachloroethane	NA	NA	U	U	U	U	U	U	U	U	5.5	U	U	U
1,2,4-trimethylbenzene	310	31	U	1.7	0.60 J	U	1.8	U	0.48 J	U	0.11 J	U	0.64 J	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	0.49 J	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	U	U	U	U	0.51 J	U	U	U	U	U	0.15 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	0.69 J	U
2,2,4-trimethylpentane	NA	NA	U	U	U	U	0.94 J	U	0.80 J	4.2	U	U	U	U
4-ethyltoluene	NA	NA	U	U	U	U	0.53 J	U	U	U	U	U	0.17 J	U
4-isopropyltoluene	NA	NA	U	U	U	U	0.8 J	U	U	U	U	U	U	U
acetone	1,400,000	140,000	18	53	6.8	1.9 J	97	15	13	7.0 J	9.1 J	U	13	U
benzene	16	1.6	U	0.39 J	U	0.63	0.92 J	0.61 J	0.47 J	0.91	0.16 J	0.63	0.33 JM	0.43 J
bromomethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	0.6	0.35 J	U	U	2.3 J	U	2	U	0.50 J	U	U	U
carbon tetrachloride	20	2	0.51	0.90 J	U	0.51 J	0.5 J	0.47 J	0.42 J	0.55 J	0.48 J	0.45 J	0.43 J	0.46 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	U	U	U	U	U	U	U	U	U	U	U	U
chloromethane	3,900	390	U	1.1	0.76	1.2	1.4 J	1.5	1.1	1.6	1.0	1.1	1.7	1.2
cis-1,2-dichloroethene	NA	NA	U	0.48 J	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	U	U	U	U	5.1	U	1.1	U	U	U	U	U
ethyl acetate	3,100	310	U	U	U	U	U	U	NA	U	U	U	U	U
ethylbenzene	49	4.9	U	U	1.1	U	2.1	U	0.37 J	0.24 J	U	U	0.21 J	0.15 J
freon 11 (trichlorofluoromethane)	31,000	3,100	1.3	1.7	1.3	1.4	1.4 J	1.4	1.1	1.5	1.3	1.4	1.3	1.7
freon 113 (freon TF)	1,300,000	130,000	U	0.86 J	U	0.56 J	0.61 J	0.64 J	0.57 J	0.68 J	U	0.53 J	0.43 J	1.2 J
freon 12 (dichlorodifluoromethane)	4,400	440	U	2.9	2.5	2.8	3.4 J	2.7	2.2 J	3.2	2.8	2.7	2.3 J	2.2 J
freon 22	2,200,000	220,000	NA	NA	NA	U	2.1 J	1.1 J	1.2 J	1.2 J	0.94 J	0.86 J	0.96 J	0.95 J
heptane	NA	NA	1.2	U	U	U	3.6	U	0.37 J	1.2	U	U	U	U
hexane	31,000	3,100	0.9	U	U	0.42 J	8.2	0.48 J	0.73	0.96	U	U	U	U
isopropyl alcohol	NA	NA	U	U	1.2	U	14 J	U	5.6 J	U	0.98 J	U	U	U
m,p-xylene (sum of isomers)	4,400	440	U	1.1 J	2.7	0.33 J	6.2	U	0.98 J	0.68 J	0.20 J	U	0.72 J	0.49 J
methyl butyl ketone	NA	NA	U	U	U	U	0.56 J	1.5	0.33 J	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	U	8.7 J	U	0.42 J	6.7 B	U	15	1.2 J	2.2	U	2	U
methyl isobutyl ketone	130,000	13,000	U	U	U	U	U	U	0.25 J	U	0.11 J	U	0.95 J	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	U	0.92	0.56	0.50 J	2.0 J	0.98 J	1.3 J	0.92 J	U	0.82 J	0.75 J	1.2 J
naphthalene	3.6	0.36	U	U	U	U	3.1 J	U	U	U	U	U	0.37 J	U
n-Butane	NA	NA	NA	NA	NA	1.8	24	1.4	1.3	4.7	U	1.4	0.88 J	1.6
n-Propylbenzene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	0.14 J	U
o-xylene	4,400	440	U	0.44 J	0.97	0.12 J	2.2	U	0.43 J	0.21 J	U	U	0.28 J	U
styrene	44,000	4,400	U	U	U	U	1.2 J	U	0.25 J	U	U	U	U	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	1.2 J	U	0.73 J	U	U	U	U	U
tetrachloroethylene (pce)	470	47	U	U	U	U	U	U	0.91 J	U	U	U	U	U
tetrahydrofuran	NA	NA	U	1.3	U	U	8.2 J	U	U	U	U	U	U	U
toluene	220,000	22,000	1	5.8	3.5	0.73 J	20	0.39 J	5.6	1.9	0.37 J	0.49 J	0.73 J	1
trichloroethylene (tce)	30	3	0.98	2.6	0.60 J	U	U	U	U	1.2	0.53 J	U	U	U
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

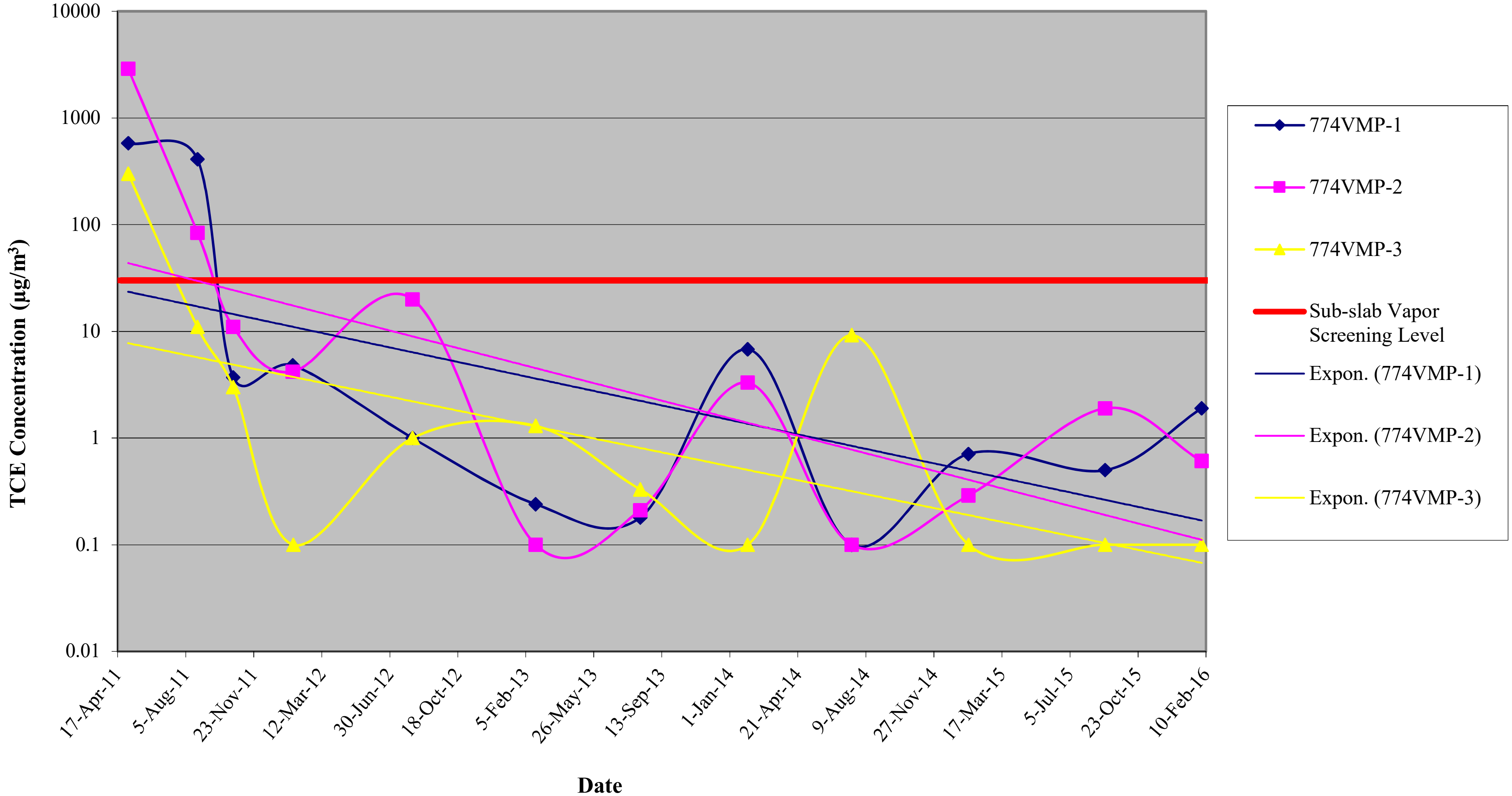
Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m³: microgram per cubic meter.
Exceedance of the indoor or outdoor initial benchmark.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 6
Buildings 774 and 776
SSVM Performance Monitoring Influent Air Results

Sample Location	**774776- Influent**													
Sample ID	**774776CA01AA**	**774776CA01AB**	**774776CA01AC**	**774776CA01AD**	**774776CA01AE**	**774776CA01AF**	**774776CA01AG**	**774776CA01AH**	**774776CA01IA**	**774776CA01JA**	**774776CA01KA**	**774776CA01LA**	**774776CA01MA**	**774776CA01NA**
Sample Type	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**
Sample Date	**6-Jun-2011**	**23-Aug-2011**	**14-Oct-2011**	**14-Oct-2011**	**25-Oct-2011**	**24-Jan-2012**	**3-Aug-2012**	**15-Feb-2013**	**7-Aug-2013**	**28-Jan-2014**	**16-Jul-2014**	**20-Jan-2015**	**28-Aug-2015**	**1-Feb-2016**
Sample Depth (ft bgs / ags)	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Sample Collection Duration (hr)	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**
Volatiles (TO-15) in µg/m^3														
1,1,1-trichloroethane	6.6	4.0	6.9	6.1	6.5	5.0 J	2.9	0.91 J	1.8	U	U	1.8	1.6 M	U
1,2,4-trimethylbenzene	9.5	3.1	U	U	1.7	U	0.69 J	U	0.56 J	U	U	U	1.4	U
1,3,5-trimethylbenzene	4.7	2.2	U	U	0.55 J	U	U	U	U	U	U	U	0.42 J	U
1,3-dichlorobenzene	U	U	U	U	U	U	0.81 J	U	U	U	U	U	U	U
2,2,4-trimethylpentane	U	U	U	U	U	U	U	U	0.23 J	U	U	U	1.1	U
4-ethyltoluene	6.9	1.0	U	U	U	U	U	U	U	U	U	U	0.55 J	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	0.34 J	U	0.35 J	U	U	U	0.49 J	U
acetone	50	30	300	440	27	16 J	23 B	28	35	19 J	63	7.6 J	36	10 J
benzene	0.45 J	4.1	0.42 J	0.7	0.97	1.8 J	0.30 J	0.25 J	0.33 J	3.9	0.65 J	0.53 J	0.37 J	0.84 J
carbon disulfide	0.73	U	U	U	U	U	0.46 J	0.21 J	U	U	U	0.44 J	1.5 J	U
carbon tetrachloride	U	U	U	U	0.96	U	0.54 J	1.8	0.51 J	U	1.5 J	U	1.5	U
chloroform	15	4.3	3.6	5.0	4.6	3.6 J	4.9	2.2	5.7	0.93 J	4.4 J	1.8	2.4	U
chloromethane	U	U	U	U	U	U	0.71 J	1.5	0.61 J	2.0 J	1.7 J	0.96 J	0.58 J	1 J
cis-1,2-dichloroethene	1.80	U	U	U	U	U	U	U	U	U	U	U	U	U
cumene	NA	NA	NA	NA	NA	U	U	U	U	U	0.98 J	0.26 J	0.14 J	U
cyclohexane	U	U	U	U	U	U	0.36 J	0.38 J	0.14 J	U	U	U	0.14 J	U
ethylbenzene	0.62 J	0.93	U	U	0.79	U	0.38 J	U	0.47 J	U	0.32 J	U	1.2	U
freon 11 (trichlorofluoromethane)	50	130	83	59	49	40	61	29	35	14	24	28	42	20
freon 113 (freon TF)	U	1.9	1.1 J	1.0 J	U	U	0.82 J	0.5 J	0.65 J	U	U	U	U	U
freon 12 (dichlorodifluoromethane)	3.7	16	6.1	6.1	6.4	11 J	7.1	4.7	6.5	4.4 J	6.9 J	4.5	6.8	3.4 J
freon 22	NA	NA	NA	NA	NA	320	94	33	45	42	510	U	3.3	280
heptane	0.83	12	U	U	0.87	1.9 J	0.37 J	U	0.30 J	2.5 J	U	U	U	U
hexane	U	U	U	U	U	U	0.66 J	0.27 J	0.27 J	U	U	0.17 J	0.3 J	U
isopropyl alcohol	U	U	U	U	U	U	7.9 J	2.1 J	13	U	10 J	2.4 J	11 J	U
m,p-xylene (sum of isomers)	1.3 J	3.3	U	U	2.4	U	0.99 J	U	1.4 J	U	0.50 J	0.13 J	4	2.6 J
methyl ethyl ketone	14	4.4	300	400	15	4.8 J	2.5 B	0.45 J	5	U	4.7 J	U	4	U
methyl isobutyl ketone	U	U	U	U	U	U	0.28 J	U	0.46 J	U	U	U	U	U
methylene chloride	2.2	U	U	U	U	U	0.64 J	1 J	0.41 J	3.8 J	U	0.5 J	U	U
naphthalene	U	U	U	U	U	U	1.9 J	U	U	U	U	U	U	U
n-Butane	NA	NA	NA	NA	NA	2.9 J	1.7	3.4	1.1 J	7.3	U	1.7	1.7	1.7 J
n-Propylbenzene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	0.3 J	U
o-xylene	0.84	1.8	U	U	1.0	U	0.42 J	U	0.53 J	U	U	U	1.4	U
styrene	U	U	U	U	U	U	0.15 J	U	0.14 J	U	U	U	0.15 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	U	U	1.9 J	U	U	U	0.65 JM	U
tetrachloroethylene (pce)	3.4	2.4	2.3	12	3.5	U	1.5	U	1.1 J	U	1.6 J	0.84 J	0.69 J	U
tetrahydrofuran	120	6.0	600	770	5.2	U	1.4 J	1.8 J	0.24 U	U	U	U	0.91 J	U
toluene	1.8	2.2	0.96	1.4	2.2	0.83 J	1.2	0.17 J	1.1	0.67 J	0.72 J	0.22 J	1.1	2.3 J
trichloroethylene (tce)	510	240	670	1,200	650	300	190	20	120	32	97	100	82	60
vinyl chloride	U	U	U	U	U	U	U	U	U	U	U	U	U	U

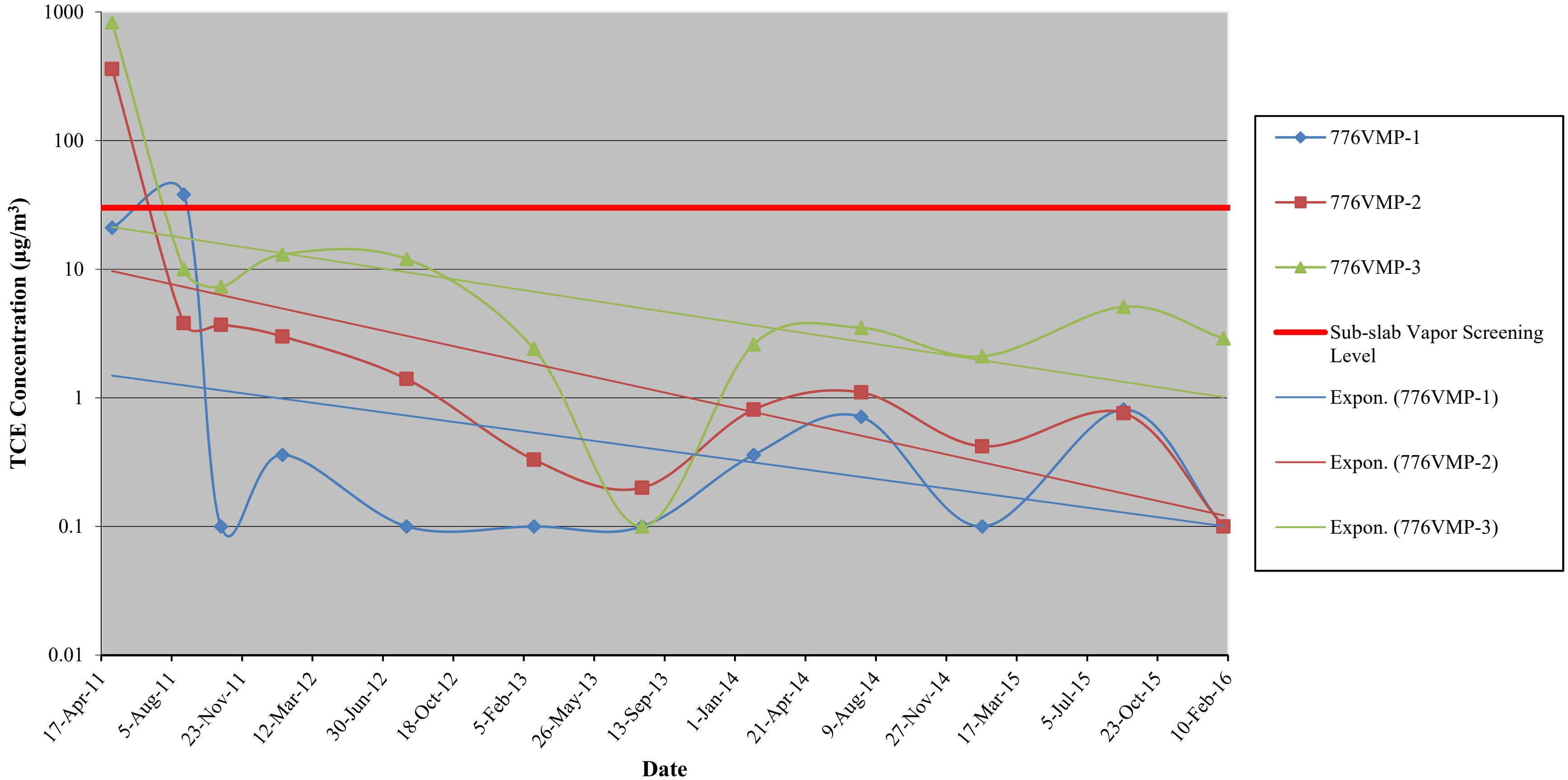
Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m^3: microgram per cubic meter.
B - Analytes detected in the trip blank.

