Quarterly Operations Report
Third Quarter 2016

Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant
Bethpage, New York

Contract No. N40085-10-D-9409
Contract Task Order No. 0005

February 2017

Prepared for:

Naval Facilities Engineering Command Mid-Atlantic
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Norfolk, VA 23511

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Acronyms and Abbreviations

bgs	below ground surface
CTO	Contract Task Order
DAR	Division of Air Resources
DCA	dichloroethane
DCE	dichloroethene
DoD	Department of Defense
ELAP	Environmental Laboratory Accreditation Program
FMS	Flow Monitoring Station
GOCO	Government Owned Contractor Operated
i.w.	inches of water column
KGS	KOMAN Government Solutions, LLC
NAVFAC	Naval Facilities Engineering Command Mid-Atlantic
Navy	U.S. Department of the Navy
NELAC	National Environmental Accreditation Conference
NG	Northrop Grumman
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and Maintenance
PAL	project action level
PCB	polychlorinated biphenyls
PCE	tetrachloroethene
PID	photoionization detector
QA/QC	quality assurance / quality control
RPD	relative percent difference
scfm	standard cubic feet per minute
SVECS	soil vapor extraction containment system
SVEW	soil vapor extraction well
SVOC	semi-volatile organic compound
SVPM	soil vapor pressure monitor
TCA	trichloroethane
TCE	trichloroethene

TCL	target compound list
TtEC	Tetra Tech EC, Inc.
TtNUS	Tetra Tech NUS, Inc.
VGAC	vapor–phase granular activated carbon
VOC	volatile organic compound

1.0 INTRODUCTION

KOMAN Government Solutions, LLC (KGS) has prepared this Quarterly Operations Report for the Third Quarter 2016 for the Soil Vapor Extraction Containment System (SVECS) at Site 1, Former Drum Marshalling Area, at the Naval Weapons Industrial Reserve Plant (NWIRP) in Bethpage, New York. This report has been prepared for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC), Mid-Atlantic, under Contract No. N40085-10-D-9409, Contract Task Order (CTO) No. 0005. This Third Quarter 2016 Operations Report details activities that occurred from July 2016 to September 2016. Data was collected and operational activities were performed by KGS in accordance with the following documents:

- *Final Operation & Maintenance Plan for Soil Vapor Extraction Containment System Site 1, Former Drum Marshalling Yard at Naval Weapons Industrial Reserve Plant Bethpage, New York* prepared by Tetra Tech EC, Inc. (TtEC) in 2010, hereafter referred to as the "O&M Manual."

- *Final Supplemental Offsite Soil Vapor Intrusion Monitoring Plan for the Soil Vapor Extraction Containment System, Site 1, Former Drum Marshalling Yard at Naval Weapons Industrial Reserve Plant, Bethpage, New York* prepared by Tetra Tech NUS, Inc. (TtNUS) in 2012.

1.1 Site Location

NWIRP Bethpage is located in east central Nassau County, Long Island, New York, approximately 30 miles east of New York City. In the late 1990s, the Navy's property totaled approximately 109.5 acres and was formerly a Government Owned Contractor-Operated (GOCO) facility that was operated by Northrop Grumman (NG) until September 1998. NWIRP Bethpage was bordered on the north, west, and south by property owned, or formerly owned, by NG that covered approximately 550 acres, and on the east by a residential neighborhood. The Navy currently retains approximately nine acres of the former NWIRP, including Site 1, which lies within the fenced area of NWIRP Bethpage and is located east of Plant No. 3, west of 11th Street, and north of Plant 17 South (**Figures 1 and 2**).

1.2 Background

NWIRP Bethpage was established in 1943. Since inception, the primary mission of the facility has been the research, prototyping, testing, design engineering, fabrication, and primary assembly of military aircraft. Historical operations that resulted in hazardous material generation at the facility included metal finishing processes, maintenance operations, painting of aircraft and components, and other activities that involve aircraft manufacturing. Wastes generated by plant operations were disposed of directly into drainage sumps, dry wells, and/or on the ground surface, resulting in the disposal of a number of hazardous wastes, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and inorganic analytes (chromium and cadmium) at the site. Some of these contaminants have migrated from the source area to surrounding areas, including the soils at these sites and the groundwater beneath and downgradient of the NWIRP Bethpage property. NWIRP Bethpage is currently listed by the New York State Department of Environmental Conservation (NYSDEC) as an "inactive hazardous waste site" (#1-30-003B).

Soils at Site 1 consist mainly of unconsolidated sediments that overlie crystalline bedrock. A clay unit is present near the groundwater table (50 feet below ground surface [bgs]) at the southeast corner of the site. This clay unit is suspected to be a source of chlorinated solvents that are migrating into the overlying soil gas and the source of off-site VOCs in soil vapor (TtEC 2010).

Chlorinated solvents including trichloroethene (TCE), tetrachloroethene (PCE), and 1,1,1-trichloroethane (TCA) have been identified as the VOCs of interest in soil gas at the site. Concentrations greater than 1,000 micrograms per cubic meter ($\mu g/m^3$) of soil vapor have been directly associated with Site 1 activities and historical environmental data, and based on preliminary screening, exceed guidelines established by the New York State Department of Health (NYSDOH) for sub-slab soil vapor concentrations at the time. Based on this NYSDOH guidance, the following project action levels (PALs) were established: 1,000 $\mu g/m^3$ for 1,1,1-TCA, 1,000 $\mu g/m^3$ for PCE, and 250 $\mu g/m^3$ for TCE (TtNUS 2012). Of these compounds, TCE is the primary VOC of concern. Mitigation of TCE contamination in accordance with NYSDOH guidance is expected to remediate other VOCs associated with the site. PCBs, cadmium, and chromium have also been identified in site soils at concentrations requiring remediation. The majority of these chemicals has been detected in the central portion of Site 1 and will be addressed via a separate remediation (TtEC 2010).

Prior to implementation of the SVECS, the mean concentrations of VOCs in soil gas samples collected along the eastern fence-line were 41,128 $\mu g/m^3$ of TCE, 381 $\mu g/m^3$ of PCE, and 20,634 $\mu g/m^3$ of 1,1,1-TCA. The maximum concentrations of VOCs in the soil gas samples were 180,000 $\mu g/m^3$ of TCE, 1,200 $\mu g/m^3$ of PCE, and 90,000 $\mu g/m^3$ of 1,1,1-TCA (TtEC 2010).

1.3 Project Overview and Objective

The remedial objective for this project is to use an on-site soil vapor extraction system to prevent further off-site migration of VOC-contaminated soil vapor and to the extent practical, capture contaminated soil vapor with a TCE concentration greater than 250 $\mu g/m^3$. A secondary objective of this project is to address soil vapor with a TCE concentration greater than 5 $\mu g/m^3$. The SVECS is an interim action intended to address migration of VOCs in contaminated soil vapors. It is expected to operate continuously 24 hours/day, seven days/week, with the exception of maintenance and adjustment periods, until the remedial objectives are met (TtEC 2010).