Figure 5
Sub-Slab TCE Trend Chart Building 774
(May 2011 through February 2016)

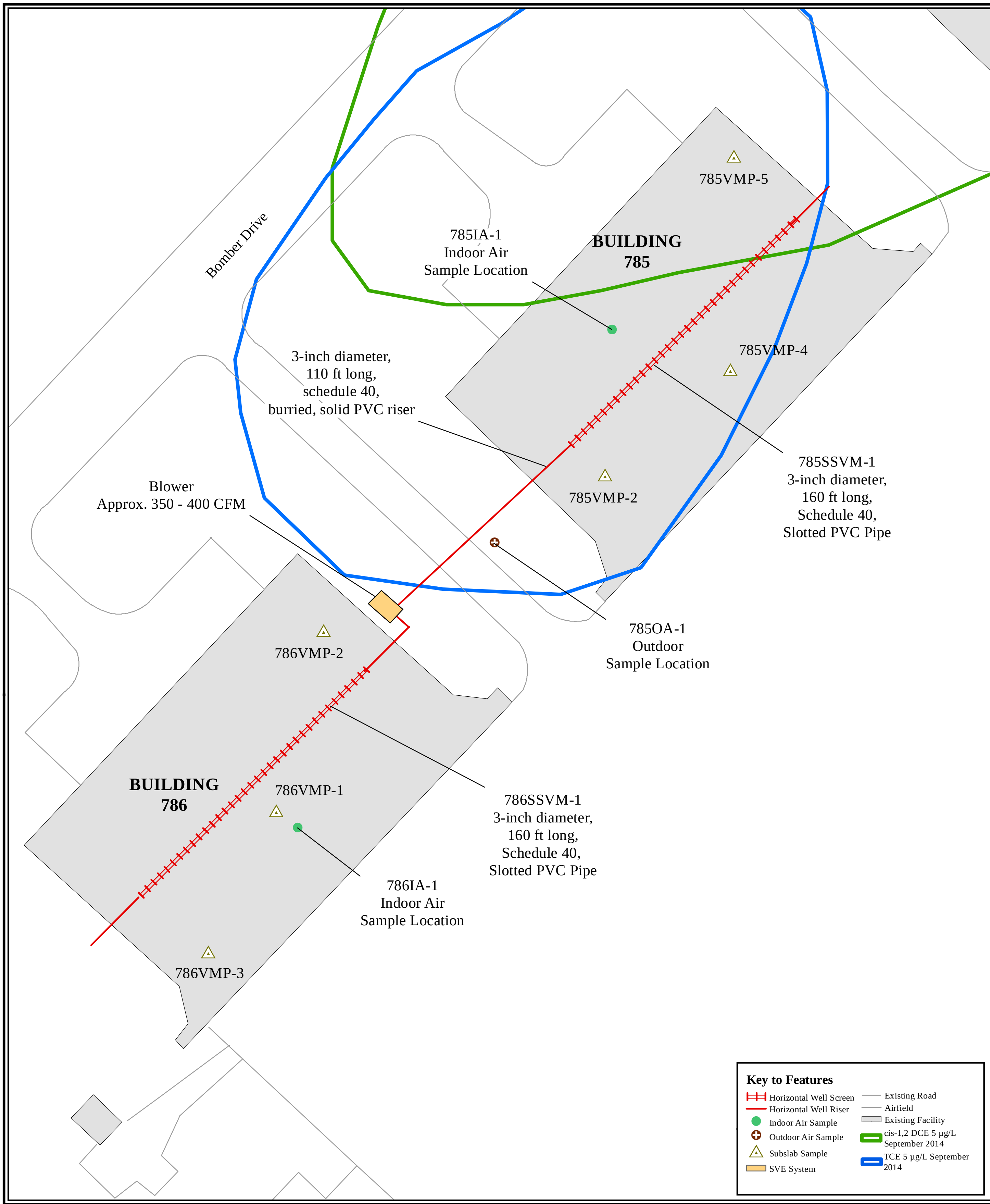


Note: Not detected results are plotted as 0.10 µg/m³.

Figure 6
Sub-Slab TCE Trend Chart Building 776
(May 2011 through February 2016)



Note: Not detected results are plotted as 0.10 µg/m³.



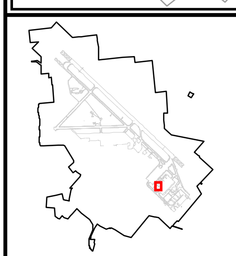


Figure 7
Buildings 785 and 786
SSVM System Layout

0 25 50 100
Feet

N

UNITED STATES AIR FORCE
GRIFFISS AIR FORCE BASE
ROME, NEW YORK

FPM Remediations, Inc

Y:\GIS_Projects\Griffiss\Projects\1015-11-01\SVI\SVI Proposed Plan\Figure 7.mxd

5.4.2.4 Ongoing Operations and Maintenance - Building 785 and 786

The Building 785 and 786 SSVM system has operated since May 2011. O&M includes weekly system component readings (system temperature, flow, vacuum and motor status), semi-annual VMP vacuum measurements, and GAC disposal and replacement every four months. Indoor and outdoor air sampling, sub-slab vapor sampling, and influent sampling are conducted semi-annually during the heating and cooling months (CAPE/FPM, July 2016). The system was shut down August 2013 and re-started September 2014 due to an electrical supply problem caused by renovations to Buildings 785 and 786. Prior to this shut down, semi-annual monitoring results from 2011 to 2014 show a decrease in TCE sub-slab vapor and indoor air concentrations. TCE concentrations decreased from 19 µg/m^3 to 7.2 µg/m^3 at 785VMP-2, 88 µg/m^3 to 17 µg/m^3 at 785VMP-4, 140 µg/m^3 to 7 µg/m^3 at 785VMP-5, 84 µg/m^3 to 16 µg/m^3 at 786VMP-1, 260 µg/m^3 to 150 µg/m^3 at 786VMP-2, and 51 µg/m^3 to 6.5 µg/m^3 at 786VMP-3. Semi-annual monitoring continued during the system shutdown to evaluate the rebound potential. Results showed that TCE concentrations increased to 400 µg/m^3 at 785VMP-2, 170 µg/m^3 at 785VMP-4, 510 µg/m^3 at 785VMP-5, 270 µg/m^3 at 786VMP-1, 410 µg/m^3 at 786VMP-2, and 200 µg/m^3 at 786VMP-3. The system was turned back online in September 2014. Monitoring results from 2015 and 2016 again showed a decrease in TCE concentrations. The February 2016 sampling results showed TCE concentrations at 1.1 µg/m^3 at 785VMP-2, 6 µg/m^3 at 785VMP-4, 7.3 µg/m^3 at 785VMP-5, 41 µg/m^3 at 786VMP-1, 0.41 J µg/m^3 at 786VMP-2, 0.4 J µg/m^3 at 786VMP-3.

No indoor air TCE concentrations were detected above the 2016 industrial EPA RSL (3 µg/m^3) from 2011 to 2016. All sub-slab vapor, indoor air, and outdoor air sampling results are presented in Table 7 and influent air sampling results are presented in Table 8. Figures 8 and 9 show the trend for sub-slab results at Buildings 785 and 786 since the start-up of the SSVM system. All indoor and outdoor air concentrations were within an acceptable range and did not pose any unacceptable risk to building occupants (CAPE/FPM, July 2016).

5.5 Conceptual Site Model

The contaminated groundwater is assumed to be the source of the contaminated soil vapors. These soil vapors prove to be a risk as they volatilize within the soils and migrate towards areas of lower chemical concentrations (i.e. within buildings). As these vapors enter these areas of lower concentration through various preferential pathways they may come in direct contact with humans (ITRC, January 2007). The conceptual site model for Buildings 774/776 and 785/786 is illustrated on Figure 10. Figure 11 illustrates soil vapor mitigation from contaminated groundwater into areas of lower chemical concentrations (i.e. within buildings).

5.6 Protectiveness of Interim Response Action

Performance monitoring data collected and evaluated from January 2011 through February 2016 shows that the systems are protective of human health. This data was compared to human health risk-based screening levels for inhalation of indoor air for an industrial scenario. The screening levels are identified as the current EPA RSLs (May 2016) for indoor air available at

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* (µg/m^3)	Indoor Air Screening Level* (µg/m^3)	785VMP-2												
Sample ID			785VMP0202AD	785VMP0202AE	785VMP0202AF	785VMP0202AG	785VMP0202AH	785VMP0202IA	785VMP0202JA	785VMP0202KA	785VMP0202LA	785VMP0202MA	785VMP0202NA	785VMP0202PA	785VMP0202QA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			18-Mar-2011	24-Aug-2011	24-Oct-2011	31-Jan-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	29-Jan-2014	18-Jul-2014	26-Jan-2015	1-Sep-2015	2-Feb-2016
Sample Depth (ft bgs / ags)			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in µg/m^3															
1,1,1-trichloroethane	220,000	22,000	U	U	U	0.57 J	U	U	U	0.43 J	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	1.5	1.4	U	U	3.7	1.6	U	U	U	1.4 J	0.72 J	3.9	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	U	U	U	U	1.0	0.46 J	U	U	U	0.38 J	U	1.1	U
1,3-butadiene	4.1	0.41	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	3.0	37	U	U	U	3.1	U	2.2	U
1,4-dichlorobenzene	23,360	2,336	U	1.5	U	U	U	U	U	U	U		U	0.21 J	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	0.36 J	U	6.6 J♦	U	U	U
2,2,4-trimethylpentane	NA	NA	U	U	1.2	U	1.5	5.8	0.17 J	U	U	U	U	U	0.2 J
4-ethyltoluene	NA	NA	0.65 J	U	U	U	1.2	0.65 J	U	U	U	0.30 J	U	0.98	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	0.33 J	U	U	U	U	U	U	0.45 J	U
acetone	1,400,000	140,000	10	17	3.2	0.76 J	12 JB	4.5 J	15	8.7 J	3.2 J	28	7.7 J	14	8.6 J♦
benzene	16	1.6	2.9	0.65	2.2	U	U	U	0.64	0.16 J	0.72	0.68 J	0.37 J	0.25 J	0.5 J
bromodichloromethane	3.3	0.33	U	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	0.82	0.63	U	U	0.86 J	U	0.70 J	0.41 J	0.43 J	4.7	0.65 J	4.8	0.6 J
carbon tetrachloride	20	2	U	U	0.70 J	0.49 J	0.46 J	0.44 J	0.46 J	U	0.33 J	0.86 J	0.42 J	0.57 J	0.4 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	1.5	U	U	U	U	U	0.16 J	0.55 J	0.24 J	26 J	U	0.28 J	U
chloromethane	3,900	390	1.4	1.1	U	3.5	37	0.21 J	8.8	3.7	5.1	12 J	2.2	4.2	0.6 J♦
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	0.5 J	0.24 J	2.0	U	0.16 J	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	0.19 J	U	0.61 J	U
cyclohexane	260,000	26,000	1.3	0.94	1.9	U	U	6.8	U	U	U	U	U	U	U
dibromochloromethane	10	NA	U	U	U	U	U	U	U	U	U	U	U	U	U
ethylbenzene	49	4.9	1.5	U	0.75	U	1.2	1.8	0.49 J	0.14 J	0.27 J	0.76 J	0.42 J	5.8	U
freon 11 (trichlorofluoromethane)	31,000	3,100	1	1.8	1.5	1.4	1.3	1.3	1.2	1.1	1.1 J	2.7	1.2	1.4	1.1
freon 113 (freon TF)	1,300,000	130,000	U	0.78 J	U	0.58 J	0.59 J	0.61 J	0.59 J	0.79 J	0.88 J	2.6 J	0.42 J	0.68 J	U
freon 114 (1,2-dichlorotetrafluoroethane)	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.8	3.1	2.6	2.9	2.4 J	2.3 J	2.5	2.3 J	3.1	4.6 J	2.4 J	2.7	1.8 J
freon 22	2,200,000	220,000	NA	NA	NA	U	U	0.81 J	0.90 J	0.83 J	U	2.0 J	0.75 J	0.95 J	0.8 J
heptane	NA	NA	2.1	U	1.8	U	3.8	3.4	0.22 J	U	U	U	U	U	0.3 J♦
hexane	31,000	3,100	6.9	U	6.1	U	1.3	9.8	0.18 J	0.2 J	U	7.5	0.74	0.23 J	0.3 J
isopropyl alcohol	NA	NA	U	U	U	U	13	470	2.4 J	U	U	29	U	4.2 J	U
m,p-xylene (sum of isomers)	4,400	440	4.7	0.93 J	2.3	0.21 J	4.5	6.8	0.93 J	0.35 J	0.63 J	1.6 J	1.1 J	6.5	0.4 J
methyl butyl ketone	NA	NA	U	U	U	U	0.47 J	U	1.0 J	0.25 J	U	1.2 J♦	U	0.77 J	0.4 J♦
methyl ethyl ketone	220,000	22,000	3	4.1	U	U	3.3 B	6.3	7.1	U	U	10	2.2	3.6	2.1 ♦
methyl isobutyl ketone	130,000	13,000	U	U	U	U	1.0 J	U	1.2 J	1.5	U	1.2 J	U	0.96 J	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	0.38 J	U	U	U
methylene chloride	12,000	1,200	1.4	U	U	U	2.4	U	0.40 J	0.41 J	U	0.45 J♦	U	U	0.7 J♦
naphthalene	3.6	0.36	U	U	U	U	2.2 J	U	U	U	U	U	U	0.54 J	U
n-Butane	NA	NA	NA	NA	NA	0.64 J	6.3	0.52 J	1.3	1 J	1.6	2.9	U	1 J	0.7 J
n-Propylbenzene	NA	NA	NA	NA	NA	U	0.68 J	U	U	U	U	U	U	0.78 J	U
o-xylene	4,400	440	1.3	U	0.71	U	1.6	2.4	0.27 J	0.14 J	0.23 J	0.68 J	0.53 J	2.9	0.2 J♦
styrene	44,000	4,400	U	U	U	U	0.46 J	0.37 J	U	U	U	0.29 J	U	0.52 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	1.8 J	U	2.7 J	1.6 J	U	8.9 J	U	3.3 J	U
tetrachloroethylene (pce)	470	47	U	U	U	U	0.73 J	0.58 J	0.51 J	U	U	U	U	U	U
tetrahydrofuran	NA	NA	8.2	11	U	4.6 J	87	U	68	46	13 J	95 J	8.2 J	21	U
toluene	220,000	22,000	15	3.3	6.2	0.36 JB	3.8	7.5	2.3	0.47 J	1.1	1.9	1.3 J	2.1	0.6 J
trichloroethylene (tce)	30	3	U	19	8.9	1.0 J	9.1	0.68 J	7.2	37	6.1	400	0.6 J	15	1.1
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
D - The reported value is from a dilution
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m^3: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* (µg/m³)	Indoor Air Screening Level* (µg/m³)	785VMP-4												
Sample ID			785VMP0401AA	785VMP0401AB	785VMP0401AC	785VMP0401AD	785VMP0401AG	785VMP0401HA	785VMP0401IA	785VMP0401JA	785VMP0401KA	785VMP0401LA	785VMP0401NA	785VMP0401PA	785VMP0401QA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			18-Mar-2011	24-Aug-2011	24-Oct-2011	31-Jan-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	28-Feb-2014	18-Jul-2014	26-Jan-2015	1-Sep-2015	2-Feb-2016
Sample Depth (ft bgs / ags)			1	1	1	1	1	1	1	1	1	1	1	1	1
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in µg/m³															
1,1,1-trichloroethane	220,000	22,000	1.7	0.72 J	U	U	0.40 J	U	0.28 J	0.93 J	0.56 J	U	U	U	U
1,2,4-trimethylbenzene	310	31	0.95	6.7	1.8	0.45 J	15	1.4	1.4	1.1 J	0.20 J	U	0.51 J	11 D	29
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	U	2.1	0.50 J	U	3.9	0.49 J	0.39 J	U	0.072 J	U	U	3.1 JD	9
1,3-butadiene	4.1	0.41	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	30	1.8	U	U	U	U	U	U
1,4-dichlorobenzene	23,360	2,336	U	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U	2.7 J
2,2,4-trimethylpentane	NA	NA	U	1.5	3.9	0.58 J	U	5.5	0.71 J	U	U	U	U	U	0.5 J
4-ethyltoluene	NA	NA	U	2.7	0.85	U	3.6	0.49 J	0.31 J	U	U	U	U	4.2 JD	12
4-isopropyltoluene	NA	NA	NA	NA	NA	U	1.6	U	U	1.1 J	U	U	U	U	0.23 J
acetone	1,400,000	140,000	15	16	U	4.9 J	44	8.1 J	73	120	7.2 J	7900	22	120 D	51
benzene	16	1.6	4.9	4.2	8.4	0.64	0.57 J	0.61 J	0.58 J	0.89 J	0.58 J	U	0.63 J	0.75 JDM	2.8
bromodichloromethane	3.3	0.33	2.6	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	4.8	13	9.2	1.1 J	12	0.48 J	2.7	8.3	2.0	U	1.6	21 D	2.6
carbon tetrachloride	20	2	U	U	U	0.51 J	0.47 J	0.43 J	0.39 J	U	U	U	0.46 J	0.53 JD	0.38 J
chlorobenzene	2,200	220	U	0.66 J	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	91	0.79	U	U	0.47 J	U	0.33 J	0.74 J	2.5	U	U	1.7 JDM	U
chloromethane	3,900	390	U	U	U	U	0.30 J	0.15 J	0.29 J	0.43 J	U	U	U	U	0.42 J
cis-1,2-dichloroethene	NA	NA	2.3	U	U	U	U	U	U	0.75 J	U	U	U	5.1 D	1.8
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	1.5 J	U	U	U	0.57 JD	2.1
cyclohexane	260,000	26,000	6.2	9.4	8.0	0.34 JB	2.1	6.8	1.5	U	U	U	U	U	U
dibromochloromethane	10	NA	U	U	U	0.34 JB	2.1	6.8	1.5	U	U	U	U	U	U
ethylbenzene	49	4.9	1.1	6.1	4.9	0.58 J	3.9	3.1	1.9	1.8	0.39 J	U	0.41 J	4.5	12
freon 11 (trichlorofluoromethane)	31,000	3,100	0.86	1.7	1.3	1.4	1.4	1.3	1.1	1.3 J	0.83 J	U	1.1	1.5 J	1 J
freon 113 (freon TF)	1,300,000	130,000	1.1 J	0.86 J	U	0.58 J	0.69 J	0.64 J	0.60 J	0.91 J	0.97 J	U	0.55 J	U	U
freon 114 (1,2-dichlorotetrafluoroethane)	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.9	2.8	2.5	2.9	2.6	2.6	2.3 J	U	2.5	U	2.4 J	3.1 J	1.7 J
freon 22	2,200,000	220,000	NA	NA	NA	U	U	0.77 J	0.88 J	U	0.75 J	U	0.82 J	U	0.74 J
heptane	NA	NA	3.6	5.3	8.2	0.45 JB	1.1	3.6	0.69 J	U	U	U	U	U	2.5
hexane	31,000	3,100	8.2	7.9	13	0.91 B	1.4	9.3	0.57 J	6	0.69	U	1	U	1.2
isopropyl alcohol	NA	NA	U	U	0.62	2.3 J	15	190	5.5 J	10 J	1.3 J	U	U	U	U
m,p-xylene (sum of isomers)	4,400	440	2.7	14	14	1.1 J	3.4	8.7	2.8	1.9 J	0.73 J	U	1.2 J	16	38
methyl butyl ketone	NA	NA	U	U	U	U	0.94 J	U	0.61 J	1.2 J	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	2.3	2.7	U	0.82 J	10 B	4.4	14	19	U	2300	7.6	55	14
methyl isobutyl ketone	130,000	13,000	U	U	U	U	1.3 J	U	1.7 J	U	2.9	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	0.95	U	U	0.43 J	0.82 J	0.52 J	0.95 J	1.7 J	U	U	0.76 J	U	0.68 J
naphthalene	3.6	0.36	U	U	U	U	0.68 J	U	0.72 J	U	U	U	U	U	U
n-Butane	NA	NA	NA	NA	NA	4.6	3.8	0.44 J	0.91 J	1.6 J	U	U	1.2	U	0.41 J
n-Propylbenzene	NA	NA	NA	NA	NA	U	1.5	U	0.31 J	U	U	U	U	2.6 J	7.9
o-xylene	4,400	440	0.84	5.1	2.8	0.46 J	1.7	3.4	1.1	0.8 J	0.41 J	U	0.48 J	5.3	17
styrene	44,000	4,400	U	U	U	U	0.30 J	0.35 J	0.34 J	0.33 J	U	U	U	1.4 J	5.5
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	1.8 J	U	1.2 J	2.2 J	U	U	U	U	3.4 J
tetrachloroethylene (pce)	470	47	U	U	1.0	U	1.2 J	0.62 J	0.34 J	0.4 J	U	U	U	U	0.24 J
tetrahydrofuran	NA	NA	U	U	U	U	3.4 J	U	U	0.95 J	U	20,000	19	360	52
toluene	220,000	22,000	26	23	42	2.2 B	5.9	8.1	3.3	4.2	1.2	U	1.9	6.7	15
trichloroethylene (tce)	30	3	720	88	33	3.5	39	3	17	54	27	170 J	1.2	33	6
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
D - The reported value is from a dilution
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m³: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* (µg/m³)	Indoor Air Screening Level* (µg/m³)	785VMP-5											
Sample ID			785VMP0501AA	785VMP0501AB	785VMP0501AC	785VMP0501AD	785VMP0501FA	785VMP0501GA	785VMP0501HA	785VMP0501IA	785VMP0501JA	785VMP0501NA	785VMP0501PA	785VMP0501PA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			25-Aug-2011	24-Oct-2011	31-Jan-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	29-Jan-2014	18-Jul-2014	26-Jan-2015	1-Sep-2015	2-Feb-2016
Sample Depth (ft bgs / ags)			1	1	1	1	1	1	1	1	1	1	1	1
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in µg/m³														
1,1,1-trichloroethane	220,000	22,000	4.8	1.8	0.53 J	0.74 J	U	0.54 J	1.4	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	2.2	1.4	U	0.69 J	0.71 J	U	U	0.55 J	U	1.1 J	9.3 D	0.35 JD
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	0.28 J	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	0.85	U	U	U	0.31 J	U	U	U	U	U	2.4 JD	U
1,3-butadiene	4.1	0.41	U	U	U	U	U	U	U	U	U	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	17	U	U	U	U	U	U	U
1,4-dichlorobenzene	23,360	2,336	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	0.48 J	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	U	1.4	1.3	0.92	6.5	0.96	U	U	U	U	U	U
4-ethyltoluene	NA	NA	0.50 J	U	U	U	0.34 J	U	U	U	U	U	2.6 JD	U
4-isopropyltoluene	NA	NA	NA	NA	U	0.64 J	U	U	U	U	U	U	U	U
acetone	1,400,000	140,000	21	4.3	2.3 J	20 B	6.8 J	8.2 J	2.8 J	10 J	2600	54	77 D	23 D
benzene	16	1.6	0.39 J	2.6	0.64	0.50 J	0.69	0.38 J	0.27 J	0.62	U	3.3	8.6 D	3.5 D
bromodichloromethane	3.3	0.33	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	0.38 J	U	U	2.7	U	U	U	U	U	U	6.8 JD	11 D
carbon tetrachloride	20	2	U	U	0.48 J	0.45 J	0.48 J	0.31 J	0.38 J	0.39 J	U	U	0.92 JD	0.42 JDM
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	2.8	0.74	U	U	U	0.19 J	0.21 J	U	46 J	U	U	U
chloromethane	3,900	390	U	U	U	0.97 J	0.85 J	0.48 J	0.42 J	1.4	U	U	U	0.36 JD
cis-1,2-dichloroethene	NA	NA	2.1	U	U	U	U	0.41 J	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	0.41 J	U	U	U	U	U	U	U	1.2 JD	U
cyclohexane	260,000	26,000	U	2.9	1.1 B	U	U	U	U	U	U	U	U	U
dibromochloromethane	10	NA	U	U	U	U	U	U	U	U	U	U	U	U
ethylbenzene	49	4.9	2.3	1.6	1.8	3.8	2.1	U	0.7 J	0.55 J	U	2.2 J	6.7	0.57 J
freon 11 (trichlorofluoromethane)	31,000	3,100	2.2	2.3	1.4	1.5	1.4	1.5	1.4	1.4	U	U	1.5 J	1 J
freon 113 (freon TF)	1,300,000	130,000	0.86 J	U	U	0.58 J	0.62 J	0.50 J	0.58 J	0.60 J	U	U	U	U
freon 114 (1,2-dichlorotetrafluoroethane)	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.9	2.5	2.8	2.4 J	2.6	2.2 J	2.4 J	3.2	U	2.2 J	2.9 J	1.9 J
freon 22	2,200,000	220,000	NA	NA	U	U	0.95 J	0.90 J	U	1.2 J	U	U	U	0.73 J
heptane	NA	NA	U	1.9	0.70 JB	1.4	3.4	0.92	U	0.56 J	U	U	U	U
hexane	31,000	3,100	U	U	3.5 B	1.3	9.9	1.4	0.18 J	0.83	U	U	U	U
isopropyl alcohol	NA	NA	8.2	U	U	2.1 J	290	15	U	22	U	8.1 J	U	U
m,p-xylene (sum of isomers)	4,400	440	8.2	5.8	3.6	14	7.5	U	2 J	1.5 J	U	6 J	21	1.3 J
methyl butyl ketone	NA	NA	U	U	U	0.86 J	U	U	U	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	2	U	0.37 J	4.3 B	3.9	0.49 J	U	1.5	1200	13	U	4.9
methyl isobutyl ketone	130,000	13,000	U	U	U	0.49 J	U	U	0.48 J	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	3.7	U	U	0.59 J	0.6 J	0.43 J	1.7 J	0.72 J	U	U	U	U
naphthalene	3.6	0.36	U	U	U	0.46 J	U	U	U	U	U	U	U	U
n-Butane	NA	NA	NA	NA	4.8	4.4	1.5	0.57 J	0.64 J	3.0	U	U	U	U
n-Propylbenzene	NA	NA	NA	NA	U	U	U	U	U	U	U	U	1.5 J	U
o-xylene	4,400	440	3	1.5	1.7	4.7	2.4	U	0.63 J	0.58 J	U	2.1 J	8.1	0.46 J
styrene	44,000	4,400	U	U	U	0.64 J	U	U	U	0.58 J	U	3.9	22	1.1 J
tert-Butyl alcohol	NA	NA	NA	NA	U	0.96 J	U	0.55 J	U	2.5 J	U	U	U	U
tetrachloroethylene (pce)	470	47	2.2	U	U	U	U	U	0.3 J	U	U	U	U	U
tetrahydrofuran	NA	NA	U	U	0.21 J	0.41 J	U	U	U	U	6900	230	540	67
toluene	220,000	22,000	2.1	7.4	1.6 B	3.7	4.9	1.2	0.69 J	3.2	U	U	2.6 J	0.77 J
trichloroethylene (tce)	30	3	610	140	18	20	1.1	7	73	1.2	510	41	150	7.3
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:

U - Not detected.

J- The analyte was positively identified; the quantitation is an estimation.

D - The reported value is from a dilution

M - Lab qualifier for manual integrated compound

NA- Not Available

µg/m³: microgram per cubic meter.

▭ Exceedance of EPA Commercial Regional Screening Levels.

B - Analytes detected in the trip blank.

♦-Denotes higher nominal value of duplicate sample result.

*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* (µg/m³)	Indoor Air Screening Level* (µg/m³)	785-IA											
Sample ID			785IA05	785IA06	785IA07	785IA08	785IA09	785IA10	785IA11	785IA12	785IA13	785IA14	785IA15	785IA1QA
Sample Type			Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor
Sample Date			24-Aug-2011	24-Oct-2011	27-Jan-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	28-Jan-2014	17-Jul-2014	26-Jan-2015	1-Sep-2015	1-Feb-2016
Sample Depth (ft bgs / ags)			5	5	5	5	5	5	5	5	5	5	5	5
Sample Collection Duration (hr)			12	12	12	12	12	12	12	12	12	12	12	8
Volatiles (TO-15) in µg/m³														
1,1,1-trichloroethane	220,000	22,000	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	1.7	1.4	U	0.37 J	U	0.49 J	U	U	0.42 J	0.21 J	2.4	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	U	U	U	U	U	U	U	U	0.15 J	U	0.54 J	U
1,3-butadiene	4.1	0.41	U	U	U	U	0.32 J	U	U	U	U	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dichlorobenzene	23,360	2,336	U	U	U	U	U	U	U	U	0.11 J		U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	11 J	U	U	U
2,2,4-trimethylpentane	NA	NA	U	0.52 J	0.29 J	U	U	U	U	U	U	U	0.24 J	0.25 J
4-ethyltoluene	NA	NA	U	U	U	U	U	U	U	U	0.12 J	U	0.61 J	U
4-isopropyltoluene	NA	NA	NA	NA	U	U	U	U	U	U	0.56 J	U	U	U
acetone	1,400,000	140,000	35	11	2.6 J	16 B	9.3 J	9.7 J	6.6 J	U	19	U	9.3 J	4.3 J
benzene	16	1.6	U	1.3	0.58 J	0.36 J	U	U	0.31 J	0.48 J	0.30 J	0.64	0.37 JM	0.48 J
bromodichloromethane	3.3	0.33	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	U	U	U	U	U	U	U	0.76 J	6.8	U	0.92 J	0.29 J
carbon tetrachloride	20	2	U	U	0.53 J	0.44 J	U	0.48 J	0.43 J	0.49 J	0.51 J	0.47 J	0.45 J	0.37 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U		U	U	0.3 J	U	U	U	U	U
chloroform	5.3	0.53	U	4.7	U	U	U	U	0.39 J	U	U	U	U	U
chloromethane	3,900	390	U	U	1.2	1.1	1.2	1	1.9	1.6	1.5	1.1	0.97 J	1
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	U	0.84	U	U	U
cumene	18,000	1,800	NA	NA	U	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	U	U	0.34 JB	U	U	U	U	U	U	U	0.41 JM	U
dibromochloromethane	10	NA	U	U	U	U	U	U	U	U	U	U	U	U
ethylbenzene	49	4.9	U	0.75	0.13 J	0.22 J	U	0.19 J	0.13 J	U	0.69 J	0.21 J	0.52 J	U
freon 11 (trichlorofluoromethane)	31,000	3,100	1.7	1.3	1.4	1.3	1.4	1.3	1.2	1.4	1.5	1.2	1.2	0.99 J
freon 113 (freon TF)	1,300,000	130,000	U	U	0.54 J	0.58 J	0.65 J	0.59 J	0.56 J	0.63 J	0.69 J	0.45 J	0.47 J	U
freon 114 (1,2-dichlorotetrafluoroethane)	NA	NA	U	U	U	U	U	U	U	U	U	U	5.7	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.8	2.3	2.8	2.3 J	2.6	2.3 J	2..5	3.0	2.6	2.6	3.4	1.7 J
freon 22	2,200,000	220,000	NA	NA	U	U	1 J	1.0 J	U	1.1 J	1.1 J	0.84 J	1.4 J	0.74 J
heptane	NA	NA	U	0.71	0.37 JB	0.70 J	U	U	U	U	U	U	0.43 JM	0.24 JM
hexane	31,000	3,100	U	2.3	2.0 B	0.75	U	U	0.28 J	U	0.29 J	2.2	0.99	0.47 J
isopropyl alcohol	NA	NA	24	U	U	0.84 J	U	U	U	U	2.1 J	U	U	U
m,p-xylene (sum of isomers)	4,400	440	1.0 J	2.4	0.29 J	0.65 J	U	0.66 J	0.33 J	U	2.1 J	0.53 J	2.2	U
methyl butyl ketone	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	3.2	U	0.30 J	2.3 B	1.1 J	1.7	1.1 J	1.0 J	3.9	U	1.2 J	0.95 J
methyl isobutyl ketone	130,000	13,000	U	U	U	0.38 J	U	0.37 J	U	U	0.37 J	U	2.3	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	0.85	U	U	0.51 J	U	U	0.63 J	0.69 J	U	0.88 J	1.4 J	0.73 J
naphthalene	3.6	0.36	U	U	U	U	U	U	U	U	U	U	0.22 J	U
n-Butane	NA	NA	NA	NA	2.0	2.5	1.3	0.70 J	1.1 J	1.4	U	5.9	7.4	1.1 J
n-Propylbenzene	NA	NA	NA	NA	U	U	U	U	U	U	U	U	0.37 J	U
o-xylene	4,400	440	U	0.75	0.11 J	0.22 J	U	0.25 JM	0.14 J	U	0.40 J	0.2 J	1.2	U
styrene	44,000	4,400	U	U	U	U	U	U	U	U	U	U	0.069 J	U
tert-Butyl alcohol	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
tetrachloroethylene (pce)	470	47	U	21	U	U	U	U	U	U	U	U	U	U
tetrahydrofuran	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
toluene	220,000	22,000	4.2	4.0	1.4 B	1.3	U	0.84	0.75	0.33 J	1.3	0.97	0.89	3
trichloroethylene (tce)	30	3	1.1	U	U	U	U	U	U	U	0.88 J	U	U	U
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
D - The reported value is from a dilution
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m³: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* (µg/m³)	Indoor Air Screening Level* (µg/m³)	785/786-OA											
Sample ID			785OA01	785786OA02	785786OA03	785786OA04	785786OA05	785786OA06	785786OA07	785786OA08	785786OA09	785786OA10	785786OA11	785786OA1QA
Sample Type			Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor	Outdoor
Sample Date			24-Aug-2011	24-Oct-2011	27-Jan-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	28-Jan-2014	17-Jul-2014	26-Jan-2015	1-Sep-2015	1-Feb-2016
Sample Depth (ft bgs / ags)			5	5	5	5	5	5	5	5	5	5	5	5
Sample Collection Duration (hr)			12	12	12	12	12	12	12	12	12	12	12	8
Volatiles (TO-15) in µg/m³														
1,1,1-trichloroethane	220,000	22,000	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	1.3	2.6	U	0.73 J	U	U	U	U	0.073 J	U	0.091 J	U
1,2-dichloroethane	4.7	0.47	U	U	U	2.6	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,3-butadiene	4.1	0.41	U	U	U	U	U	U	U	U	U	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dichlorobenzene	23,360	2,336	U	U	U	U	U	U	U	U	U		U	U
1,4-dioxane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	U	0.76	0.34 J	0.56 J	U	0.23 J	U	U	U	U	U	U
4-ethyltoluene	NA	NA	U	0.65 J	U	U	U	U	U	U	U	U	U	U
4-isopropyltoluene	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
acetone	1,400,000	140,000	39	12	19	150	4 J	22	8.5 J	3.3 J	6.2 J	U	12 J	4 J
benzene	16	1.6	0.39 J	1.8	0.56 J	0.80 J	0.78	0.32 J	U	0.53 J	0.14 J	0.5 J	0.3 J	0.37 JM
bromodichloromethane	3.3	0.33	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	U	U	U	0.78 J	U	0.57 J	U	U	0.59 J	U	0.8 J	2.8
carbon tetrachloride	20	2	U	U	0.52 J	U	0.54 J	0.47 J	0.4 J	0.56 J	0.30 J	0.5 J	0.45 J	0.41 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U
chloroethane	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	U	U	U	U	U	U	U	U	U	U	U	U
chloromethane	3,900	390	U	U	1.2	1.2 J	1.4	1.0 J	1.1 J	1.7	1.2	1.3	0.93 J	1.1
cis-1,2-dichloroethene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	U	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	0.77	U	U	U	U	U	U	U	U	U	U	U
dibromochloromethane	10	NA	U	U	U	U	U	U	U	U	U	2.8	U	U
ethylbenzene	49	4.9	U	1.3	U	1.4 J	U	0.13 J	U	U	U	U	0.099 J	U
freon 11 (trichlorofluoromethane)	31,000	3,100	1.7	1.4	1.4	1.4 J	1.4	1.2	1.2	1.5	1.2	1.3	1.2	1.1 J
freon 113 (freon TF)	1,300,000	130,000	U	U	0.59 J	0.70 J	U	0.55 J	0.54 J	0.70 J	0.54 J	0.49 J	0.49 J	U
freon 114 (1,2-dichlorotetrafluoroethane)	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.9	2.2	2.8	3.2 J	2.7	2.1 J	2.3 J	3.3	2.5	U	2.3 J	1.6 J
freon 22	2,200,000	220,000	NA	NA	U	U	0.92 J	0.99 J	U	1.3 J	0.84 J	0.93 J	0.96 J	0.72 J
heptane	NA	NA	U	1.2	0.55 JB	2.7	U	0.14 J	0.89 J	U	U	U	U	0.23 J
hexane	31,000	3,100	U	3.8	2.2 B	4.4	U	0.25 J	0.19 J	0.22 J	U	U	U	0.2 J
isopropyl alcohol	NA	NA	15	2.2	1.3 J	11 J	U	1.6 J	U	U	1.1 J	U	U	U
m,p-xylene (sum of isomers)	4,400	440	0.75 J	4.3	0.30 J	3.8 J	U	0.37 J	U	U	0.14 J	U	0.33 J	U
methyl butyl ketone	NA	NA	U	U	U	1.1 J	U	0.37 J	2.2	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	3.4	U	0.92 J	8.6 B	U	3.3	U	U	1.3 J	U	1.7	0.69 J
methyl isobutyl ketone	130,000	13,000	U	U	U	U	U	0.17 J	0.28 J	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	1.1	1.3	0.53 J	2.4 J	U	6.5	0.58 J	1.0 J	0.68 J	U	1.4 J	0.65 J
naphthalene	3.6	0.36	U	U	U	1.1 J	U	U	U	U	U	U	U	U
n-Butane	NA	NA	NA	NA	1.9	30	1.4	0.54 J	0.95 J	1.5	U	1.3	0.75 J	0.94 J
n-Propylbenzene	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
o-xylene	4,400	440	U	1.3	U	1.3 J	U	0.12 J	U	U	U	U	0.16 JM	U
styrene	44,000	4,400	U	U	U	0.74 J	U	U	U	U	U	U	U	U
tert-Butyl alcohol	NA	NA	NA	NA	U	1.8 J	U	0.93 J	U	U	U	U	U	U
tetrachloroethylene (pce)	470	47	U	U	U	1.7 J	U	U	U	U	U	U	U	U
tetrahydrofuran	NA	NA	U	U	U	5.9 J	U	U	U	U	U	U	U	U
toluene	220,000	22,000	2.3	7.2	0.57 JB	17	0.55 J	0.74	0.57 J	0.34 J	0.58 J	0.28 J	0.62 J	1.5
trichloroethylene (tce)	30	3	0.82	0.82	U	U	U	U	U	U	U	U	U	U
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
D - The reported value is from a dilution
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m³: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* (µg/m³)	Indoor Air Screening Level* (µg/m³)	786VMP-1												
Sample ID			**786VMP0102AA**	**786VMP0102AB**	**786VMP0102AC**	**786VMP0102AD**	**786VMP0102AG**	**786VMP0102HA**	**786VMP0102IA**	**786VMP0102JA**	**786VMP0102KA**	**786VMP0102LA**	**786VMP0102NA**	**786VMP0102PA**	**786VMP0102QA**
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			18-Jan-2011	24-Aug-2011	24-Oct-2011	27-Jan-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	26-Feb-2014	18-Jul-2014	26-Jan-2015	1-Sep-2015	2-Feb-2016
Sample Depth (ft bgs / ags)			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in µg/m³															
1,1,1-trichloroethane	220,000	22,000	12	U	U	U	U	U	U	0.53 J	U	U	U	U	U
1,1-dichloroethane	77	7.7	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	U	U	U	U	U	0.59 J	U	U	0.65 J
1,2,4-trimethylbenzene	310	31	7.5	6.9	1.2	U	0.38 J	1.0	1.7	1.3	0.31 J	4.2	0.48 J	1.7	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	5.2	1.9	U	U	U	0.33 J	0.46 J	0.38 J	U	1.3 J	U	0.5 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	17 J	2.3	U	1.8 J	16	U	1.8	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	U	U	U	U	U	U	0.16 J	U
2-chlorotoluene	NA	NA	NA	NA	NA	U	U	U	U	U	U	0.30 J	U	U	U
2,2,4-trimethylpentane	NA	NA	19	0.95	3.8	1.9	U	7 J	1.3	U	U	1.2 J	U	U	U
4-ethyltoluene	NA	NA	3.2	2.7	0.65 J	U	U	0.29 J	0.54 J	0.23 J	U	1.4 J	U	0.59 J	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	0.27 J	U
acetone	1,400,000	140,000	31	20	U	3.3 J	7.8 JB	12 J	7.8 J	9.2 J	U	26	3.7 J	15	3.6 J
benzene	16	1.6	19	3.1	9.1	U	U	U	0.66	0.47 J	0.71 J	1.4	0.43 J	0.31 J	0.3 J
bromodichloromethane	3.3	0.33	4.0	U	U	U	U	U	U	U	U	U	U	U	U
bromomethane	220	22	U	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	15	0.63	U	U	0.65 J	U	0.56 J	2.6	U	8.2	U	0.69 JM	1 J
carbon tetrachloride	20	2	U	U	0.70 J	0.43 J	0.52 J	0.41 J♦	0.35 JM	0.37 J♦	U	0.53 J	U	0.78 J	0.2 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	0.90 J	U	U	U
chloroform	5.3	0.53	30	0.84	U	U	0.43 J	U	U	1.1	U	2.6	U	1.1	U
chloromethane	3,900	390	U	U	U	U	0.24 J	0.2 J	0.18 J	0.27 J	U	U	U	0.31 J	0.22 J
cis-1,2-dichloroethene	NA	NA	9.7	U	U	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	0.67 J	U	0.45 J	U
cyclohexane	260,000	26,000	U	2.5	5.7	2.8	U	8.7 J	U	0.25 J	U	2.7	U	U	0.14 J
ethyl acetate	3,100	310	U	U	U	U	U	U	NA	U	U	U	U	U	U
ethylbenzene	49	4.9	6.6	4.6	3.1	U	0.34 J	0.89	1	2	0.40 J	4.6	0.24 J	4.5	U
freon 11 (trichlorofluoromethane)	31,000	3,100	3.0	1.8	2.6	1.3	1.3	1.3	1.1	1.3	U	1.6 J	U	2.1	0.89 J