1.4 SVECS Overview

The SVECS consists of soil vapor extraction, soil vapor monitoring, and soil vapor treatment. Twelve SVE wells (SVEWs) are located along the eastern boundary of Site 1 in six clusters, each consisting of one intermediate well and one deep well. Intermediate wells SVE-101I, SVE-102I, SVE-103I, SVE-104I, SVE-105I, and SVE-106I have a screened interval between 25 and 35 ft bgs. Deep wells SVE-101D, SVE-102D, SVE-103D, SVE-104D, SVE-105D, and SVE-106D have a screened interval between 40 and 60 ft bgs. The groundwater table fluctuates between approximately 50 and 55 feet bgs. Each SVEW is operated at a flow rate such that the combined total flow rate is approximately 300-400 standard cubic feet per minute (scfm) of soil vapor. Each intermediate depth SVEW requires an approximate vacuum of 4 inches of water column (i.w.) and each deep SVEW requires an approximate vacuum of 10 to 20 i.w. in

order to extract the targeted flow rates. These twelve SVEWs have been piped below the ground to the Flow Monitoring Station (FMS), where flow, vacuum, and vapor quality are monitored. Within the FMS, the discharges from the individual SVEWs have been equipped with a 2-inch flow control butterfly valve, a vacuum gauge, and a sampling port. The sampling port is utilized to measure the flow rate from an individual well using a portable velocity meter and to collect vapor samples. All the SVE lines collect into a single manifold within the FMS and from this location a single underground pipeline has been routed approximately 1,400 linear feet to the Treatment Building (Building 03-35). Five additional SVEWs (SV-107D, SV-108D, SV-109D, SV-110D, and SV-111D) were installed in October 2011 to address potential VOCs under Plant No. 3 and the South Warehouse. A site plan depicting well locations is included as **Figure 3**.

The SVECS is housed within the Treatment Building, an existing and unoccupied building also known as Building 03-35. The treatment system consists of a moisture separator, two SVE blowers, and a 5,000-lb vapor-phase granular activated carbon (VGAC) unit for removal of chlorinated VOCs from the off-gas. Soil vapor that enters the Treatment Building first passes through the moisture separator tank where any condensate is separated. To date, no condensate has formed in this tank. The vapor is then passed through an air filter and SVE blower and then treated in the VGAC unit. The treated vapor is discharged from the VGAC via an exhaust stack. The SVECS has a control panel comprised of mechanical interlocks and relays for local operation. A System Layout Plan is presented in **Figure 4**, which also illustrates the design flow rates through the soil vapor extraction and treatment process.

The off-gas from the SVECS is monitored for chlorinated VOCs as identified in the NYSDEC Division of Air Resources (DAR) permit equivalent effluent limitations and updated approval documentation (**Appendix A**) and monitoring requirements (TtEC 2010). Samples are submitted to a National Environmental Laboratory Accreditation Conference (NELAC)-accredited, Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)-certified laboratory, Air Toxics, Inc. located in Folsom, CA, for analysis of VOCs by modified method TO-15. Prior to January 2014, samples were analyzed for target compound list (TCL) VOCs. As of January 2014, upon approval by NYSDEC and NYSDOH, samples are analyzed for site-specific VOCs. The site-specific VOCs are: 1,1,1-TCA, 1,1-dichloroethane (DCA), 1,1-dichloroethene (DCE), 1,2-DCA, cis-1,2-DCE, PCE, trans-1,2-DCE, TCE, and vinyl chloride.

A total of 18 soil vapor pressure monitor (SVPM) / soil gas monitoring points have been installed in the neighborhood east of Site 1 at NWIRP Bethpage (**Figure 3**). These off-site monitoring points consist of eight previously existing SVPMs as well as 10 SVPMs installed in September 2012. Pressure readings from the SVPMs are collected quarterly and used to evaluate the SVECS vacuum field. In addition, analytical results of vapor samples collected annually from these locations and the pressure readings are used to further evaluate the SVECS operation and the potential for vapor intrusion.

2.0 SVECS OPERATION AND MAINTENANCE

While designed to run autonomously, the SVECS requires regular visits by an operator to record and adjust operational parameters and to perform scheduled maintenance. The SVECS is equipped with telemetry that will alert an on-call operator in the event of a plant shutdown.

2.1 Routine Maintenance Activities

Routine maintenance activities at the SVECS were performed during the operator's weekly visits during this reporting period. These activities include general site inspections (of the grounds, buildings, doors and locks), collection of operational data (vapor flowrates, pressures, vacuums, temperature and photoionization detector [PID] readings), adjustment of system valves, collection of vapor samples (on a monthly and quarterly basis), collection/disposal of condensate if needed, cleaning of filters, switching of lead/lag blower assignments, and preventive maintenance of system equipment.

2.2 Non-routine Maintenance / Site Activities

The following non-routine activities / repair activities occurred at the SVECS during this quarterly reporting period:

- On 7 July, the air conditioner unit for the block building was replaced.
- On 19 July, the vacuum gauge for SV-106D was replaced.

3.0 SVECS MONITORING

Several process vapor samples are collected on a monthly basis to monitor the SVECS operation. These samples consist of an influent sample (as well as a duplicate sample), located immediately prior to the VGAC unit, and an effluent sample, located after the VGAC unit and before the exhaust stack. Vapor samples are also collected from the 12 original SVEWs on a quarterly basis to monitor the capture of the contaminated soil vapor by the SVEWs. In addition, quarterly pressure measurements are collected from the SVEWs and SVPMs to monitor the SVECS vacuum field, and soil gas sampling for SVPMs is conducted annually (generally in the winter time-frame) to evaluate the effectiveness of the SVECS. The first annual soil gas sampling event was conducted in the winter 2012-2013. An additional round of SVPM sampling, outside of the annual winter SVPM sampling, was performed in September 2016 to further evaluate recent concentration trends of several SVPMs, as discussed in Section 3.4 below.

3.1 Monthly Air Quality Monitoring

Analysis of influent and effluent vapor sample locations is performed to evaluate VOC mass removal and the effectiveness of the VGAC adsorption unit. Time-integrated vapor samples are collected using 6-L summa canisters with 30-minute flow regulators.

Treated off-gas discharged at the exhaust stack is subject to emissions limitations. Initially, discharge goals were derived from calculations submitted by the Navy and approved by the NYSDEC DAR in February 2010. In September 2011, the Navy submitted an evaluation proposing revised discharge goals (TtNUS 2011), which NYSDEC approved in October 2011. A copy of this documentation is included as **Appendix A**.

A summary of monthly vapor sampling results collected in July, August, and September (Third Quarter) is presented in **Tables 1, 2, and 3**, respectively. Emission rate calculations for both the influent stream (prior to VGAC treatment) and effluent stream (following VGAC treatment) and estimated monthly mass recoveries are also presented. Emission rates of the influent stream as well as mass recovery are calculated to monitor progress and determine when influent concentrations have reached levels at which vapor treatment via carbon adsorption is no longer required. The data presented in **Tables 1, 2, and 3** demonstrate that all constituents were within the effluent emission rate guidelines (**Appendix A)**. Raw analytical data is provided under a separate cover.

3.2 Quarterly Air Quality Monitoring of SVEWs

Time-integrated vapor samples are collected quarterly using 6-L summa canisters with 30-minute flow regulators at six intermediate and six deep SVE wells. The samples are collected for the purpose of tracking and documenting the performance of the SVECS (TtEC 2010).

Quarterly vapor samples were collected on 13 September from the 12 SVEWs. A summary of detected compounds is included as **Table 4**. Analytical results of select VOCs (1,1,1-TCA, PCE, and TCE) detected at the 12 SVEWs during the Third Quarter monitoring event are presented graphically as **Figure 5**. Raw analytical data is provided under a separate cover. Historical analytical results of

quarterly vapor samples collected from December 2009 through the Third Quarter 2016 are presented in **Table 5**.