freon 113 (freon TF)	1,300,000	130,000	U	0.86 J	0.78 J	0.64 J	0.62 J	0.64 J	0.52 J	0.61 J	U	0.84 J	0.38 J	0.99 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	3.8	2.9	U	2.7	2.4 J	2.6 ♦	2.2 J♦	2.3 J	2.0 J	2.9 J	2.4 J	4	1.5 J
freon 22	2,200,000	220,000	NA	NA	NA	U	0.86 J	0.89 J♦	0.79 J♦	0.79 J	U	0.92 J	0.68 J	1.4 J	1 J
heptane	NA	NA	25	3.4	8.1	4.1	U	3.9 J	0.39 J♦	0.37 J	U	1.0 J	U	U	U
hexane	31,000	3,100	52	4.9	16	10	U	13 J	0.22 J♦	2.5	0.81 J	1.5	U	U	1.7
isopropyl alcohol	NA	NA	U	14	U	1.1 J	0.87 J	98 J	6.6 J	14	120	68	2.2 J	4.5 J	U
m,p-xylene (sum of isomers)	4,400	440	17	19	11	0.32 J	1.0 J	3.4	3.6	5.6	1.2 J	13	0.69 J	5	0.36 J
methyl butyl ketone	NA	NA	U	U	U	U	U	U	0.31 J♦	0.34 J	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	U	2.3	U	0.55 J	1.3 JB	4.1 J	1.4 J♦	3.6	U	11	U	2.3	1.1 J
methyl isobutyl ketone	130,000	13,000	U	U	U	3.5	U	U	U	1.2 J	U	1.4 J	U	0.88 J	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	2.8 J	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	1.3 J	U	U	U
methylene chloride	12,000	1,200	3.8	U	U	U	0.44 J	0.55 J	0.40 J♦	0.84 J	U	U	U	0.97 JM	0.66 J
naphthalene	3.6	0.36	U	U	U	U	U	U	0.98 J	0.85 J	U	U	U	0.99 J	0.58 J
n-Butane	NA	NA	NA	NA	NA	U	0.43 J	1.2 J♦	U	0.44 J	5.0	2.9	U	4.3	12
n-Propylbenzene	44,000	4,400	NA	NA	NA	U	U	U	U	U	U	1.0 J	U	0.46 J	U
o-xylene	4,400	440	7.5	4.9	2.0	0.11 J	0.39 J	1.3	1.4	1.6	1.7 J	4.3	0.14 J	2.0	0.38 J
styrene	44,000	4,400	U	U	U	U	0.20 J	0.2 J	0.37 J♦	0.43 J	U	2.5	U	0.45 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	U	U	0.69 J♦	1.8 J	U	16 J	U	4.1 J	U
tetrachloroethylene (pce)	470	47	140	3.7	2.0	2.4	1.5	0.5 J	0.71 J♦	3.3	U	8.3	U	6.4	0.83 J
tetrahydrofuran	NA	NA	U	U	U	U	0.43 J	U	U	2.5 J	U	7.5 J	U	U	U
toluene	220,000	22,000	35	15	29	0.61 J	1.5	3.7 J	3	4.2	3.0	14	0.85	2.5	U
trichloroethylene (tce)	30	3	4,900	84	49	13	24	9.1 J♦	16♦	140♦	26	270	U	160	41
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m³: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location	Sub-slab Vapor Screening Level* ($\mu g/m^3$)	Indoor Air Screening Level* ($\mu g/m^3$)	786VMP-2												
Sample ID			786VMP0202AA	786VMP0202AB	786VMP0202AC	786VMP0202AE	786VMP0202AG	786VMP0202HA	786VMP0202IA	786VMP0202JA	786VMP0202KA	786VMP0202LA	786VMP0202NA	786VMP0202PA	786VMP0202QA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			18-Jan-2011	24-Aug-2011	24-Oct-2011	7-Feb-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	29-Jan-2014	18-Jul-2014	26-Jan-2015	1-Sep-2015	2-Feb-2016
Sample Depth (ft bgs / ags)			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in $\mu g/m^3$															
1,1,1-trichloroethane	220,000	22,000	15	4.2	3.7	0.78 J	2.1	U	3.7	6.8	1.5	14	0.55 J	4.7	U
1,1-dichloroethane	77	7.7	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	U	U	U	0.75 J	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	4.5	7.5	1.6	0.62 J	1.2	1.4	1.5	U	0.49 J	U	0.16 J♦	2.4 ♦	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	1.7	3.1	0.55 J	0.26 J	0.33 J	0.44 J	0.41 J	0.25 J	U	U	U	0.63 J♦	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	28	1.9	0.28 J	4.9	U	U	1.3 ♦	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	U	U	U	U	U	U	0.12 J♦	U
2-chlorotoluene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	1.8	U	1.3	U	U	6.8	0.61 J	U	U	U	U	0.14 J	U
4-ethyltoluene	NA	NA	0.95	2	0.55 J	0.29 J	0.36 J	0.37 J	0.46 J	U	U	U	U	0.72 J♦	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	0.82 J♦	U
acetone	1,400,000	140,000	49	25	U	1.9 J	26 B	25	4.8 J	15	31 J♦	U	5.5 J	12 ♦	3.4 J
benzene	16	1.6	4.6	0.32 J	2.2	U	0.19 J	0.66	0.44 J	0.42 J	0.66 ♦	0.49 J	0.63	0.27 J	U
bromodichloromethane	3.3	0.33	7.4	3.2	1.7	0.32 J	1.3 J	U	0.70 J	0.96 J	U	2.1 J	U	0.86 J	U
bromomethane	220	22	U	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	5.3	1.4	0.41 J	U	0.64 J	U	0.62 J	0.45 J	U	1.1 J	U	26 ♦	0.14 J
carbon tetrachloride	20	2	U	U	U	0.44 J	0.53 J	0.41 J	0.47 J	0.34 J	U	U	0.32 J	0.57 J	U
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	620	100	72	12	31	2.4	55	58	11	160	3.8	31	3.1
chloromethane	3,900	390	U	U	U	U	0.27 J	U	0.28 J	0.19 J	U	U	U	2.9 ♦	0.37 J
cis-1,2-dichloroethene	NA	NA	1.4	U	U	U	U	U	0.34 J	0.32 J	U	0.90 J	U	0.35 J	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	U	U	0.5 J♦	U
cyclohexane	260,000	26,000	U	U	U	U	0.38 J	9.1	U	U	3.4 J♦	U	U	U	U
ethyl acetate	3,100	310	U	1.1	U	U	U	U	NA	U	U	U	U	U	U
ethylbenzene	49	4.9	1.5	8.8	2.7	1.4	1.9	1.6	0.77 J	0.64 J	0.56 J	U	0.16 J♦	4.2 ♦	U
freon 11 (trichlorofluoromethane)	31,000	3,100	2.7	1.7	1.4	1.3	1.4	1.4	1.2	1.3	0.91 J♦	1.9 J	U	1.6	0.65 J
freon 113 (freon TF)	1,300,000	130,000	3.7	1.1 J	1.1 J	0.55 J	0.78 J	0.75 J	0.78 J	1.5	1.2 J♦	2.3 J	0.68 J	1.2 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	3.5	2.8	2.3	2.5	2.4 J	2.7	1.9 J	2.4 J	3.0 ♦	3.0 J	3.1	2.5	1.7 J
freon 22	2,200,000	220,000	NA	NA	NA	U	1.2 J	0.98 J	0.73 J	0.82 J	U	1.0 J	1 J	0.84 J♦	0.73 J
heptane	NA	NA	5.8	U	1.7	U	0.38 J	3.7	U	U	0.85 ♦	U	0.23 J	0.26 J♦	U
hexane	31,000	3,100	U	U	U	0.22 J	0.76	15	0.19 JM	2.5	1.1 J♦	U	U	0.31 J♦	U
isopropyl alcohol	NA	NA	U	U	U	1.4 J	1.5 J	170	3.1 J	1 J	24	U	1.4 J	3.7 J♦	U
m,p-xylene (sum of isomers)	4,400	440	4.8	32	9.9	4.6	7.2	6.3	2.8	1.5 J	1.5 J	U	0.39 J♦	4.9 ♦	U
methyl butyl ketone	NA	NA	9.2	8.7 J	U	U	0.84 J	U	U	0.58 J	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	15	U	U	U	4.8 B	7	1.4 J	3.2	3.1 ♦	U	1.4 J	3.1 ♦	U
methyl isobutyl ketone	130,000	13,000	6.7	U	U	1.0 J	0.74 J	U	U	0.78 J	U	U	U	0.72 J♦	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	1.4	23	2.5	15	2.8	0.83 J	2.3	1.3 J	1.0 J♦	U	0.65 J♦	0.41 J♦	U
naphthalene	3.6	0.36	U	U	U	U	0.53 J	U	0.77 J	0.52 J	U	U	U	0.87 J♦	U
n-Butane	NA	NA	NA	NA	NA	0.67 J	2.1	1.3	0.37 J	0.26 J	0.85 J♦	U	1.1 J	0.86 J♦	U
n-Propylbenzene	44,000	4,400	NA	NA	NA	U	U	U	U	U	U	U	U	0.53 J♦	U
o-xylene	4,400	440	2.2	6.6	2.1	1.1	1.6	2.2	1	0.53 J	0.61 J	U	0.18 J♦	2.1 ♦	U
styrene	44,000	4,400	U	2.2	U	U	0.25 J	U	U	0.22 J	0.29 J	U	U	0.39 J♦	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	U	1.1 J	U	U	3.3 J	4.2 J♦	U	U	2.1 J♦	U
tetrachloroethylene (pce)	470	47	11	0.83 J	2.9	U	0.82 J	U	0.93 J	0.54 J	U	1.6 J	U	3	U
tetrahydrofuran	NA	NA	16	U	U	U	0.67 J	U	U	0.42 J	U	1.3 J	1.3 J	18 ♦	U
toluene	220,000	22,000	6.7	16	11	2.2 B	4.4	5.2	2.1	2	4.3 ♦	0.59 J	0.9	1.9 ♦	U
trichloroethylene (tce)	30	3	740	260	140	22	110	6.3	150	120	6.3	410	6.3	130	0.41 J
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
$\mu g/m^3$: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location			786VMP-3												
Sample ID	Sub-slab Vapor Screening Level* ($\mu g/m^3$)	Indoor Air Screening Level* ($\mu g/m^3$)	786VMP0302AA	786VMP0302AB	786VMP0302AC	786VMP0302AD	786VMP0302AG	786VMP0302HA	786VMP0302IA	786VMP0302JA	786VMP0302KA	786VMP0302LA	786VMP0302NA	786VMP0302PA	786VMP0302QA
Sample Type			sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab	sub-slab
Sample Date			18-Jan-2011	24-Aug-2011	24-Oct-2011	27-Jan-2012	8-Aug-2012	6-Mar-2013	9-Aug-2013	3-Oct-2013	29-Jan-2014	18-Jul-2014	26-Jan-2015	1-Sep-2015	2-Feb-2016
Sample Depth (ft bgs / ags)			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Sample Collection Duration (hr)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Volatiles (TO-15) in $\mu g/m^3$															
1,1,1-trichloroethane	220,000	22,000	16	U	U	U	U	U	U	0.6 J	U	1.9	U	U	U
1,1-dichloroethane	77	7.7	1.4	U	U	U	U	U	U	U	U	0.57 J	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	0.62 J	U	U	0.39 J	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	13	2.4	0.8	0.33 J	U	U	U	0.96	0.30 J	6.2	0.38 J	U	U
1,2-dichloroethane	4.7	0.47	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	9.9	0.65 J	U	U	U	U	U	0.3 J	U	1.6	U	U	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	0.41 J	U	18	U	U	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	U	U	U	U	1.4	U	U	U
2-chlorotoluene	NA	NA	NA	NA	NA	U	U	U	U	U	U	0.42 J	U	U	U
2,2,4-trimethylpentane	NA	NA	U	U	1.4	0.24 J	U	U	1.9	U	U	2.3	U	U	0.32 J
4-ethyltoluene	NA	NA	8.1	0.60 J	U	U	U	U	U	0.28 J	U	2.1	U	U	U
4-isopropyltoluene	NA	NA	NA	NA	NA	U	U	U	U	2.2	U	0.76 J	U	U	U
acetone	1,400,000	140,000	50	24	4.3	1.2 J	94	17	5.5 J	9.3 J	31 J	44	7.8 J	50	13
benzene	16	1.6	4.7	0.32 J	4.2	0.25 J	1.0	0.7	U	0.46 J	0.82	3.5	0.7	2.8	0.77
bromodichloromethane	3.3	0.33	2.9	U	U	U	U	U	U	U	U	U	U	U	U
bromomethane	220	22	U	U	U	U	U	U	U	U	U	U	U	U	U
carbon disulfide	31,000	3,100	3.1	0.95	U	U	0.91 J	U	0.38 J	3.3	0.64 J	15	U	2.1	U
carbon tetrachloride	20	2	U	U	0.64 J	0.48 J	0.55 J	U	0.44 J	0.31 JM	0.28 J	0.45 J	0.49 J	0.56 J	0.39 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	3.0	U	U	U
chloroform	5.3	0.53	47	U	U	U	0.33 J	U	U	0.41 J	0.21 J	1.4	U	U	U
chloromethane	3,900	390	U	U	U	U	U	0.2 J	0.14 J	0.32 J	U	0.47 J	U	U	U
cis-1,2-dichloroethene	NA	NA	1.1	U	U	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	NA	U	U	U	U	U	U	1.1	U	U	U
cyclohexane	260,000	26,000	U	U	U	U	U	3.6	U	U	U	3.7	U	U	0.28 J
ethyl acetate	3,100	310	U	U	U	U	U	U	NA	U	U	U	U	U	U
ethylbenzene	49	4.9	9.8	1.6	1.1	0.40 J	0.34 J	U	U	0.8 J	0.31 J	6.4	U	0.71 J	0.15 J
freon 11 (trichlorofluoromethane)	31,000	3,100	3.2	1.7	1.5	1.4	1.4 J	1.4	1.2	1.2	1.1	2	1.4	1.4	1 J
freon 113 (freon TF)	1,300,000	130,000	3.4	0.78 J	U	0.54 J	0.67 J	0.6 J	0.59 J	U	0.69 J	0.67 J	0.65 J	0.63 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	U	2.8	2.6	2.7	2.7 J	2.6	2.1 J	0.56 J	3.1	3.5	3	2.6	1.9 J
freon 22	2,200,000	220,000	NA	NA	NA	0.97 J	1.0 J	0.98 J	U	0.84 J	0.86 J	1.3 J	1 J	0.94 J	0.81 J
heptane	NA	NA	4.7	1.2	1.9	0.40 J	0.83 J	U	0.51 J	U	7.5	2.2	0.67 J	22	1.3
hexane	31,000	3,100	U	U	6.8	1.5	U	2.9	U	0.48 JM	4.9	1.9	0.96	24	1.8
isopropyl alcohol	NA	NA	U	11	U	U	2.8 J	34	2.3 J	5.5 J	U	73	3.4 J	1.2 J	U
m,p-xylene (sum of isomers)	4,400	440	16	5.3	3.4	1.4 J	0.75 J	U	U	1.7 J	0.37 J	17	0.42 J	0.77 J	0.36 J
methyl butyl ketone	NA	NA	7.6	U	U	U	7.6	U	U	U	U	U	U	1.9 J	0.42 J
methyl ethyl ketone	220,000	22,000	19	6.3 J	U	U	35	3.5	0.95 J	3.6	7.4	11	2.1	25	4.3
methyl isobutyl ketone	130,000	13,000	U	U	U	4.0	1.3 J	U	U	0.75 J	1.4 J	2.2	U	1.9 J	U
methyl methacrylate	NA	NA	NA	NA	NA	U	U	U	U	U	U	3.3	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	1.7	U	U	U
methylene chloride	12,000	1,200	U	U	U	0.50 J	U	U	U	1.4 J	0.53 J	1.3 J	0.63 J	U	U
naphthalene	3.6	0.36	U	U	U	U	0.87 J	U	U	18.0	U	U	U	0.23 J	U
n-Butane	NA	NA	NA	NA	NA	U	U	U	U	0.33 J	2.4	0.97 J	0.76 J	33	3.2
n-Propylbenzene	44,000	4,400	NA	NA	NA	U	U	U	U	U	U	2.3	U	U	U
o-xylene	4,400	440	6.2 J	1.5	0.84	0.38 J	0.24 J	U	U	0.62 J	0.19 J	5.2	0.11 J	0.34 J	U
styrene	44,000	4,400	4.8	0.95	U	U	U	U	U	0.27 J	U	3.0	U	0.16 J	U
tert-Butyl alcohol	NA	NA	NA	NA	NA	0.47 J	150	U	U	2.2 J	U	17	U	0.65 J	U
tetrachloroethylene (pce)	470	47	85	2.6	1.5	U	4.6	U	4.2	U	0.77 J	8.5	U	1.1 J	U
tetrahydrofuran	NA	NA	36	U	U	U	U	11 J	U	2 J	U	12 J	1.3 J	U	U
toluene	220,000	22,000	16	5.2	7.7	0.62 J	2.7	0.2 J	0.70 J	3.2	1.0	19	0.44 J	2.6	0.86
trichloroethylene (tce)	30	3	2,200	51	23	1.9	36	1.8	6.5	58	11	200	0.24 J	18	0.4 J
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
$\mu g/m^3$: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 7
Buildings 785 and 786 SSVM Performance Monitoring
Sub-Slab Vapor, Indoor Air and Outdoor Air Results