3.3 Quarterly Soil Vapor Pressure Monitoring of SVEWs and Off-site SVPMs

Vacuum readings are collected quarterly from the 12 SVEWs and 18 SVPMs in order to monitor the SVECS vacuum field. Vacuum readings from the 12 SVEWs and 18 SVPMs were collected both before and after the collection of soil gas samples from these locations, on 12 September and 13 September, respectively. Results of the Third Quarter vapor monitoring are presented in **Table 6**.

Vacuum readings for the individual SVEWs provide an indication that a vacuum is being established along the fence line. During the Third Quarter, the recorded vacuum measurements from the SVEWs ranged from 1.4 i.w. to 13.5 i.w.

As indicated in **Table 6**, vacuum measurements of the SVPMs ranged from 0.00 to 0.14 i.w. during the Third Quarter monitoring event. These measurements indicate that a vacuum field continues to be maintained in the residential neighborhood adjacent to Site 1. Vacuum readings from the 18 SVPMs are presented graphically as **Figure 6**.

Historical results of quarterly vapor monitoring from Third Quarter 2012 through Third Quarter 2016 are presented in **Table 7**.

3.4 Vapor Quality Monitoring of Off-site SVPMs

Time-integrated vapor samples are collected annually, generally in the winter time-frame, using 6-L summa canisters with 30-minute flow regulators at 18 SVPM locations.

As mentioned above, an additional round of SVPM samples were collected in September 2016. SVPM data collected during the previous January 2016 annual sampling event indicated increasing contaminant concentration trends at SVPM-2006 I and SVPM-2006D, especially for cis-1,2-DCE. These SVPMs are located along 10th Street, between Sycamore Avenue and Maple Avenue, to the east of the site; similar trends were not noted in other nearby SVPMs. Based on the results from January 2016, an additional round of SVPM sampling was performed in September 2016 to further evaluate these recent trends, as discussed below.

The next routinely scheduled annual SVPM sample collection will be performed in January 2017, results of which will be discussed in the corresponding quarterly report.

3.4.1 Vapor Quality Results

Vapor samples were collected on 12-13 September from the 18 SVPM locations. Validated analytical results of samples collected in September 2016 are summarized in **Table 8**. As indicated, 1,1,1-TCA was detected at only one of the 18 locations, at a concentration of 0.59 J µg/m^3 in the duplicate sample from SVPM-2006D. PCE was detected at 15 of the 18 locations, with concentrations ranging from 0.94 J µg/m^3 at SVPM-2002S to 6.8 µg/m^3 at SVPM-2007S. TCE was detected at 17 of the 18 locations, with

concentrations ranging from 2.5 J µg/m^3 at SVPM-2004S to 61 J µg/m^3 (and a duplicate concentration of 84 J µg/m^3) at SVPM-2006D. The detected concentrations remain below the PALs established for this system of 1,000 µg/m^3 for 1,1,1-TCA, 1,000 µg/m^3 for PCE, and 250 µg/m^3 for TCE (TtNUS 2012).

Data validation reports and a validated analytical data summary are presented in **Appendix B**. Raw analytical data is provided under separate cover. Historical vapor quality analytical results collected from the 18 SVPM locations, beginning in October 2008 and including the most recent results obtained in September 2016, are presented in **Table 9**.

3.4.2 Quality Assurance/Quality Control Sampling

Quality assurance/quality control (QA/QC) samples were collected during the annual off-site vapor monitoring event in accordance with the *Final Supplemental Offsite Soil Vapor Intrusion Monitoring Plan* (TtNUS 2012). These samples consisted of blind field duplicates (collected from SVPM-2001D and SVPM-2006D) and field blanks as ambient air samples.

For field blanks, ambient air samples were collected in conjunction with the soil gas sampling to evaluate potential chemicals in the local ambient air. The 6-L summa canister was positioned at an upwind location at a height of approximately four feet above grade. The ambient air sample was obtained over an eight-hour period for each day that routine samples were collected.

For field duplicate samples, the precision between the original sample and its duplicate is evaluated by calculating the relative percent difference (RPD). RPDs for the Third Quarter sampling event are presented in the data validation report in **Appendix B**. As indicated, RPDs for all analytes were below the guideline of 50% when calculated. The overall consistency between the samples and its duplicate verifies that proper sample collection methods were followed.

3.5 Soil Vapor Quality Concentration Trends

3.5.1 Historical SVEW Vapor Quality Results and Concentration Trends

Historical vapor analytical results for the 12 SVEWs through the Third Quarter are presented in **Table 5**. In addition, concentration trends of select VOCs over time for the SVECS combined influent (1,1,1-TCA, PCE, TCE, and total VOCs) and each of the 12 SVEWs (1,1,1-TCA, PCE, and TCE) are presented in **Appendix C**. Concentration trends observed in the 12 SVEWs through the Third Quarter are discussed below.

- Combined Influent: Overall VOC concentrations in the combined influent increased somewhat throughout the Third Quarter, with total VOC concentrations of 2,561 µg/m^3, 2,250 µg/m^3, and 3,222 µg/m^3 in July, August, and September, respectively. Overall concentrations remain below baseline concentrations observed in December 2009 when a total VOC concentration of 63,650 µg/m^3 was observed.

- SV-101I: Concentrations observed at this location decreased in the Third Quarter from concentrations observed in the Second Quarter, with non-detectable levels of TCE, PCE and

1,1,1-TCA, suggesting Third Quarter results may not be indicative of actual conditions. These non-detectable concentrations are below baseline concentrations observed in December 2009 (180,000 µg/m^3 TCE, 1,700 µg/m^3 PCE, and 51,000 µg/m^3 1,1,1-TCA).

- SV-101D: Concentrations observed at this location decreased in the Third Quarter from concentrations observed in the Second Quarter, with non-detectable levels of TCE, PCE and 1,1,1-TCA, suggesting Third Quarter results may not be indicative of actual conditions. These non-detectable concentrations are below baseline concentrations observed in December 2009 (100,000 µg/m^3 TCE, 3,200 µg/m^3 PCE, and 26,000 µg/m^3 1,1,1-TCA).

- SV-102I: Concentrations observed at this location increased in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 21 µg/m^3 TCE, 2.9 J µg/m^3 PCE, and 1.3 J µg/m^3 of 1,1,1-TCA. These concentrations are slightly above baseline concentrations observed in December 2009 (5.6 µg/m^3 TCE, 2.4 µg/m^3 PCE, and non-detectable 1,1,1-TCA), but are below the peak concentrations observed in June 2010 (300 µg/m^3 TCE, 17 µg/m^3 PCE, and 13 µg/m^3 1,1,1-TCA).

- SV-102D: Concentrations observed at this location increased in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 150 µg/m^3 TCE, 51 µg/m^3 PCE, and 6.6 µg/m^3 of 1,1,1-TCA. Concentrations remain below baseline concentrations observed in December 2009 for TCE and 1,1,1,-TCA (440 µg/m^3 TCE and 130 µg/m^3 1,1,1-TCA). The concentration of PCE is above the baseline concentration observed in December 2009 (10 µg/m^3 PCE), and is the maximum concentration observed to date.

- SV-103I: Concentrations observed at this location increased in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 67 µg/m^3 TCE, 200 µg/m^3 PCE, and 6.0 µg/m^3 1,1,1-TCA. Concentrations remain below baseline concentrations observed in December 2009 (900 µg/m^3 TCE, 580 µg/m^3 PCE, and 900 µg/m^3 1,1,1-TCA).

- SV-103D: Concentrations observed at this location decreased in the Third Quarter from concentrations observed in the Second Quarter, with non-detectable levels of TCE, PCE and 1,1,1-TCA, suggesting Third Quarter results may not be indicative of actual conditions. These non-detectable concentrations are below baseline concentrations observed in December 2009 (3,100 µg/m^3 TCE, 20,000 µg/m^3 PCE, and 3,000 µg/m^3 1,1,1-TCA).

- SV-104I: Concentrations observed at this location increased in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 83 µg/m^3 TCE, 80 µg/m^3 PCE, and 6.9 µg/m^3 1,1,1-TCA. Concentrations remain below baseline concentrations observed in December 2009 (710 µg/m^3 TCE, 3,100 µg/m^3 PCE, and 730 µg/m^3 1,1,1-TCA).

- SV-104D: Concentrations observed at this location increased or remained similar in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 1,400 µg/m^3 TCE, 9,400 µg/m^3 PCE, and 460 µg/m^3 1,1,1-TCA. Concentrations remain below baseline concentrations observed in December 2009 (4,600 µg/m^3 TCE, 20,000 µg/m^3 PCE, and 3,600 µg/m^3 1,1,1-TCA).

- SV-105I: Concentrations observed at this location increased in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 250 µg/m^3 TCE, 64 µg/m^3 PCE, and 16 µg/m^3 1,1,1-TCA. These concentrations are above baseline concentrations observed in December 2009 for TCE and 1,1,1-TCA (76 µg/m^3 TCE and 9.9 µg/m^3 1,1,1-TCA), below baseline concentrations for PCE (70 µg/m^3 PCE), and below peak concentrations observed in June 2010 for TCE, PCE, and 1,1,1-TCA (370 µg/m^3 TCE, 240 µg/m^3 PCE, and 29 µg/m^3 1,1,1-TCA).

- SV-105D: Concentrations observed at this location in the Third Quarter were similar to concentrations observed in the Second Quarter, with concentrations of 360 µg/m^3 for TCE, 150 µg/m^3 for PCE, and 47 µg/m^3 for 1,1,1-TCA. These concentrations are below baseline concentrations observed in December 2009 (1,700 µg/m^3 TCE, 2,100 µg/m^3 PCE, and 550 µg/m^3 1,1,1-TCA).

- SV-106I: Concentrations observed at this location increased in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 190 µg/m^3 TCE, 20 µg/m^3 PCE, and 12 µg/m^3 1,1,1-TCA. These concentrations are below baseline concentrations observed in December 2009 (1,900 µg/m^3 TCE, 390 µg/m^3 PCE, and 220 µg/m^3 1,1,1-TCA).

- SV-106D: Concentrations observed at this location increased in the Third Quarter from concentrations observed in the Second Quarter, with concentrations of 450 µg/m^3 TCE, 57 µg/m^3 PCE, and 30 µg/m^3 1,1,1-TCA. These concentrations are below baseline concentrations observed in December 2009 (3,400 µg/m^3 TCE, 720 µg/m^3 PCE, and 340 µg/m^3 1,1,1-TCA).

3.5.2 Historical SVPM Vapor Quality Results and Concentration Trends

Table 9 presents historical vapor quality analytical results collected from the 18 SVPM locations, beginning in October 2008 and including the most recent results obtained in September 2016. This information is also presented graphically as **Figure 7**. As indicated, concentrations observed in September 2016 have decreased substantially from initial concentrations observed in October 2008, and were generally similar to those observed in January 2016, with a few exceptions, as discussed in the *Concentration Trends Summary* below.

TCE Detection Summary

- In 2008, TCE was detected at all 18 locations, with concentrations ranging from 1.0 µg/m^3 (SVPM-2004S) to 89,000 µg/m^3 (SVPM-2002I); concentrations exceeded the PAL of 250 µg/m^3 at nine locations (SVPM-2001S, SVPM-2001I, SVPM-2001D, SVPM-2002S, SVPM-2002I, SVPM-2002D, SVPM-2003D, SVPM-2004I, and SVPM-2004D).

- In 2013, TCE concentrations ranged from non-detectable levels at 12 locations to 47 µg/m^3 (SVPM-2006I), and no locations exceeded the PAL of 250 µg/m^3.

- In 2014, TCE was detected at nine of the 18 locations, with concentrations ranging from 0.73 J µg/m^3 at SVPM-2003I to 3.7 J µg/m^3 at SVPM-2004I and no locations exceeded the PAL of 250 µg/m^3.

- In 2015, TCE was detected at two of the 18 locations, with concentrations ranging from 1.5 J µg/m^3 at SVPM-2004D to 30 µg/m3 at SVPM-2006D, and no locations exceeded the PAL of 250 µg/m^3.

- In January 2016, TCE was detected at six of the 18 locations, with concentrations ranging from 1.6 J µg/m^3 at SVPM-2006S to 48 µg/m^3 (and a duplicate concentration of 48 µg/m^3) at SVPM-2006I, and no locations exceeded the PAL of 250 µg/m^3.

- In September 2016, TCE was detected at 17 of the 18 locations, with concentrations ranging from 2.5 J µg/m^3 at SVPM-2004S to 61 J µg/m^3 (and a duplicate concentration of 84 J µg/m^3) at SVPM-2006D, and no locations exceeded the PAL of 250 µg/m^3.

PCE Detection Summary

- In 2008, PCE was detected at all 18 locations, with concentrations ranging from 1.8 µg/m^3 (SVPM-2004S) to 5,000 µg/m^3 (SVPM-2001I); concentrations exceeded the PAL of 1,000 µg/m^3 at two locations (SVPM-2001S and SVPM-2001I).

- In 2013, PCE concentrations ranged from non-detectable levels at seven locations to 2.3 J µg/m^3 (SVPM-2004D), and no locations exceeded the PAL of 1,000 µg/m^3.

- In 2014, PCE was detected at 15 of the 18 locations, with concentrations ranging from 0.53 J µg/m^3 at SVPM-2001D to 2.9 J µg/m^3 at SVPM-2004I, and no locations exceeded the PAL of 1,000 µg/m^3.

- In 2015, PCE was detected at three of the 18 locations, with concentrations ranging from 1.7 J µg/m^3 at SVPM-2006D to 7.1 µg/m^3 at SVPM-2004D, and no locations exceeded the PAL of 1,000 µg/m^3.

- In January 2016, PCE was detected at ten of the 18 locations, with concentrations ranging from 0.83 J µg/m^3 at SVPM-2004I to 10 µg/m^3 at SVPM-2001D, and no locations exceeded the PAL of 1,000 µg/m^3.

- In September 2016, PCE was detected at 15 of the 18 locations, with concentrations ranging from 0.94 J µg/m^3 at SVPM-2002S to 6.8 µg/m^3 at SVPM-2007S, and no locations exceeded the PAL of 1,000 µg/m^3.

1,1,1-TCA Detection Summary

- In 2008, 1,1,1-TCA was detected at all 18 locations, with concentrations ranging from 1.4 µg/m^3 (SVPM-2004S) to 52,000 µg/m^3 (SVPM-2002I); concentrations exceeded the PAL of 1,000 µg/m^3 at six locations (SVPM-2001S, SVPM-2001I, SVPM-2001D, SVPM-2002S, SVPM-2002I, SVPM-2002D).

- In 2013, 1,1,1-TCA was detected at only one location, SVPM-2007D, at a concentration of 1.3 J µg/m^3, well below the PAL of 1,000 µg/m^3.