Sample Location			786-IA											
Sample ID	Sub-slab Vapor Screening Level* (µg/m^3)	Indoor Air Screening Level* (µg/m^3)	786IA04	786IA05	786IA06	786IA07	786IA08	786IA09	786IA10	786IA11	786IA12	786IA13	786IA14	786IA1QA
Sample Type			Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor
Sample Date			24-Aug-2011	24-Oct-2011	27-Jan-2012	8-Aug-2012	6-Mar-13	9-Aug-13	3-Oct-13	28-Jan-14	17-Jul-14	26-Jan-15	1-Sep-15	2-Feb-16
Sample Depth (ft bgs / ags)			5	5	5	5	5	5	5	5	5	5	5	5
Sample Collection Duration (hr)			12	12	12	12	12	12	12	12	12	12	12	8
Volatiles (TO-15) in µg/m^3														
1,1,1-trichloroethane	220,000	22,000	U	U	U	U	U	U	U	U	U	U	U	U
1,1-dichloroethane	77	7.7	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trichlorobenzene	88	9	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-trimethylbenzene	310	31	5.1	1.9	U	0.59 J	U	U	2.8	U	0.15 J	U	0.63 J	U
1,2-dichloroethane	4.7	0.47	U	U	U	0.44 J	U	U	U	U	U	U	U	U
1,3,5-trimethylbenzene	NA	NA	2.6	U	U	U	U	U	0.78 J	U	U	U	0.19 J	U
1,3-dichlorobenzene	NA	NA	U	U	U	U	U	U	U	U	U	U	U	U
1,4-dichlorobenzene	11	1.1	U	U	U	U	U	U	U	U	U	U	U	U
2-chlorotoluene	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
2,2,4-trimethylpentane	NA	NA	0.81	U	0.41 J	0.80 J	2.4	0.38 J	U	0.76 J	U	U	0.44 JM	0.96
4-ethyltoluene	NA	NA	1.2	0.60 J	U	U	U	U	0.74 J	U	U	U	0.16 J	U
4-isopropyltoluene	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
acetone	1,400,000	140,000	49	12	3.3 J	46	21	15	18	U	9.2 J	6.8 J	13	5.3 J
benzene	16	1.6	0.91	1.3	0.75	0.47 J	0.77	0.41 J	0.68	0.52 J	0.22 J	0.52 J	1.2 M	U
bromodichloromethane	3.3	0.33	U	U	U	U	U	U	U	U	U	U	U	U
bromomethane	220	22	U	U	U	U	U	U	U	U	0.12 J	U	U	U
carbon disulfide	31,000	3,100	U	U	U	1.8	U	0.38 J	U	1.2 J	U	0.66 J	0.4 J	U
carbon tetrachloride	20	2	U	U	0.53 J	0.43 J	0.5 J	0.44 J	0.4 J	0.53 J	0.45 J	0.55 J	0.49 J	0.31 J
chlorobenzene	2,200	220	U	U	U	U	U	U	U	U	U	U	U	U
chloroform	5.3	0.53	U	U	U	0.19 J	U	U	U	U	U	U	U	U
chloromethane	3,900	390	U	U	1.2	1.3	U	0.86 J	1	1.6	1.2	1.5	1 J	0.97 J
cis-1,2-dichloroethene	NA	NA	0.64	U	U	U	U	U	U	U	U	U	U	U
cumene	18,000	1,800	NA	NA	U	U	U	U	U	U	U	U	U	U
cyclohexane	260,000	26,000	U	1.7	0.28 JB	0.35 J	U	0.18 J	U	U	U	U	0.21 JM	U
ethyl acetate	3,100	310	U	U	U	U	U	NA	U	U	U	U	U	U
ethylbenzene	49	4.9	3	1.8	0.67 J	1.3	U	1.1	14	U	0.11 J	0.21 J	0.3 J	U
freon 11 (trichlorofluoromethane)	31,000	3,100	1.7	1.1	1.4	1.4	1.6	1.1 J	1.2	1.4	1.3	1.4	1.2	0.96 J
freon 113 (freon TF)	1,300,000	130,000	0.78 J	U	0.56 J	0.61 J	0.68 J	0.53 J	0.49 J	0.63 J	0.59 J	0.66 J	0.45 J	U
freon 12 (dichlorodifluoromethane)	4,400	440	2.8	2.0	2.8	2.5	3	2.0 J	2.3 J	3.1	2.5	3	2.4 J	1.6 J
freon 22	2,200,000	220,000	NA	NA	U	1.3 J	1.1 J	0.78 J	0.86 J	1.1 J	1.1 J	1 J	0.94 J	0.75 J
heptane	NA	NA	1.7	0.96	0.48 JB	0.92	1.2	0.36 J	U	0.82	U	0.26 J	0.38 JM	U
hexane	31,000	3,100	U	2.6	1.3 B	1.5	8.2	0.56 J	0.38 J	0.77	U	0.37 J	0.8	U
isopropyl alcohol	NA	NA	8.2	3.0	U	3.0 J	1.1 J	2.6 J	1.8 J	U	1.8 J	U	U	U
m,p-xylene (sum of isomers)	4,400	440	11	6.2	1.8 J	3.9	U	3.3	47	U	0.30 J	0.37 J	1.1 J	U
methyl butyl ketone	NA	NA	U	U	U	0.40 J	U	0.42 J	U	U	U	U	U	U
methyl ethyl ketone	220,000	22,000	5.9	U	0.76 J	4.5 B	3.8	3.1	7.6	U	1.2 J	1.1 J	1.6	0.87 J
methyl isobutyl ketone	130,000	13,000	U	U	2.6	0.71 J	U	0.98 J	2.7	U	U	U	0.75 J	U
methyl methacrylate	NA	NA	NA	NA	U	U	U	U	U	U	U	U	U	U
methyl tert-butyl ether	31,000	3,100	U	U	U	U	U	U	U	U	U	U	U	U
methylene chloride	12,000	1,200	2.7	U	0.67 J	1.0 J	0.69 J	0.47 J	0.75 J	0.68 J	U	0.7 J	0.79 J	0.63 J
naphthalene	3.6	0.36	U	U	U	U	U	0.86 J	U	U	U	U	0.21 J	U
n-Butane	NA	NA	NA	NA	2.3	7.8	3.2	1.3	1.4	2.2	U	2.1	1.9	1.2 J
n-Propylbenzene	44,000	4,400	NA	NA	U	U	U	U	0.48 J	U	U	U	U	U
o-xylene	4,400	440	2.7	1.7	0.51 J	1.0	U	0.80 J	14	U	0.11 J	0.14 J	0.45 J	U
styrene	44,000	4,400	1.8	U	U	0.62 J	U	0.33 J	0.58 J	U	U	U	U	U
tert-Butyl alcohol	NA	NA	NA	NA	U	U	U	0.56 J	U	U	U	U	U	U
tetrachloroethylene (pce)	470	47	U	U	U	0.34 J	U	U	U	U	1.2 J	U	U	U
tetrahydrofuran	NA	NA	U	U	U	1.5 J	U	U	U	U	U	U	U	U
toluene	220,000	22,000	8.8	9.4	2.4 B	7.3	0.98	4.5	9.3	0.33 J	0.52 J	0.51 J	1.6	U
trichloroethylene (tce)	30	3	2.5	U	U	U	U	U	U	U	U	U	U	U
vinyl chloride	28	2.8	U	U	U	U	U	U	U	U	U	U	U	U

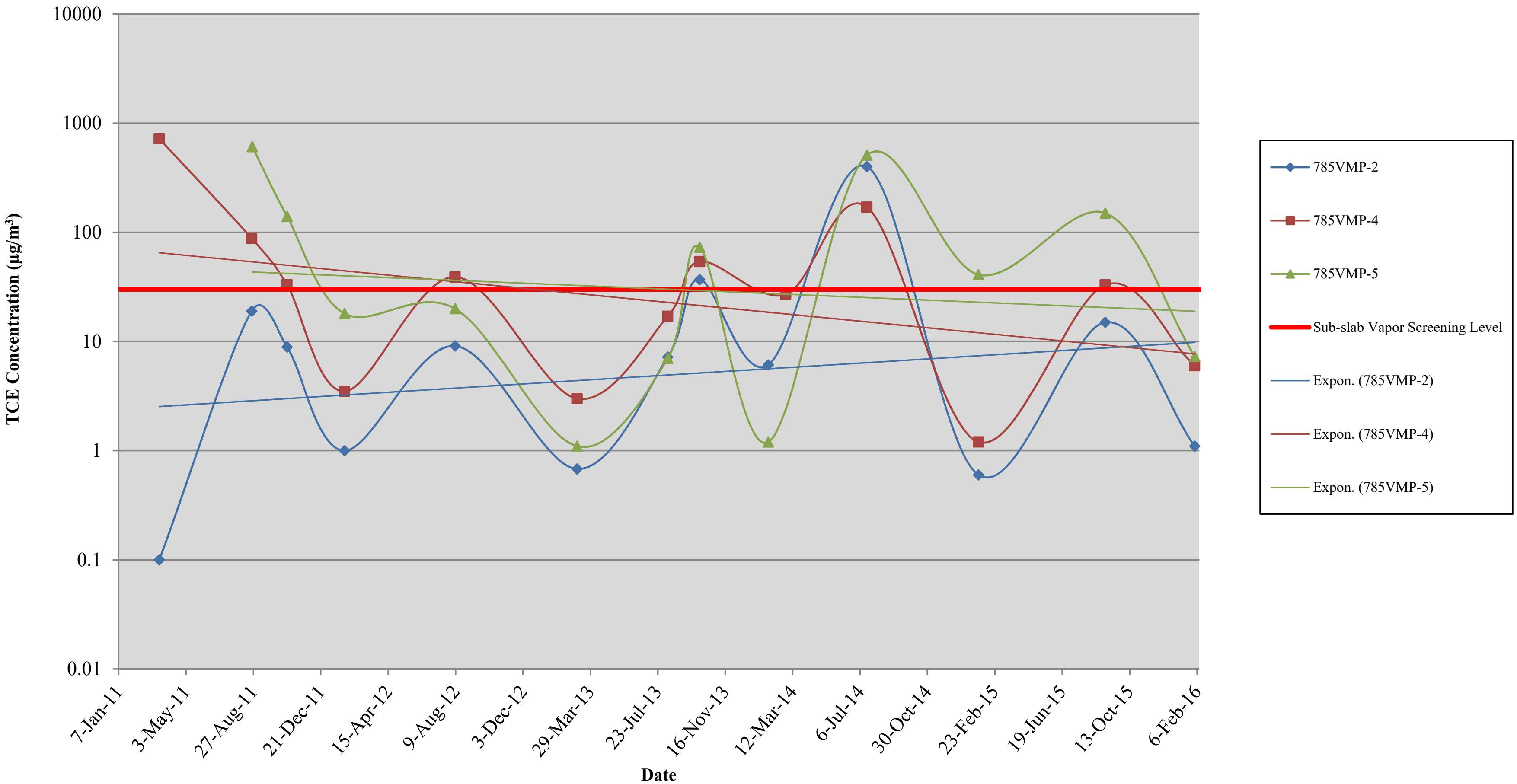
Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m^3: microgram per cubic meter.
Exceedance of EPA Commercial Regional Screening Levels.
B - Analytes detected in the trip blank.
♦-Denotes higher nominal value of duplicate sample result.
*EPA Industrial Regional Screening Levels (based on the cancer risk of 1X10-6)