- In 2014, 1,1,1-TCA was not detected at any location.

- In 2015, 1,1,1-TCA was not detected at any location.

- In January 2016, 1,1,1-TCA was detected at only one of the 18 locations, at a concentration of 0.87 J µg/m^3 at SVPM-2007D, well below the PAL of 1,000 µg/m^3.

- In September 2016, 1,1,1-TCA was detected at only one of the 18 locations, at a concentration of 0.59 J µg/m^3 in the duplicate sample from SVPM-2006D, well below the PAL of 1,000 µg/m^3.

Concentration Trends Summary

Concentration trends of select VOCs (TCE, PCE, 1,1,1-TCA, and cis-1,2-DCA) over time for each of the 18 SVPMs are presented in **Appendix D**. As indicated by the trend graphs and as discussed above, an overall decreasing trend was observed at a majority of the locations between October 2008 and September 2016, with a few exceptions. These exceptions include SVPM-2006I, SVPM-2006D, and to a lesser extent, SVPM-2002D, as discussed below. Though concentrations at several other SVPMs increased slightly in 2016, overall concentrations have decreased and recent concentrations remain low (below 10 µg/m^3); therefore, trends of these SVPMs are not discussed below.

- SVPM-2002D: Concentrations of TCE and PCE increased in September 2016 (28 µg/m^3 TCE and 2.8 J µg/m^3 PCE) from concentrations observed in January 2016 (non-detectable levels of TCE and PCE). 1,1,1-TCA and cis-1,2-DCE were not detected during either event. However, all concentrations remain well below initial concentrations observed in October 2008 (26,000 µg/m^3 TCE, 48 J µg/m^3 PCE, 27,000 µg/m^3 1,1,1-TCA, and 130 µg/m^3 cis-1,2-DCE).

- SVPM-2006I: Concentrations of TCE, PCE, and cis-1,2-DCE observed in September 2016 (57 µg/m^3 TCE, 5.1 µg/m^3 PCE, and 260 µg/m^3 cis-1,2-DCE) were similar to or slightly greater than concentrations observed in January 2016 (48 µg/m^3 TCE, 2.2 J µg/m^3 PCE, and 260 µg/m^3 cis-1,2-DCE). This September 2016 sampling event confirms the recent increasing trend observed in January 2016, as 2016 concentrations are greater than those observed in January 2015 (non-detectable levels of TCE, PCE, and cis-1,2-DCE). Concentrations of these three compounds in 2016 are above concentrations observed in January 2014 and are nearing or above concentrations observed in January 2013. Concentrations of 1,1,1-TCA were at non-detectable levels in 2013 - 2016. Though concentrations of TCE and PCE have recently increased, concentrations in 2016 still remain below initial concentrations observed in October 2008 for TCE and PCE, as well as 1,1,1-TCA (71 µg/m^3 TCE, 29 µg/m^3 PCE, and 22 µg/m^3 1,1,1-TCA). However, the concentrations of cis-1,2-DCE observed in 2016 are above the initial concentration observed in October 2008 (45 µg/m^3 cis-1,2-DCE), though below the maximum concentration observed in January 2013 (340 µg/m^3 cis-1,2-DCE).

- SVPM-2006D: Concentrations of TCE, PCE, and cis-1,2-DCE observed in September 2016 (61 J / 84 J µg/m^3 TCE [routine / duplicate sample], 3.9 J / 5.3 J µg/m^3 PCE [routine / duplicate sample], and 320 / 390 µg/m^3 cis-1,2-DCE [routine / duplicate sample]) were greater than concentrations observed in January 2016 (47 µg/m^3 TCE, 1.9 J µg/m^3 PCE, and 320 µg/m^3 cis-1,2-DCE). This September 2016 sampling event confirms the recent increasing trend observed in

January 2016, as 2016 concentrations are greater than those observed in January 2015 (30 µg/m^3 TCE, 1.7 J µg/m^3 PCE, and 180 µg/m^3 cis-1,2-DCE). Concentrations of these three compounds in 2016 are also above concentrations observed in January 2013 and January 2014. Concentrations of 1,1,1-TCA were at non-detectable levels in 2013 - 2016. Though concentrations of TCE and PCE have recently increased, concentrations in 2016 still remain similar to or below initial concentrations observed in October 2008 for TCE and PCE, as well as 1,1,1-TCA (61 µg/m^3 TCE, 11 µg/m^3 PCE, and 35 µg/m^3 1,1,1-TCA). However, the concentrations of cis-1,2-DCE observed in 2016 are above the initial concentration observed in October 2008 (89 µg/m^3 cis-1,2-DCE) and are the highest concentrations observed at this location to date.

As shown on **Figure 3**, SVPM-2006I and SVPM-2006D are intermediate and deep wells, respectively, located along 10th Street, between Sycamore Avenue and Maple Avenue, to the east of the site. As mentioned above, recent data indicates increasing contaminant concentration trends at these locations, especially for cis-1,2-DCE, though all concentrations remain below the respective PALs. The ratio of cis-1,2-DCE to other contaminants (e.g. TCE) at these SVPMs is considerably greater than at other locations to the north, south, or west of these SVPMs, suggesting a possible off-site source to the east of 10th Street. Concentrations observed in September 2016 are similar to those observed in January 2016 and confirm this recent trend. Concentrations at these locations will continue to be evaluated to determine if these recent trends continue, with the next annual SVPM sampling event to occur in January 2017.

4.0 CONCLUSIONS AND RECOMMENDATIONS

As stated previously, the intent of the Site 1 SVECS is to prevent further off-site migration of VOC contaminated soil vapor and to the extent practical, capture soil vapor with elevated TCE concentrations. Based on the presence of a vacuum field and the reduction of VOC concentrations to less than the screening values in the off-property area, the SVECS is functioning as designed. Influent vapor analytical data with concentrations of TCE greater than 250 µg/L indicate that the SVECS should continue to be operated on a full-time basis to achieve continued capture of contaminated soil vapor. Monthly monitoring of the combined influent and effluent as well as quarterly monitoring of individual SVEWs should continue. Quarterly and annual monitoring of the SVPMs should also continue in order to ensure that a measurable vacuum field is being established and that the area is being effectively treated, with the next scheduled annual sampling event occurring in January 2017. In addition, further investigation may be warranted to further evaluate recent increasing concentration trends in SVPM-2006I and SVPM-2006D and to determine if another source of VOCs in soil vapor is present.

5.0 REFERENCES

Tetra Tech EC, Inc. (TtEC). 2010. *Final Operation & Maintenance Plan for Soil Vapor Extraction Containment System, Site 1, Former Drum Marshalling Yard at Naval Weapons Industrial Reserve Plant, Bethpage, New York.* June.

Tetra Tech NUS, Inc. (TtNUS). 2011. *Modification to Existing Soil Vapor Extraction Containment System at Site 1 – Former Drum Marshalling Area, Installation of Soil Vapor Extraction Wells SVE-107D to -111D, NWIRP Bethpage, Bethpage, New York.* September.

TtNUS. 2012. *Final Supplemental Offsite Soil Vapor Intrusion Monitoring Plan for the Soil Vapor Extraction Containment System, Site 1, Former Drum Marshalling Yard at Naval Weapons Industrial Reserve Plant, Bethpage, New York.* February.

TABLES

Table 1
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Vapor Monitoring Results
July 2016

Compound	Concentration (ug/m^3)				Emission Rate [1],[2]				Monthly Mass Recovery [3]
					Prior to Treatment		Following Treatment		
	Influent #1	Influent #2	Average	Effluent	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)	(lbs)
1,1,1-Trichloroethane	270	270	270	0	0.0003	2.6664	0.0000	0.0000	0.2265
1,1-Dichloroethane	15	14	15	0	0.0000	0.1432	0.0000	0.0000	0.0122
1,1-Dichloroethene	2.5 J	2.3 J	2.4 J	0	0.0000	0.0237	0.0000	0.0000	0.0020
1,2-Dichloroethane	0	0.98 J	0.49 J	0	0.0000	0.0048	0.0000	0.0000	0.0004
cis-1,2-Dichloroethene	270	270	270	0	0.0003	2.6664	0.0000	0.0000	0.2265
Tetrachloroethene	1000	1000	1000	0	0.0011	9.8754	0.0000	0.0000	0.8387
trans-1,2-Dichloroethene	3.6	3.7	3.7	0	0.0000	0.0360	0.0000	0.0000	0.0031
Trichloroethene	1000	1000	1000	0	0.0011	9.8754	0.0000	0.0000	0.8387
Vinyl Chloride	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Total VOCs	2561	2561	2561	0	0.0029	25.2913	0.0000	0.0000	2.1480

Notes:

All samples were analyzed for site-specific VOCs by modified method TO-15.

Average Monthly Vapor Temp (ºF) =	121
Average Monthly Flowrate (cfm) =	332
Average Monthly Flowrate (scfm) =	301
Operational Hours for the month =	744

(1) Emissions (lbs/hr) = Concentration (ug/m^3)*(lb/454000000ug)*(0.3048^3m^3/ft^3)*exhaust flow (scfm)*(60min/hour)

(2) Emissions (lbs/yr) = Emissions (lbs/hour)*(8760hours/yr)

(3) Monthly Mass Removal = AVERAGE FLOWRATE (scfm) * 0.3048^3m^3/ft^3 * INF AVG CONC (ug/m^3) * (lb/454000000ug) * 60 min/hr * OPERATIONAL TIME (hr)

Table 2
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Vapor Monitoring Results
August 2016

Compound	Concentration (ug/m^3)				Emission Rate [1],[2]				Monthly Mass Recovery [3]
					Prior to Treatment		Following Treatment		
	Influent #1	Influent #2	Average	Effluent	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)	(lbs)
1,1,1-Trichloroethane	240	220	230	0	0.0003	2.2761	0.0000	0.0000	0.1933
1,1-Dichloroethane	12	11	12	0	0.0000	0.1138	0.0000	0.0000	0.0097
1,1-Dichloroethene	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
1,2-Dichloroethane	0.71 J	0	0.36 J	0	0.0000	0.0035	0.0000	0.0000	0.0003
cis-1,2-Dichloroethene	240	230	235	0	0.0003	2.3256	0.0000	0.0000	0.1975
Tetrachloroethene	930	880	905	0	0.0010	8.9559	0.0000	0.0000	0.7606
trans-1,2-Dichloroethene	2.9 J	3.3	3.1 J	0	0.0000	0.0307	0.0000	0.0000	0.0026
Trichloroethene	890	840	865	0	0.0010	8.5601	0.0000	0.0000	0.7270
Vinyl Chloride	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Total VOCs	2316	2184	2250	0	0.0025	22.2657	0.0000	0.0000	1.8911

Notes:

All samples were analyzed for site-specific VOCs by modified method TO-15.

Average Monthly Vapor Temp (ºF) =	127
Average Monthly Flowrate (cfm) =	336
Average Monthly Flowrate (scfm) =	302
Operational Hours for the month =	744

(1) Emissions (lbs/hr) = Concentration (ug/m^3)*(lb/454000000ug)*(0.3048^3m^3/ft^3)*exhaust flow (scfm)*(60min/hour)

(2) Emissions (lbs/yr) = Emissions (lbs/hour)*(8760hours/yr)

(3) Monthly Mass Removal = AVERAGE FLOWRATE (scfm) * 0.3048^3m^3/ft^3 * INF AVG CONC (ug/m^3) * (lb/454000000ug) * 60 min/hr * OPERATIONAL TIME (hr)

Table 3
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Vapor Monitoring Results
September 2016

Compound	Concentration (ug/m^3)				Emission Rate [1],[2]				Monthly Mass Recovery [3]
					Prior to Treatment		Following Treatment		
	Influent #1	Influent #2	Average	Effluent	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)	(lbs)
1,1,1-Trichloroethane	340	400	370	0	0.0004	3.7837	0.0000	0.0000	0.3110
1,1-Dichloroethane	14	17	16	0	0.0000	0.1585	0.0000	0.0000	0.0130
1,1-Dichloroethene	1.6 J	2.3 J	2.0 J	0	0.0000	0.0199	0.0000	0.0000	0.0016
1,2-Dichloroethane	1.0 J	1.2 J	1.1 J	0	0.0000	0.0112	0.0000	0.0000	0.0009
cis-1,2-Dichloroethene	160	200	180	1.0 J	0.0002	1.8407	0.0000	0.0102	0.1513
Tetrachloroethene	1000	1200	1100	0	0.0013	11.2488	0.0000	0.0000	0.9246
trans-1,2-Dichloroethene	2.9 J	3.2 J	3.1 J	0	0.0000	0.0312	0.0000	0.0000	0.0026
Trichloroethene	1400	1700	1550	0	0.0018	15.8506	0.0000	0.0000	1.3028
Vinyl Chloride	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Total VOCs	2920	3524	3222	1.0 J	0.0038	32.9446	0.0000	0.0102	2.7078

Notes:

All samples were analyzed for site-specific VOCs by modified method TO-15.

Average Monthly Vapor Temp (ºF) =	121
Average Monthly Flowrate (cfm) =	343
Average Monthly Flowrate (scfm) =	312
Operational Hours for the month =	720

(1) Emissions (lbs/hr) = Concentration (ug/m^3)*(lb/454000000ug)*(0.3048^3m^3/ft^3)*exhaust flow (scfm)*(60min/hour)

(2) Emissions (lbs/yr) = Emissions (lbs/hour)*(8760hours/yr)

(3) Monthly Mass Removal = AVERAGE FLOWRATE (scfm) * 0.3048^3m^3/ft^3 * INF AVG CONC (ug/m^3) * (lb/454000000ug) * 60 min/hr * OPERATIONAL TIME (hr)

Table 4
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Third Quarter 2016 Vapor Analytical Results Summary of SVE Wells

Sample ID	SVE 101I	SVE 101D	SVE 102I	SVE 102D	SVE 103I	SVE 103D	SVE 104I	SVE 104D	SVE 105I	SVE 105D	SVE 106I	SVE 106D
Sample Date	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)												
1,1,1-Trichloroethane	ND	ND	1.3 J	6.6	6.0	ND	6.9	460	16	47	12	30
1,1-Dichloroethane	ND	ND	ND	0.93 J	1.9 J	ND	ND	73	2.8	22	ND	6.8
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	13	5.2	ND	2.1 J	2400	7.9	31	3.8	14
Tetrachloroethene	ND	ND	2.9 J	51	200	ND	80	9400	64	150	20	57
trans-1,2-Dichloroethene	ND	ND	ND	ND	1.3 J	ND	ND	38	0.83 J	1.8 J	ND	0.63 J
Trichloroethene	ND	ND	21	150	67	ND	83	1400	250	360	190	450
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

All samples were analyzed for site-specific VOCs by modified method TO-15.