Table 8
Buildings 785 and 786
SSVM Performance Monitoring Influent Results

Sample Location	785786-Influent									
Sample ID	**785786CA01AA**	**785786CA01AB**	**785786CA01AC**	**785786CA01AD**	**785786CA01AG**	**785786CA01AH**	**785786CA01IA**	**785786CA01LA**	**785786CA01MA**	**785786CA01NA**
Sample Type	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**	**Influent**
Sample Date	**19-May-2011**	**23-Aug-2011**	**25-Oct-2011**	**24-Jan-2012**	**3-Aug-2012**	**14-Feb-2013**	**7-Aug-2013**	**20-Jan-2015**	**28-Aug-2015**	**1-Feb-2016**
Sample Depth (ft bgs)	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Sample Collection Duration (hr)	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**	**quick grab**
Volatiles (TO-15) in µg/m^3										
1,1,1-trichloroethane	4.8	1.4	1.6	0.32 J	U	U	0.36 J	U	0.5 JM	U
1,2,4-trimethylbenzene	6.9	1.7	2.8	0.26 J	1.4 J	0.73 J	0.74 J	0.23 J	0.16 J	U
1,2-dichloroethene	U	U	U	U	U	U	U	0.36 J	1.1 J	U
1,3,5-trimethylbenzene	6.3	1.5	U	U	0.65 J	U	U	U	U	U
1,3-butadiene	U	U	U	U	U	0.23 J	U	U	U	U
1,3-dichlorobenzene	U	U	U	U	0.49 J	U	U	U	U	U
1,4-dioxane	U	U	U	U	U	U	U	U	U	13 J
2,2,4-trimethylpentane	300	31	33	7.9	9.5	10	2.8	3.9	0.17 J	U
4-ethyltoluene	U	0.75	U	U	0.36 J	U	U	0.1 J	U	U
4-isopropyltoluene	NA	NA	NA	U	U	U	U	U	U	2.7
acetone	180	5.1	U	1.2 J	56	110	4.3 J	14	17	58
benzene	1.9	0.81	U	U	0.51 J	0.72 J	0.47 J	0.42 J	0.61 J	0.38 J
carbon disulfide	6.9	0.79	U	U	0.70 J	U	U	1.7	4.4	U
carbon tetrachloride	U	U	U	0.48 J	0.44 J	0.45 J	0.37 J	1.45 J	1 J	U
chloroethane	U	U	U	U	U	U	U	U	0.19 J	U
chloroform	59	8.1	7.8	1.6	2.8	U	1.2	0.67 J	2.5	U
chloromethane	U	U	U	U	0.45 J	0.59 J	0.24 J	U	1.5	0.48 J
cis-1,2-dichloroethene	17	4.5	3.0	0.56 J	1.6	U	1	0.36 J	1.2 M	0.63 J
cumene	NA	NA	NA	U	U	U	U	0.25 J	U	U
cyclohexane	180	28	U	U	4.4	7.6	U	0.24 J	U	U
ethylbenzene	5.9	2.9	1.7	0.30 J	1.1 J	U	0.41 J	0.19 J	0.29 J	U
freon 11 (trichlorofluoromethane)	1.4	1.8	1.5	1.4	1.4 J	1.5 J	1.1	1.5	2.6	1 J
freon 113 (freon TF)	0.78 J	0.78 J	U	0.52 J	0.62 J	0.73 J	0.52 J	0.66 J	1.1 J	U
freon 12 (dichlorodifluoromethane)	2.4	2.7	U	2.5	2.3 J	3.3 J	2.3 J	3	5	2 J
freon 22	NA	NA	NA	U	U	1.3 J	U	1 J	2.3	0.84 J
heptane	130	30	26	3.1	2.5	10	0.15 J	U	U	U
hexane	150	13	U	1.5	5.4	22	0.20 J	U	0.24 J	U
isopropyl alcohol	U	U	U	U	9.6 J	6.8 J	3.9 J	1.5 J	1.1 J	U
m,p-xylene (sum of isomers)	16	6.3	6.0	0.98 J	3.3	1 J	1.5 J	0.41 J	0.87 J	U
methyl ethyl ketone	20	U	U	0.27 J	5.3 B	2.3 J	0.66 J	3.7	3.3	4.4
methylene chloride	1.4	U	U	0.54 J	2.0 J	U	0.55 J	U	0.73 JM	U
naphthalene	U	U	U	U	2.3 J	U	0.56 J	U	0.18 J	U
n-butane	NA	NA	NA	2.8	13	2.8	U	3.6	1.1 JM	0.62 J
n-Propylbenzene	NA	NA	NA	U	U	U	U	0.65 J	U	U
o-xylene	6.5	3.4	1.9	0.30 J	1.3 J	0.4 J	0.47 J	0.13 J	0.28 J	U
styrene	U	U	U	U	0.48 J	U	0.14 J	U	U	U
tert-butyl alcohol	NA	NA	NA	U	1.0 J	U	U	U	0.46 J	U
tetrachloroethylene (pce)	250	52	72	11	22	6.6	11	5	6.1	1.2 J
tetrahydrofuran	510	U	U	U	2.6 J	U	U	0.62 J	U	U
toluene	5.6	3.4	3.8	0.44 J	9.5	0.97 J	1.6	0.27 J	0.89	U
trichloroethylene (tce)	3500	520	740	140	250	93	130	72	140	80
vinyl chloride	U	U	U	U	U	U	U	U	U	U

Notes:
U - Not detected.
J- The analyte was positively identified; the quantitation is an estimation.
M - Lab qualifier for manual integrated compound
NA- Not Available
µg/m^3: microgram per cubic meter.
B - Analytes detected in the trip blank.

Figure 8
Sub-Slab TCE Trend Chart Building 785
(January 2011 through February 2016)



Note: Not detected results are plotted as 0.1 µg/m³.

Figure 9
Sub-Slab TCE Trend Chart Building 786
(January 2011 through February 2016)

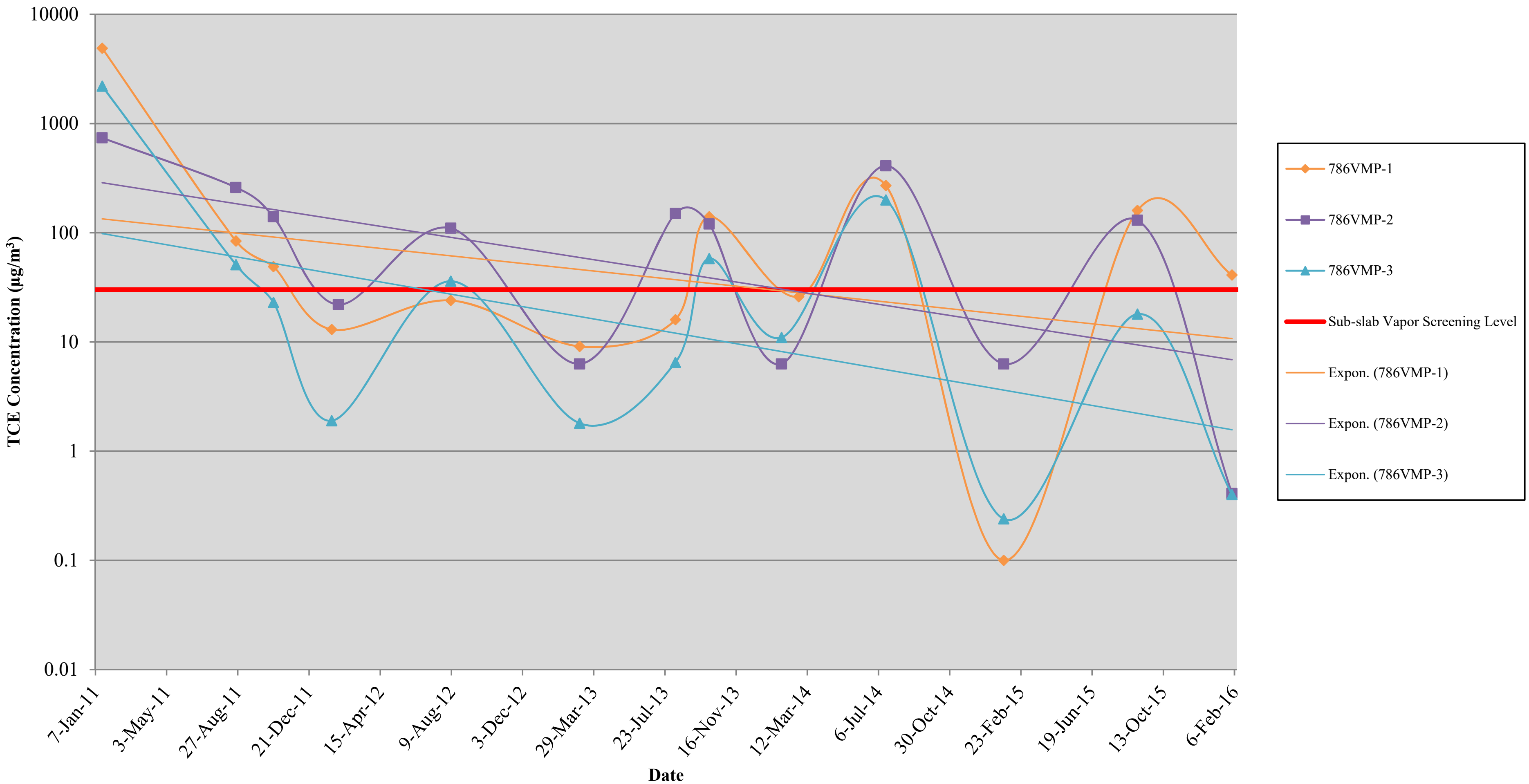


Figure 10
Conceptual Site Model
Buildings 774/776 and Buildings 785/786

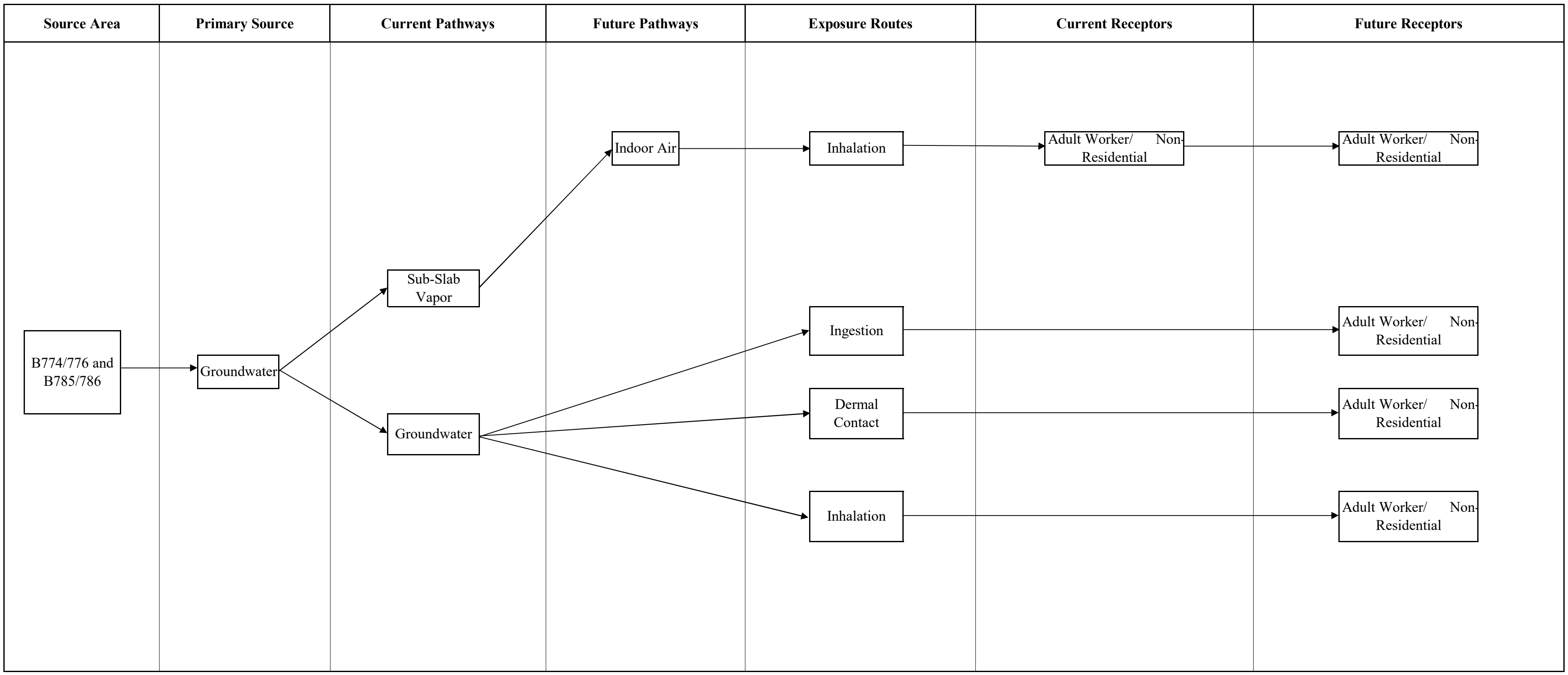
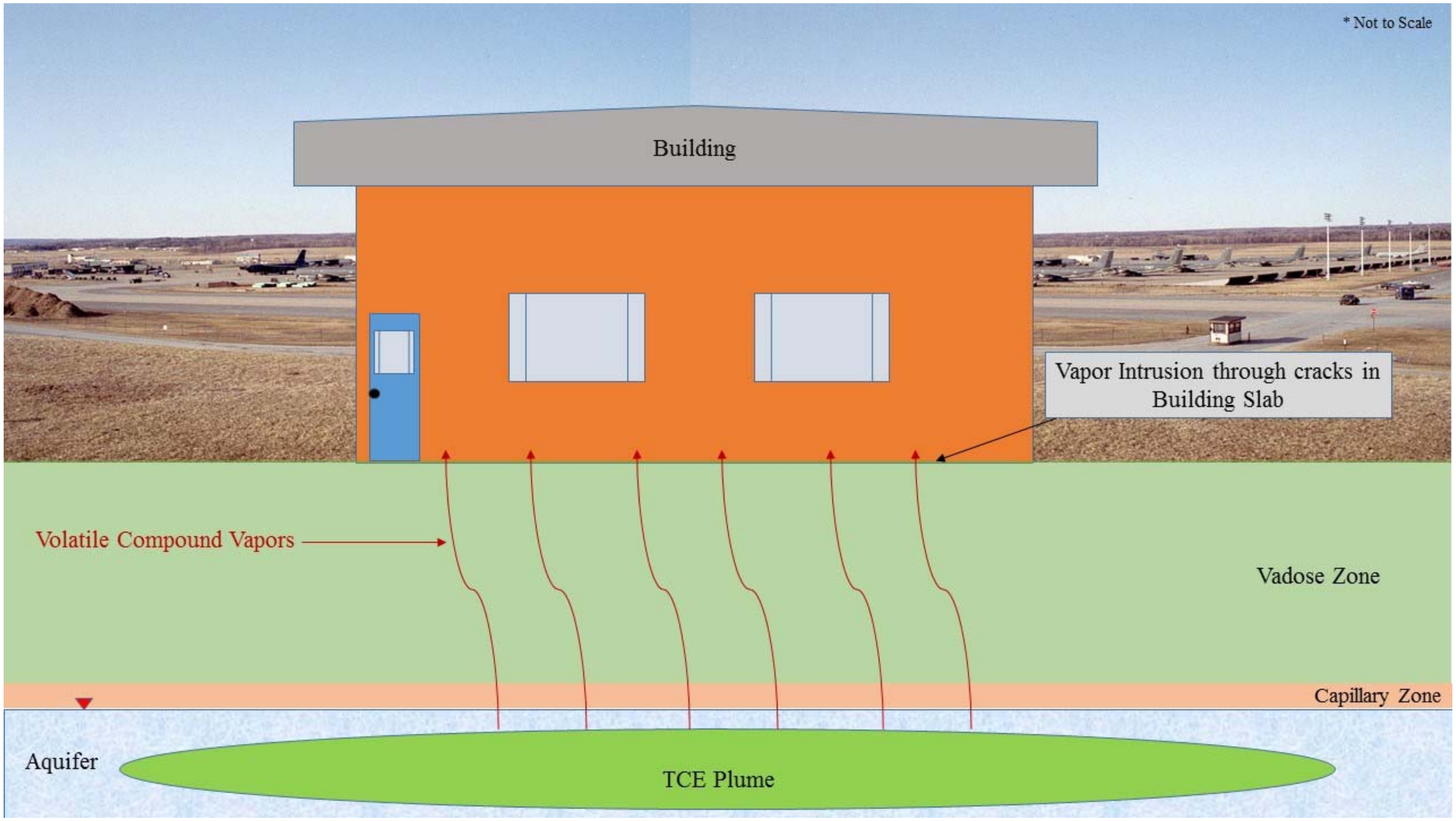


Figure 11
Conceptual Site Model
Volatilized Contamination Migration to Buildings



http://www.epa.gov/region9/superfund/prg/. All indoor air results are below the 2016 industrial EPA RSLs. Please note that SVI Guidance documents have been updated as further discussed in Section 7.

6 CURRENT AND POTENTIAL FUTURE LAND AND RESOURCES USES

The Griffiss Local Reuse Agency published the Griffiss Business and Technology Park Development Standards on September 23, 1998 with amendments on September 30, 1998 and February 28, 2001. The SD-052-02 Building 775 Site (Buildings 774 and 776) is designated for light industrial use and the SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) is designated for industrial/ commercial (manufacturing/ airfield and related services) use.

7 SUMMARY OF SITE RISKS

Site risks are associated with the potential for contaminated sub-slab vapors migrating into the indoor air of Buildings 774/776 and 785/786. The risk assessment estimates the human health risk which could result from contamination at a site if no remedial action is taken. For the purpose of the assessment, the indoor air and sub-slab vapor concentrations were compared to the acceptable cancer risk range established under the NCP of 1×10^{-6} to 1×10^{-4} (one-in-a-million to one-in-ten-thousand) and the non-cancer HQ of 1 for all chemicals.

For the cancer risk, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to the carcinogen. Excess lifetime cancer risk is calculated using the following equation:

Risk = CDI x SF[3]

In the above equation, risk equals a unitless probability of an individual developing cancer, CDI equals the chronic daily intake averaged over 70 years in mg/kg-day, and SF equals the slope factor expressed $(\text{mg/kg-day})^{-1}$. The resulting risk is a probability that is usually expressed in scientific notation (e.g. $1\text{x}10^{-6}$). The acceptable exposure levels are generally concentration levels that represent an excess lifetime cancer risk to an individual of 1×10^{-6} to 1×10^{-4} (EPA, March 1990).

For non-cancer risk, risks are expressed as an exposure level over a specified time period (e.g. lifetime) with a reference dose (RfD) derived for a similar time period is evaluated. The RfD equals the level that an individual may be exposed to that is not expected to cause any deleterious effect. The ratio of exposure to toxicity is called a HQ and is calculated using the following equation:

HQ = CDI/RfD

[3] CDI = chronic daily intake
SF = slope factor

CDI and RfD are expressed in the same units and represent the same exposure period; i.e., chronic, sub- chronic, or short-term. A potential non-carcinogenic risk is indicated if the HI exceeds 1 (USEPA, April 1991).

7.1 Indoor Air and Sub-Slab Vapor Evaluation

The risk assessment included the evaluation of indoor air concentrations and sub-slab vapor data that includes a conservative dilution attenuation factor (DAF) of 10. This evaluation included potential cancer risks and non-cancer health hazards from exposures to VOCs, in particular TCE, in indoor air at Buildings 774, 776, 785 and 786. The indoor air concentrations were within the acceptable risk range established under the NCP of 1×10^{-6} to 1×10^{-4} (one-in-a-million to one-in-ten-thousand) and below the goal of protection of a HQ of 1 for all chemicals.

<u>Indoor Air:</u>

The evaluation of the baseline sampling event results (March 2011 through August 2011) showed that the highest indoor air concentrations found among the VOCs was TCE. Several indoor air sample results indicated TCE concentrations above EPA industrial screening level for indoor air but within the acceptable range associated with a cancer risk of 1×10^{-6} (3 µg/m^3) to 10^{-4} (300 µg/m^3). The indoor air TCE concentrations were 4.4 µg/m^3 at Building 774, 3.6 µg/m^3 at Building 776, 1.1 µg/m^3 at Building 785, and 2.5 µg/m^3 at Building 786. All TCE concentrations were below the non-cancer HQ of 1 (8.8 µg/m^3).