µg/m^3 = micrograms per cubic meter

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 101I																											
Sample Date	12/21/09	03/31/10	06/09/10	09/16/10	12/08/10	03/30/11	06/28/11	09/06/11	10/14/11	02/10/12	05/11/12	09/11/12	12/05/12	01/15/13	05/16/13	08/27/13	11/08/13	01/30/14	04/10/14	07/29/14	10/02/14	01/12/15	05/07/15	08/12/15	10/29/15	01/13/16	04/21/16	09/13/16
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	51000	3900	2600	450	850	300	1	0.7 J	0.7 J	1500	1500	3200	4400	3400	1900	2200	2900	2600	1200	1600	2500	2000	720	520	2200	2700	3000	ND
1,1-Dichloroethane	1200	65	34	14	31	5	0.8 J	0.4 J	0.4 J	28	28	61	76	62	35	36	57	50	22	29	51	39	15	10	42	45	38	ND
1,1-Dichloroethene	250	ND	ND	4	8	ND	0.7 J	0.4 J	0.5 J	7.6 J	10	ND	15 J	ND	12 J	8.9 J	16 J	11 J	7.9 J	6.2 J	21	11 J	ND	ND	ND	ND	6.9 J	ND
1,2-Dichloroethane	NR	30	ND	4	8	ND	0.9	0.5 J	0.5 J	6.9 J	6.4 J	11 J	14 J	12 J	10 J	8.6 J	9.2 J	7.5 J	4.4 J	9.2 J	12 J	9.8 J	5.2 J	3.8	15	9.0 J	ND	ND
cis-1,2-Dichloroethene	480	59	ND	9	15	3	0.7 J	ND	0.4 J	7.1 J	7.4 J	20 J	22 J	14 J	6.2 J	11 J	22 J	12 J	4.2 J	8.8 J	24	9.4 J	4.6 J	3.8	9.2 J	6.0 J	ND	ND
Tetrachloroethene	1700	410	260	36	63	10	1	ND	2	48	46	93	120	80	49	79	100	80	34	67	83	54	31	31	74	83	82	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	0.7 J	0.4 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	180000	18000	14000	1200	2400	560	1	0.6 J	0.6 J	4200	4300	7200	12000	8100	5200	5400	8900	7100	3300	4400	6900	5300	2500	1600	7600	8200	7100	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.5 J	0.3 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 101D																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/22/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	26000	130	53	ND	ND	ND	3	8	0.8 J	ND	3.1 J	9.9	11	ND	ND	5.6	16	14	12	20	19	12	ND	22	22	27	22	ND
1,1-Dichloroethane	660	3.9	ND	ND	ND	ND	2	0.9 J	0.5 J	ND	ND	1.0 J	1.1 J	1.1 J	ND	ND	1.5 J	1.4 J	1.2 J	0.89 J	1.4 J	ND	ND	2.5 J	2.8 J	2.3 J	1.7 J	ND
1,1-Dichloroethene	180	2	ND	ND	ND	ND	ND	0.7 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	1.0 J	0.75 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	0.5	ND	ND	ND	ND	2	0.5 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	220	8.5	7.5	ND	3	ND	2	2	0.5 J	ND	ND	2.1 J	3.2	ND	ND	ND	3.0 J	4.5	3.5	1.5 J	4.1	2.3 J	ND	3.3	5.9	5.8	6.4	ND
Tetrachloroethene	3200	1200	1200	ND	4	ND	26	210	2	ND	79	150	170	130	0.92 J	73	330	340	270	240	260	200	1.0 J	230	250	310	220	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	2	0.6 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	100000	1600	310	3	1	ND	3	120	1 J	ND	200	400	350	120	ND	56	540	680	330	180	410	190	1.7 J	450	1000	2200	990	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	1	0.4 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 102I																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/22/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**02/05/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	ND	ND	13	3	ND	NA	2	3	2	ND	0.60 J	3.3 J	ND	ND	ND	1.6 J	ND	ND	0.95 J	10	4.0 J	0.82 J	1.6 J	12	2.8 J	0.87 J	ND	1.3 J
1,1-Dichloroethane	ND	ND	ND	ND	ND	NA	0.8 J	0.5 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	0.7 J	0.4 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	NA	0.8	0.4 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	0.7 J	0.5 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	2.4	1.4	17	6	NR	NA	3	6	6	ND	1.6 J	6.4	1.5 J	2.4 J	1.4 J	3.3 J	2.6 J	ND	ND	10	4.8 J	1.5 J	2.5 J	13	6.6	2.4 J	ND	2.9 J
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	NA	0.7 J	0.4 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5.6	3.8	300	88	3	NA	34	76	52	10	26	99	10	10	15	49	21	7.6	8.0	84	39	8.0	22	120	40	12	ND	21
Vinyl Chloride	ND	ND	ND	ND	ND	NA	0.5 J	0.4 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 102D																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/08/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/24/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	130	53	14	7	2	2	6	4	5	1.4 J	1.2 J	3.9 J	ND	ND	ND	2.3 J	3.1 J	ND	1.6 J	4.5	5.1	2.6 J	ND	5.2	4.9	3.5 J	1.1 J	6.6
1,1-Dichloroethane	ND	2.7	ND	ND	ND	ND	1	0.6 J	0.7 J	ND	ND	0.51 J	0.95 J	ND	ND	ND	0.69 J	ND	0.44 J	ND	ND	ND	ND	ND	1.0 J	0.81 J	ND	0.93 J
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	1	0.6 J	0.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	ND	0.9	0.5 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.38 J	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	1.4	ND	ND	0.9	ND	1	0.5 J	0.9	ND	ND	1.1 J	4.1	ND	ND	ND	3.4	ND	2.8 J	0.89 J	3.6	1.6 J	ND	4.2	9.3	8.9	4.4	13
Tetrachloroethene	10	31	31	19	3	9	25	23	39	5.9	6.5	24	25	0.96 J	1.4 J	14	28	2.6 J	9.6	16	20	11	3.8 J	22	41	42	18	51
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	1	0.5 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	440	390	190	110	17	21	89	81	87	34	58	170	140	6.5	ND	88	160	3.9 J	39	79	92	36	20	160	180	120	38	150
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.6	0.4 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 103I																										
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/08/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																											
1,1,1-Trichloroethane	900	ND	ND	ND	ND	ND	0.9 J	6	6	ND	1.6 J	9.2	ND	ND	1.4 J	4.7 J	2.8 J	0.92 J	ND	4.6	4.9	ND	1.3 J	6.6	3.6 J	1.2 J	0.76 J	6.0
1,1-Dichloroethane	26	ND	ND	ND	ND	ND	0.6 J	2	2	ND	0.75 J	1.5 J	0.77 J	ND	ND	1.5 J	1.3 J	ND	ND	0.89 J	2.0 J	ND	0.68 J	ND	1.4 J	ND	ND	1.9 J
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	0.6 J	0.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	ND	0.7 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	58	ND	ND	1	ND	1	0.5 J	16	12	18	16	19	6.0	2.4 J	5.0	11	15	6.9	3.4	4.2	6.1	ND	11	9.3	7.3	13	2.7 J	5.2
Tetrachloroethene	580	ND	ND	ND	ND	2	1 J	420	590	140	200	430	120	40	78	220	200	97	40	150	130	8.6	130	290	210	450	71	200