<u>Sub-Slab Vapor:</u>

A separate evaluation was conducted for sub-slab vapor concentrations assuming a conservative DAF of 10 between sub-slab vapor and indoor air results of a concentration of 30 µg/m^3 in sub-slab vapor at a risk of 1×10^{-6} and a concentration of 3,000 µg/m^3 at a cancer risk of 1×10^{-4}. The concentration associated with an HQ = 1 in sub-slab vapor with a conservative DAF is 88 µg/m^3. Evaluation of the sub-slab data indicates elevated TCE concentrations in sub-slab vapor samples above the 1×10^{-4} cancer risk and non-cancer HQ = 1 of 88 µg/m^3. The maximum detected sub-slab vapor TCE concentration was 2,900 µg/m^3 at Building 774, 830 µg/m^3 at Building 776, 720 µg/m^3 at Building 785, and 4,900 µg/m^3 at Building 786.

Please note that EPA guidance documents for SVI have recently been updated. Specifically, the OSWER *Technical Guide For Assessing And Mitigating The Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air* (EPA, June 2015) and the EPA Memorandum: *Compilation of Information Relating to Early/Interim Actions at Superfund Sites and the TCE IRIS Assessment* (EPA, August 2014). An example of updated information in these guidances is the sub-slab/indoor dilution attenuation factor, which was revised to 33 vs. the conservative value of 10 stated above. A second example is that vapor intrusion screening levels (VISLs) can now be calculated with the VISL calculator, vs. the historical calculation provided above. Future site evaluations will be performed in accordance with these new guidance documents.

8 REMEDIAL ACTION OBJECTIVES

To address the potential for SVI at unacceptable risk levels, an RAO was established for SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786). The established RAO is to prevent individual human exposure to soil gas vapor levels within buildings at unacceptable levels represented by an excess cancer risk greater than 1×10^{-6} and also represented by a potential non-cancer risk for a hazard index greater than one. Current EPA RSLs represent the RAOs for evaluating the protectiveness of the IRA. It should be noted that the RSLs are Preliminary Remediation Goals since RSLs are not cleanup levels. Future exit strategy decisions, provided in Section 12, will rely on applicable NYSDOH criteria, pertinent EPA RSLs, or a site-specific human health risk assessment prepared in accordance with EPA guidelines.

9 DESCRIPTION OF ALTERNATIVES

The following 3 alternatives were developed for SVI mitigation at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786).

- Alternative 1: No Further Action
- Alternative 2: Long Term Monitoring (LTM)
- Alternative 3: Continued Operation of Interim Response Action

Alternative 1: No Further Action –

This alternative involves no action for SVI mitigation. The source of the contamination would continue to migrate and naturally attenuate. No monitoring would be conducted to evaluate the progress of these natural processes.

Alternative 2: LTM –

This alternative involves LTM of a specified duration or indefinite monitoring, as appropriate, to serve as an early warning system for the protection of potential receptors prior to completion of exposure pathways. No active measures would be conducted. Monitoring will be performed following a specified schedule of indoor, outdoor, sub-slab, and possibly soil vapors to determine the SVI potential. The monitoring data would be evaluated as it became available. For the sites, a comprehensive review of prior monitoring data would be conducted every five years to determine whether appropriate mitigation action should be considered at that time, or whether monitoring should be continued or discontinued, as needed.

Alternative 3: Continued Operation of Interim Response Action –

Continued operation of the IRA of horizontal sub-slab depressurization would coincide with the current O&M activities. Under the IRA of horizontal sub-slab depressurization, vapors are extracted through four horizontal extraction wells at Buildings 774 and 776 and through two horizontal extraction wells at Building 785 and 786. The horizontal extraction wells are connected in line with a regenerative blower for each site. O&M includes system component readings (system temperature, flow, vacuum and motor status), VMP vacuum measurements, and GAC disposal and replacement every four months. Indoor and outdoor air sampling, sub-slab vapor sampling, and influent sampling are also conducted. Land-use Controls/Institutional Controls (LUC/ICs) will also be implemented at both sites under this alternative which will include deed restrictions that prohibit compromising the slabs without the prior written approval of EPA, NYSDEC and the Air Force.

10 SUMMARY OF COMPARATIVE ALTERNATIVES

The alternatives for the SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) were analyzed with respect to the nine criteria specified in the NCP. A brief description of each criterion and the evaluation of alternatives based on these criteria are presented below. The EPA in the NCP at 40 CFR §§ 300.430 (e)(9)(iii) and 300.430(f)(1)(i) has categorized the evaluation criteria into three principal groups:

Threshold Criteria - The recommended alternative must meet these requirements to be eligible for selection.

1. ***Overall Protection of Human Health and the Environment*** determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment in both the short- and long-term.

2. ***Compliance with ARARs*** evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other promulgated requirements that are either applicable or relevant and appropriate to a chemical, action or location at the site, or whether a waiver is justified.

Primary Balancing Criteria - These criteria are used to assess relative performance and tradeoffs among remedial alternatives that meet the threshold criteria.

3. ***Long-term Effectiveness and Permanence*** considers the ability of an alternative to maintain protection of human health and the environment over time.

4. ***Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment*** evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

5. ***Short-term Effectiveness*** considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.

6. ***Implementability*** considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

7. ***Cost*** includes estimated capital and annual O&M costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

Modifying Criteria - The recommended alternative may be modified by state regulatory and public input before it is finalized and presented in the ROD.

8. ***State Acceptance*** considers whether the State agrees with the Air Force's analyses and recommendations, as described in the RI/FS and Proposed Plan.

9. ***Community Acceptance*** considers whether the local community agrees with the Force's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

Alternative 1: No Further Action

The No Action alternative does not meet the requirement of the first threshold criteria for the overall protection of human health and the environment because the potential for SVI at the sites would not be mitigated. Therefore, the no action alternative is rejected.

Alternative 2: LTM

Overall Protection of Human Health and the Environment: This alternative is not protective of human health and the environment as no action would be taken to mitigate potential SVI.

Compliance with ARAR: Under this alternative, analytical results will provide confirmation to the absence or presence of COC concentrations above the EPA human health risk-based screening levels for indoor air. Under this alternative, there is a potential for SVI.

Long-term Effectiveness and Permanence: The proposed alternative is long term. However, it is not completely protective of human health and the environment because the alternative does not include an active remedial action.

Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment: There is no reduction of toxicity, mobility or volume of contaminants because a remedial action will not be implemented.

Short-term Effectiveness: This alternative would require coordination with building superintendents to perform sampling events and coordination with an environmental laboratory to perform sampling analysis. Two weeks prior to sampling events coordination would occur. The building occupants would not be at risk during sampling events.

Implementability: This alternative is implementable. Goods and services are needed for monitoring include sampling personnel and sampling equipment. For reporting and analysis of sampling results and the 5 year review of data, an environmental scientist would be needed.

Cost: This alternative would cost approximately $52,000 annually.

State Acceptance: The NYSDEC has commented on the Draft and Draft Final Proposed Plan. However, comments were not provided on this alternative.

Community Acceptance: Community input was considered in the preparation of this ROD. No comments from the community were provided on the selected remedy during the public comment period.

Alternative 3: Continued Operation of Interim Response Action/ Horizontal Sub-Slab Depressurization

Overall Protection of Human Health and the Environment: Overall protection of human health and the environment would be achieved under this alternative. Current performance monitoring results demonstrate that the IRA is protective to receptors.

Compliance with ARAR: Evaluation of the current IRA has confirmed the mitigation of COCs to concentrations below the industrial EPA RSLs for indoor air within all four buildings. While RSLs are not ARARs, since there are no ARARs RSLs are being used as to be considered criteria to establish protective cleanup levels.

Long-term Effectiveness and Permanence: The IRA has been in place since 2011 and is demonstrating long term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment: The IRA has reduced toxicity, mobility and volume of contaminants through treatment based on sub-slab vapor and influent air sampling results.

Short-term Effectiveness: Groundwater contamination within the vicinity of the buildings is the source for potential SVI. Therefore, sub-slab depressurization will be in place until COC concentrations are below Groundwater ARARs under this alternative. The source for potential SVI is addressed under the On-Base Groundwater ROD (AFRPA, December 2008). Per the On-Base Groundwater ROD remediation of groundwater to ARARs at SD052-01 and SD052-02 could take between 10 to 30 years. In addition, sub-slab depressurization O&M and performance monitoring will be performed. This requires coordination with building superintendents to perform sampling events and coordination with an environmental laboratory to perform sampling analysis. Coordination occurs two weeks prior to sampling events. The building occupants would not be at risk during sampling events.

Implementability: This alternative is already implemented. However, it would require O&M and LTM. O&M would require field personnel to perform the tasks and may require replacement parts and services for the horizontal sub-slab depressurization systems. Goods and services needed for monitoring include sampling personnel and sampling equipment. For reporting and analysis of sampling results an environmental scientist would be needed.

Cost: This alternative would be the most expensive option. Implementation of the IRA cost approximately $250,000 for each system. Continued operation and maintenance would cost approximately $77,000 annually for each system (including $25,000 for system O&M and $52,000 for LTM).

State Acceptance: The NYSDEC has commented on the Draft and Draft Final Proposed Plan to clarify elements of the exit strategy presented in Section 8. In summary, the comments were to clarify the groundwater concentration requirements for shutting the systems down, to clarify that indoor air samples may be collected during rebound sampling events, and to clarify that the text specify that the decision to shut the systems down would be jointly made that the lead and supporting agencies. These comments have been incorporated or addressed in the development of this document. State input has also been considered during the preparation of this ROD.

Community Acceptance: Results of the IRA have been reported at Restoration Advisory Board meetings conducted since the IRA was implemented. No comments or objections were received in association with the IRA. In addition, no comments from the community were received on the selected remedy during the public comment period for the Proposed Plan.

The IRA was the preferred alternative in the FS. In addition, current performance monitoring results demonstrate that the IRA is protective to receptors. It is likely to receive community acceptance.

11 PRINCIPAL THREAT WASTES

The NCP establishes an expectation that treatment that reduces the toxicity, mobility, or volume of the principal threat wastes will be utilized by a remedy to the extent practicable. The principal threat wastes include solvent-derived VOCs dissolved within soil vapor. The selected remedy includes soil gas treatment, which will capture and/or destroy contamination, thereby satisfying both the regulatory expectation for treatment of the principal threat wastes and the statutory preference for treatment as a principal element of the remedy.

12 SELECTED REMEDY

Under the selected remedial approach for SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786), horizontal sub-slab depressurization will continue to operate at Buildings 774, 776, 785, and 786. In addition, LUC/ICs will be implemented at both sites which will include deed restrictions that prohibit compromising the slabs without the prior written approval of EPA, NYSDEC and the Air Force. The Preferred Alternative was chosen as it is protective of human health, prevents contaminants from entering the interior of the buildings, is judged to be the most technically effective among the alternatives, and measures high on technical and administrative implementability.

SVI Mitigation by Horizontal Sub-Slab Depressurization: The interior of the buildings are untouched under this alternative, and there will be no installation of vapor barriers. The sub-slab is actively depressurized by imposing negative pressure under the slabs by mechanical (regenerative) blowers, and the extracted vapors are discharged to a vapor treatment system consisting of GAC vessels. The latest sampling results from the IRA where compared to the baseline sampling results at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) SSVM systems and indicate a decreasing trend in sub-slab TCE vapors. In addition, all indoor and outdoor air concentrations were below 2016 industrial EPA RSLs and did not pose any unacceptable risk to building occupants. Influent sampling results at both sites indicated a decreasing trend in TCE. During SVI mitigation, the SSVM systems will continue to be checked weekly (vacuum gage readings, flow meter readings, etc) to ensure proper operation. Sub-slab vapor, indoor air, and outdoor air sampling is included in this alternative to verify the effectiveness of the alternative and to show that the alternative meets its objective. Results will be reported after each sampling event and the performance monitoring program will be reviewed for effectiveness.

The SSVM systems will be shut down when it has been determined that the SVI RAO has been achieved or that continued operation of the system is not effective or needed; i.e., contamination is no longer being removed, sub-slab soil gas concentrations have been reduced to a level that would not impact indoor air at unacceptable levels, and/or there is no remaining groundwater contamination in the vicinity of the buildings at concentrations greater than groundwater ARARs (New York State Ambient Water Quality Standards and Guidance Values, NYSDEC, June 1998) that could impact the SVI pathway into the buildings.

One exit strategy has been developed for this alternative. It includes the strategy for permanently shutting the SSVM systems down. One optimization strategy has also been developed for this alternative which will include converting active SSVM systems into passive SSVM systems. The optimization strategy is described following the exit strategy.

Exit Strategy:

The exit strategy includes the strategy for permanently shutting the SSVM systems down (active or passive). The following are exit strategy guidelines for permanently shutting down the SSVM systems / passive SVI mitigation systems:

- Groundwater Samples: Groundwater contamination in the vicinity of the systems is the source for potential SVI. Therefore, the concentrations of VOCs in groundwater in the vicinity of the SSVM systems will be evaluated to assess the SVI pathway into the buildings. VOC concentrations should meet groundwater ARARs (i.e., established groundwater quality standards) before evaluating whether or not to permanently shut down the SSVM systems / passive SVI mitigation systems.

- SSVM Influent: As an indicator of remediation progress in the sub-slab environment, VOCs in the influent to the SSVM system prior to any carbon treatment will be sampled periodically for laboratory analysis. When influent air data reach a stable trend (i.e., they are no longer decreasing) or the laboratory results for the SSVM system influent indicate that the sub-slab soil gas concentrations are below the NYSDOH no further action screening criteria and applicable EPA RSLs or VISLs for COCs, the SSVM systems will be shut down temporarily. Influent air samples will not be collected if the passive SVI mitigation system has already been implemented. Therefore, this criterion will be skipped for the passive systems.

- Sub-Slab Soil Vapor Rebound Sample Results: Rebound will be evaluated following the temporary shutdown. The rebound evaluation will consist of three consecutive heating season sampling events. Indoor air samples may also be collected in addition to sub-slab vapor samples. If the sampling results for each of the three consecutive heating seasons are below the NYSDOH no further action screening criteria and the applicable EPA residential use RSLs or VISLs for the contaminants of concern, then the SSVM systems will be shut down permanently. If, however, the sub-slab soil gas concentrations are higher than the screening criteria cited, the systems may be re-started. Alternatively, if the laboratory results are approaching but are still higher than the screening criteria cited, a human health risk assessment (prepared in accordance with EPA guidelines) will be performed to determine if the remedial action objective for SVI has been achieved. The same scenario exists for the passive SVI mitigation systems.

The need to collect additional samples and/or choose sampling locations for any part of this exit strategy will be agreed upon by the Air Force, the EPA, NYSDEC and NYSDOH (the Agencies). In addition, documentation that the above exit strategy guidelines have been met so that SSVM systems can be permanently shut down will also be submitted by the Air Force to the Agencies for final approval.

Optimization Strategy:

The optimization strategy includes the strategy for the converting active SSVM systems into passive SSVM systems. Under the passive SSVM Mitigation system, the horizontal wells will be connected to vertical pipes with wind-powered exhaust turbines. The components of the active systems will remain in place once the systems are converted to passive systems. During the operation of the passive systems, the active systems will be inspected/tested periodically. The following are optimization strategy guidelines for converting the SSVM systems into passive SVI mitigation systems:

- Groundwater Samples: The concentrations of VOCs in groundwater in the vicinity of the SVE systems will be evaluated to assess the SVI pathway into the buildings. Conversion of the active SSVM system to a passive SSVM system will be evaluated if the VOC concentrations do not meet groundwater ARARs (i.e., established groundwater quality standards). Therefore, conversion of the system will be evaluated using the SSCM influent and Sub-Slab Soil Vapor Rebound Sample Result indicators discussed in the next two bullets.

- SSVM Influent: As an indicator of remediation progress in the sub-slab environment, VOCs in the influent to the SSVM system prior to any carbon treatment will be sampled periodically for laboratory analysis. When influent air data reach a stable trend (i.e., they are no longer decreasing) or the laboratory results for the SSVM system influent indicate that the sub-slab soil gas concentrations are below the NYSDOH no further action screening criteria (NYSDOH, October 2006 or updated criteria) and/or EPA industrial use RSLs (http://www.epa.gov/region9/ superfund/prg/) for contaminants of concern, the active SSVM systems will be converted into passive SSVM systems.

- Sub-Slab Soil Vapor Rebound Sample Results: Following the conversion of the systems, periodic performance monitoring will be conducted. If sub-slab soil gas concentrations are reported higher than the industrial use screening criteria cited for two consecutive sampling events, the active SSVM systems will be re-started.

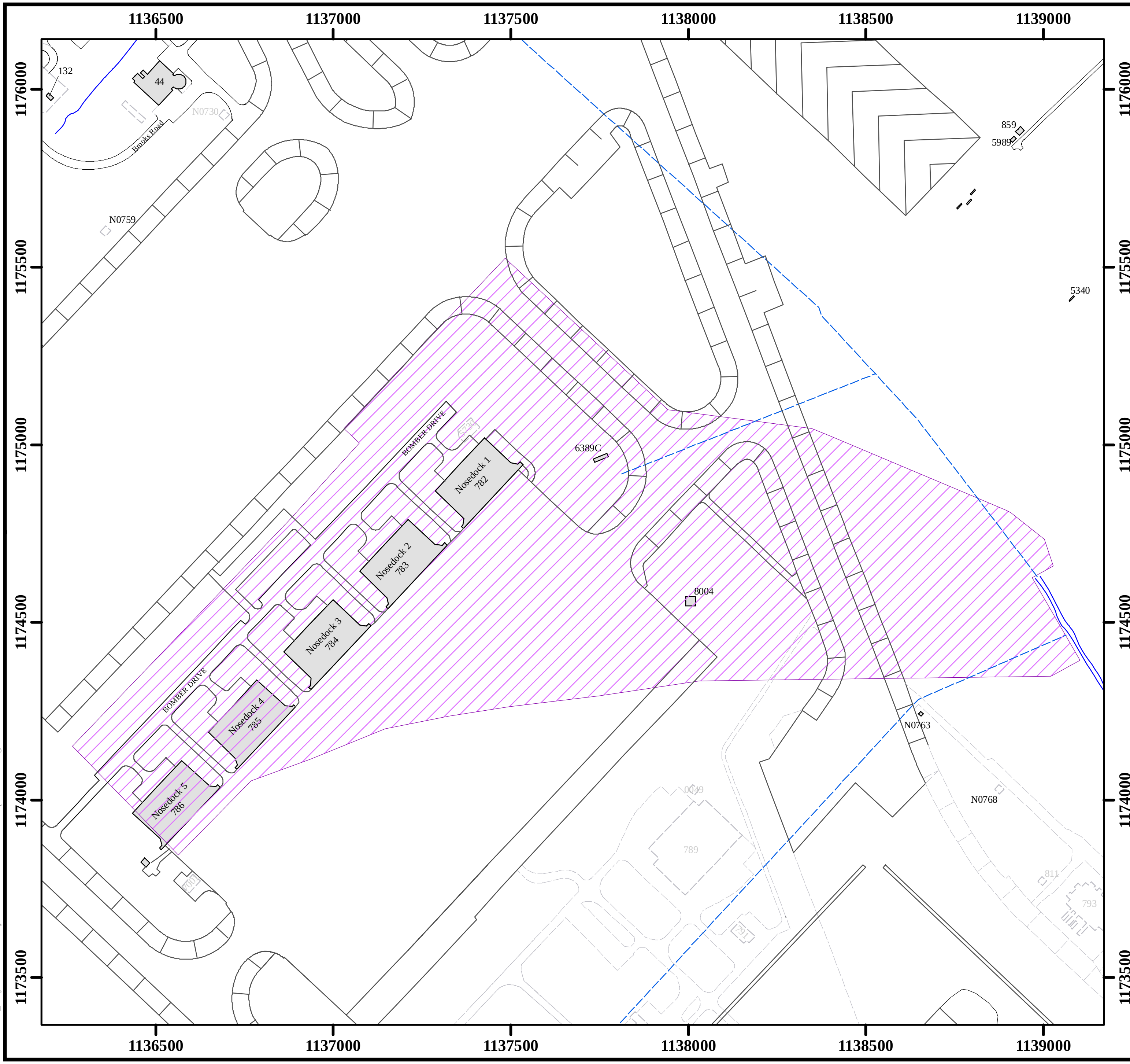
<u>LUC/ICs:</u> LUC/ICs in the form of soil restrictions, groundwater restrictions, and land-use restrictions to prevent residential use were implemented at the SD-052-02 Building 775 Site and SD-052-01 Apron 2 Chlorinated Plume Site in the On-base Groundwater AOC Record of Decision (AFRPA, December 2008). SVI LUC/ICs will be implemented at these sites pursuant to the remedy recommended in this ROD

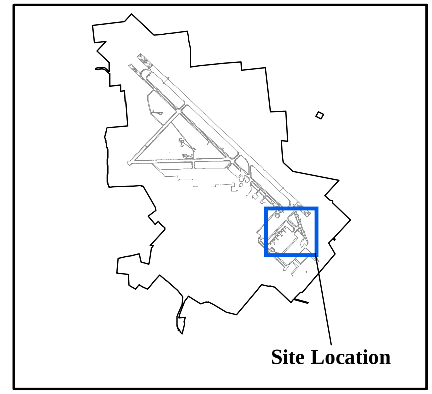
Deed restrictions related to SVI have been placed in the deed for SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786). However, a modification to that deed will be necessary to follow the language provided below. The restrictions will remain within the Area Subject to ICs until EPA and NYSDEC approve a change:

- With respect to the potential for risks posed via indoor air contaminated by chemicals volatilizing from below the building slab (vapor intrusion), a grantee covenant will be included in the deed of any property within the SVI restriction area (Figure 12) that will require either of the following: (a) mitigation of any unacceptable risk as that risk is determined under CERCLA and the NCP in a circumstance with (1) any construction of new buildings (which includes any expansion of the footprint of an existing building) or (2) any change in the current use of existing buildings to a use that would increase the potential exposure of its users to vapor intrusion (e.g., "up zoning", as in changing land use from commercial to residential); or (b) an evaluation of the potential for unacceptable risk associated with vapor intrusion that must occur prior to any construction of new buildings or any up zoning in the current use of existing buildings, and if an unacceptable risk under CERCLA and the NCP associated with vapor intrusion is posed, mitigation of the vapor intrusion shall be included in the design/construction of the structure prior to occupancy or implemented prior to the change in use. Any such mitigation or evaluations will be coordinated with the EPA and NYSDEC. This covenant will remain on the property until the property meets applicable criteria for acceptable risk for specified property use as such criteria and use are established in the applicable ROD, or until such time as it is agreed to by the Air Force, EPA, and NYSDEC.

- The slabs of Buildings 785 and 786 shall not be compromised without the prior written approval of EPA, NYSDEC and the Air Force.

As shown in Figure 12, the SVI boundary does not include Buildings 782, 783, and 784. An SVI evaluation was conducted at these buildings and all detections were below established screening levels and were indicative of acceptable risk. Therefore, the Nosedocks 1 and 2 ROD selected no further SVI action or evaluation for these buildings (AFRPA, July 2011).





Legend

- Existing Road/Airfield
- Removed Road/Airfield
- Storm Drain
- Surface Water
- Existing Facility
- Demolished Facility
- Land Use and Institutional Control
- Existing Facility
- Demolished Facility

0 100 200 300 600
Feet
N

Air Force Civil Engineer Center
former Griffiss Air Force Base
Rome, New York

Figure 12
Land use Controls/
Instutional Controls
SD-052-01 Apron 2
Chlorinated Plume Site
(Buildings 785 and 786)

Since Buildings 774 and 776 have been transferred, a modification to that deed will be necessary. The deed(s) for SD-052-02 Building 775 Site (Buildings 774 and 776) will be modified to include the following restrictions related to SVI and will remain within the Area subject to Institutional Controls until EPA and NYSDEC approve a change:

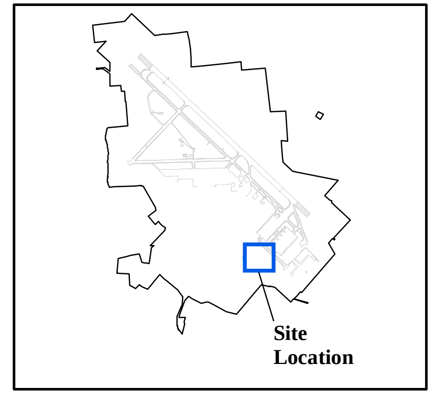
- With respect to the potential for risks posed via indoor air contaminated by chemicals volatilizing from below the building slab (vapor intrusion), a grantee covenant will be included in the deed of any property within the SVI restriction area (Figure 13) that will require either of the following: (a) mitigation of any unacceptable risk as that risk is determined under CERCLA and the NCP in a circumstance with (1) any construction of new buildings (which includes any expansion of the footprint of an existing building) or (2) any change in the current use of existing buildings to a use that would increase the potential exposure of its users to vapor intrusion (e.g., "up zoning", as in changing land use from commercial to residential); or (b) an evaluation of the potential for unacceptable risk associated with vapor intrusion that must occur prior to any construction of new buildings or any up zoning in the current use of existing buildings, and if an unacceptable risk under CERCLA and the NCP associated with vapor intrusion is posed, mitigation of the vapor intrusion shall be included in the design/construction of the structure prior to occupancy or implemented prior to the change in use. Any such mitigation or evaluations will be coordinated with the EPA and NYSDEC. This covenant will remain on the property until the property meets applicable criteria for acceptable risk for specified property use as such criteria and use are established in the applicable ROD, or until such time as it is agreed to by the Air Force, EPA, and NYSDEC.

- The slabs of Buildings 774 and 776 shall not be compromised without the prior written approval of EPA, NYSDEC and the Air Force.

The Air Force will monitor and enforce the below LUC/ICs as described below:

- *Monitoring*: Monitoring of the LUC/ICs will be conducted annually by the Air Force, and a report of the findings will be provided. Any such annual monitoring reports will be included in a separate report and provided to the EPA and NYSDEC. All annual monitoring reports will detail the status of the LUC/ICs and how any LUC/IC deficiencies or inconsistent uses have been addressed, whether the use restrictions and controls were communicated in the deed(s), whether the owners and state and local agencies were notified of the use restrictions and controls affecting the property, and whether use of the property has conformed with such restrictions and controls.

  The LUC/IC monitoring reports will be used in the preparation of the Five-Year Reviews to evaluate the effectiveness of the remedy. The Five-Year Reviews will make recommendations on the continuation, modification, or elimination of annual reports and IC monitoring frequencies. Elimination of the monitoring reports or any changes to LUC/IC monitoring frequencies will be subject to EPA and NYSDEC approval. The Air Force will submit the Five-Year Review reports to the regulatory agencies for review and comment.



Legend

- Existing Road/Airfield
- Removed Road/Airfield
- Demolished
- Existing
- Storm Drain
- Surface Water
- Land Use and Institutional Control
- Existing Facility
- Demolished Facility

0 100 200 300 Feet

N

Air Force Civil Engineer Center
former Griffiss Air Force Base
Rome, New York

Figure 13
Land use Controls/
Instutional Controls
SD-052-02 Building 775 Site
(Buildings 774 and 776)

Response to Violations: The Air Force will notify the EPA and the NYSDEC via e-mail or telephone as soon as practicable, but no later than ten days after discovery, of any activity that is inconsistent with the LUC/IC objective or use restrictions, or any action that may interfere with the effectiveness of the ICs.

- *Enforcement*: Any activity that is inconsistent with the remedial action objectives, LUC/ICs or any action that may interfere with the effectiveness of the LUC/ICs will be addressed by the Air Force as soon as practicable (but in no case more than 10 days) after the Air Force becomes aware of the violation. The Air Force will notify EPA and NYSDEC regarding how the breach has been or will be addressed within 10 days of sending EPA and NYSDEC notification of the breach. The Air Force will exercise such rights under the deed and applicable laws to direct that activities in breach of the controls be immediately halted. To the extent necessary, the Air Force will request the services of the Department of Justice to enforce such rights.

The Air Force, as the lead agency, and the EPA, as the supporting agency, believe the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria based on information currently available. The Agencies expect the Preferred Alternative to satisfy the following statutory requirements of CERCLA § 120(b): 1) be protective of human health and the environment; 2) comply with ARARs; 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element.

12.1 Summary of the Estimated Remedy Costs

Each system has been installed and the only additional costs would be for the continued operation and maintenance. The annual estimated cost for each system would be $77,000. This includes $25,000 for system O&M and $52,000 for LTM.

12.2 Expected Outcomes of the Selected Remedy

Currently, both sites are designated and used for industrial/ commercial (manufacturing/ airfield and related services) and there no anticipated impacts to site use under the selected remedy. Under the remedy, system operation and LUC/ICs will be in place until the source for potential SVI (contaminated groundwater) has been remediated and the absence of SVI potential is confirmed.

13 STATUTORY DETERMINATIONS

Under CERCLA Section 121 and Section 300.430(f)(5)(ii) of the NCP, a remedy must be protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), is cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous substances, pollutants and contaminants as a principal element and a bias against off-site disposal of untreated materials. The following subsections discuss how the selected remedy meets these statutory requirements.

13.1 Protection of Human Health and the Environment

Overall protection of human health and the environment would be achieved under this alternative. Current performance monitoring results demonstrate that the IRA is protective to receptors. The selected remedy also includes land use restrictions which will serve to verify no changes in site land-use and overall protection of human health. To verify that the remedy remains protective of human health and the environment during the period prior to attaining ARARs, five-year reviews will be performed by the Air Force in coordination with EPA and NYSDEC.

13.2 Compliance with Applicable and Relevant and Appropriate Requirements

The NCP requires that the selection of remedial actions at CERCLA sites meet ARARs. Evaluation of the current IRA has confirmed the mitigation of COCs to concentrations below the industrial EPA RSLs for indoor air within all four buildings. While RSLs are not ARARs, since there are no ARARs RSLs are being used as to be considered criteria to establish protective cleanup levels.

13.3 Cost Effectiveness

The selected remedy provides an overall protectiveness to human health and the environment proportional to its cost and with consideration given that the other alternatives will not actively mitigation SVI within the buildings.

13.4 Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

The selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be used in a practicable and cost effective manner for SVI at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786). Of the three alternatives evaluated, this was the only alternative to protect human health and the environment and comply with ARARs. Therefore, the selected remedy provides the best balance in terms of the five balancing criteria (long- term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, and cost), while also considering the statutory preference for treatment as a principal element and considering State and community acceptance.

13.5 Preference for Treatment as a Principal Element

The continuation of the IRA, SVI mitigation by Horizontal Sub-Slab Depressurization, satisfies the statutory preference for treatment that significantly reduces the volume, toxicity, and mobility of COCs within sub-slab vapor.

13.6 Five-Year Review Requirements

Because the source of SVI, groundwater contamination at the SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site, still contains COC concentrations above levels that allow for unlimited use an unrestricted exposure, Section 121(c) of CERCLA and Section 300.430(f)(4)(ii) of the NCP require a review of the remedy at least every five years of the initiation of remediation to verify that the remedy is protective of human health and the environment. The next five-year review for the former Griffiss AFB will occur in 2020.

14 DOCUMENTATION OF SIGNIFICANT CHANGES

There were no significant changes between the preferred alternative presented in the Proposed Plan and this ROD.

15 RESPONSIVENESS SUMMARY

The Air Force, following consultation with and concurrence of EPA and NYSDEC, released for public comment the proposed plan for SVI at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) on August 19, 2016. The release of the proposed plan initiated the public comment period, which concluded on September 19, 2016.

During the public comment period, a public meeting was held on September 7, 2016 at the Griffiss Institute located at 725 Daedalian Drive, Rome, New York 13441. The selected remedy for SVI at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786) was presented at the public meeting and a court reporter recorded the proceedings of the meeting. Copies of the transcript and attendance list are included in the Administrative Record. The public comment period and the public meeting were intended to elicit public comment on the proposed plan for SVI at SD-052-02 Building 775 Site (Buildings 774 and 776) and SD-052-01 Apron 2 Chlorinated Plume Site (Buildings 785 and 786).

This document provides the response to comments received during the public comment period. No verbal or written comments were received at the public meeting or during the public comment period on the selected remedy. One verbal comment was received during the public meeting for the proposed plan. The comment was in reference to the SVI screening levels/EPA RSLs and where they could be found. The Air Force verbally addressed the comment during the meeting to the satisfaction of the commenter. The comment and answer are included in the public meeting transcript provided in Appendix B.

16 REFERENCES

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17 GLOSSARY

Administrative Record: A file established and maintained in compliance with section 113(K) of the Comprehensive Environmental Response, Compensation, and Liability Act consisting of information upon which the lead agency bases its final decisions on the selection of remedial method(s) for a Superfund site. The Administrative Record is available to the public.

Agency for Toxic Substances and Disease Registry (ATSDR): The federal agency responsible for performing health assessments for facilities on the National Priorities List.

Base Realignment and Closure Act (BRAC): A federal law that established a commission to determine which military bases would be closed and which would remain active.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The act requires federal agencies to investigate and remediate abandoned or uncontrolled hazardous waste sites.

Federal Facility Agreement: An agreement between the EPA, the State of New York, and the Air Force to evaluate waste disposal sites at the former Griffiss AFB and perform remediation if necessary.

Feasibility Study (FS): An evaluation to identify and evaluate appropriate remedial goals and remedial alternatives for a site based upon United States Environmental Protection Agency criteria.

Groundwater Recharge Zone: An area where the underlying aquifer (water bearing zone) receives water (recharge) through downward flow from both precipitation which infiltrates into the ground and other surface water bodies such as streams, lakes, etc.

Installation Restoration Program (IRP): The United States Air Force subcomponent of the Defense Environment Restoration Program (DERP) that specifically deals with investigating and remediating sites associated with suspected releases of toxic and hazardous materials from past activities. The DERP was established to clean up hazardous waste disposal and spill sites at Department of Defense facilities nationwide.

Institutional Controls: Non-engineering measures designed to prevent or limit exposure to hazardous substances left in place at a site, or to verify the effectiveness of the chosen remedy. Institutional controls are usually, but not always, legal controls, such as easements, restrictive covenants, and zoning ordinances.

Monitoring: Ongoing collection of information about the environment that helps gauge the effectiveness of a cleanup action. Information gathering may include groundwater well sampling, surface water sampling, soil sampling, air sampling, and physical inspections.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The NCP provides the organization, structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants. The NCP is required under CERCLA and the Clean Water Act, and EPA has been delegated the responsibility for preparing and implementing the NCP. The NCP is applicable to response actions taken pursuant to the authorities under CERCLA and the Clean Water Act.

National Priorities List: EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program.

Operation and Maintenance (O&M): A step in the remedial program. While a site is being remediated, it is overseen to make sure that the remedy is working as planned and that the construction remains operational.

Proposed Plan: A public document that solicits public input on a recommended remedial alternative to be used at a National Priorities List (NPL) site. The Proposed Plan is based on information and technical analysis generated during the RI/FS. The recommended remedial action could be modified or changed based on public comments and community concerns.

Record of Decision (ROD): A public document that explains the remedial alternative to be used at a National Priorities List (NPL) site. The ROD is based on information and technical analysis generated during the remedial investigation, and on consideration of the public comments and community concerns received on the Proposed Plan. The ROD includes a Responsiveness Summary of public comments.

Remedial Action: An action that stops or substantially reduces a release or threat of a release of hazardous substances that is serious but not an immediate threat to human health or the environment.

Remedial Investigation (RI): An investigation that determines the nature and extent and composition of contamination at a hazardous waste site. It is used to assess the types of remedial options that are developed in the feasibility study.

Semivolatile Organic Compounds (SVOCs): Organic constituents which are generally insoluble in water and are not readily transported in groundwater.

Superfund: The trust fund, created by CERCLA out of special taxes, used to investigate and clean up abandoned or uncontrolled hazardous waste sites. Out of this fund EPA either: (1) pays for site remediation when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work or (2) takes legal action to force parties responsible for site contamination to clean up the site or pay back the federal government for the cost of the remediation. Federal facilities are not eligible for Superfund monies.

Volatile Organic Compounds (VOCs): Organic constituents which tend to volatilize or to change from a liquid to a gas form when exposed to the atmosphere. Many VOCs are readily transported in groundwater.

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