trans-1,2-Dichloroethene	580	ND	ND	ND	ND	ND	0.6 J	1	1	ND	ND	ND	ND	ND	ND	ND	0.85 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3 J
Trichloroethene	900	0.9	ND	ND	ND	ND	0.9 J	100	97	29	47	130	48	16	35	95	78	46	20	47	50	4.9 J	37	92	74	70	17	67
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.4 J	0.4 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 103D																										
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/08/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																											
1,1,1-Trichloroethane	3000	1100	230	ND	13	ND	2 J	20	31	7.4 J	6.9 J	22	190	ND	150	170	200	550	400	25	38	ND	310	26	30 J	ND	38	ND
1,1-Dichloroethane	82	69	ND	ND	2	2	1 J	4	9	1.6 J	1.5 J	1.9 J	10 J	ND	10	10 J	20 J	50	48	ND	7.8 J	ND	24	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	1 J	2	6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	ND	1 J	1 J	6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	420	1500	370	ND	92	ND	1 J	360	160	290	230	300	750	ND	550	700	2600	2100	1800	280	490	ND	930	310	530	ND	310	ND
Tetrachloroethene	20000	28000	16000	9	1500	ND	3	1600	6700	3800	3200	4700	4600	1.6 J	3300	4900	17000	15000	8600	6600	8900	ND	5800	8900	17000	ND	7500	ND
trans-1,2-Dichloroethene	ND	24	ND	ND	1	ND	1 J	3	7 J	ND	ND	ND	8.8 J	ND	5.7 J	8.8 J	18 J	32	18	ND	ND	ND	17	ND	ND	ND	ND	ND
Trichloroethene	3100	1600	640	7	92	ND	2 J	290	240	180	200	480	440	6.0	360	660	2100	1400	900	530	680	ND	580	640	1200	ND	300	ND
Vinyl Chloride	ND	5.9	ND	ND	2	ND	0.8 J	4	5 J	ND	ND	ND	ND	ND	1.9 J	ND	14 J	ND	2.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 104I																											
Sample Date	12/21/09	03/31/10	06/09/10	09/16/10	12/08/10	03/30/11	06/28/11	09/06/11	10/14/11	02/10/12	05/11/12	09/11/12	12/05/12	01/15/13	05/16/13	08/27/13	11/08/13	01/30/14	04/24/14	07/29/14	10/02/14	01/12/15	05/07/15	08/12/15	10/29/15	01/13/16	04/21/16	09/13/16
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	730	4.2	ND	4	NR	NA	1 J	4	2	ND	ND	8.3	ND	ND	ND	3.1 J	2.6 J	ND	9.6	17	15	7.0	1.5 J	8.3	4.0 J	4.6	0.48 J	6.9
1,1-Dichloroethane	24	0.54	ND	ND	ND	NA	1 J	0.6 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.4	8.7	7.7	6.6	ND	ND	ND	2.9 J	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	NA	1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	110	14	ND	2	0.8	NA	0.9 J	2	3	0.90 J	ND	5.0	ND	2.7 J	ND	3.3	5.3	ND	94	160	160	130	7.3	4.2	6.6	54	0.92 J	2.1 J
Tetrachloroethene	3100	210	68	96	16	NA	2 J	54	33	12	ND	86	1.6 J	4.8 J	2.3 J	30	36	ND	69	210	190	91	13	82	66	79	10	80
trans-1,2-Dichloroethene	15	ND	ND	ND	ND	NA	1 J	0.5 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8 J	2.1 J	1.4 J	ND	ND	ND	ND	ND	ND
Trichloroethene	710	44	60	72	12	NA	2 J	44	25	9.6	ND	73	ND	3.1 J	ND	30	31	ND	39	110	120	43	17	85	54	35	7.6	83
Vinyl Chloride	ND	0.47	ND	ND	ND	NA	0.7 J	0.3 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 104D																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/22/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	3600	3000	860	ND	270	ND	370	620	440	520	580	620	920	820	0.89 J	500	600	340	84	930	880	1.7 J	350	480	790	760	460	460
1,1-Dichloroethane	290	350	140	ND	66	ND	56	110	77	87	95	100	190	160	ND	95	130	56	22	120	130	ND	72	77	120	91	54	73
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	3	7 J	7 J	3.0 J	5.0 J	ND	11 J	ND	ND	ND	ND	4.3 J	1.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	ND	1 J	5 J	5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	2400	6600	3500	ND	1200	ND	1000	3600	2100	2200	2800 J	2200	4200	3700	8.6	2000	3200	1600	460	3300	4400	21	1500	2500	3600	3200	1900	2400
Tetrachloroethene	20000	39000	21000	ND	2400	ND	1400	5800	6300	3800	4300	4600	4500	4200	69	2600	3900	2500	780	8200	8000	120	2200	5100	10000	7700	4500	9400
trans-1,2-Dichloroethene	130	70	30	ND	13	ND	14	25	22	26	31	27	55	40	ND	24	40	15	3.5	34	53	ND	18	39	49	38	30	38
Trichloroethene	4600	6000	2400	ND	470	ND	420	1600	1300	1400	1400	1700	2300	2100	14	1200	1600	1100	430	2000	2100	19	1100	1200	2200	1600	750	1400
Vinyl Chloride	ND	12	ND	ND	ND	ND	2	5	5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method
detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 105I																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/08/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	9.9	11	29	ND	24	1	1 J	21	31	11	13	26	22	22	11	24	18	32	26	17	20	20	25	29	30	12	5.0	16
1,1-Dichloroethane	ND	5.7	13	ND	6	ND	0.6 J	5	7	4.2	5.6	5.6	10	12	8.8	8.0	7.4	24	6.8	7.0	8.2	8.6	22	15	28	17	1.5 J	2.8
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	0.6 J	0.6 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	ND	0.7 J	0.6 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	6.6	20	ND	ND	ND	1	10	16	8.1	9.7	13	16	13	14	14	7.4	17	6.2	9.5	12	7.5	31	28	23	17	1.8 J	7.9
Tetrachloroethene	70	9.1	240	ND	55	5	2	95	100	31	43	100	77	66	38	91	57	77	48	73	85	51	43	87	66	44	27	64
trans-1,2-Dichloroethene	ND	ND	1.6	ND	ND	ND	0.5 J	1	1	ND	ND	1.5 J	ND	ND	ND	ND	1.0 J	1.6 J	ND	ND	2.8 J	ND	ND	ND	2.3 J	ND	ND	0.83 J
Trichloroethene	76	6.3	370	ND	120	7	1	170	200	110	140	260	180	160	94	220	140	180	190	140	200	130	160	290	240	84	39	250
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.4 J	0.4 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 105D																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/08/10**	**03/30/11**	**06/28/11**	**09/06/11**	**12/02/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	550	47	320	1000	590	ND	1 J	490	930	350	320	270	380	430	160	110	120	190	ND	92	79	4.3 J	16	35	52	62	68	47
1,1-Dichloroethane	300	28	270	250	ND	ND	0.6 J	74	150	69	78	72	110	110	46	45	70	46	ND	36	28	ND	4.7	12	30	21	15	22
1,1-Dichloroethene	3.9	ND	ND	2	4	4	0.6 J	6 J	ND	ND	ND	ND	ND	ND	ND	ND	1.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	ND	4	5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	61	36	85	300	ND	ND	0.7 J	150	380	190	220	150	210	200	73	76	85	46	ND	50	36	ND	3.6	16	22	18	26	31
Tetrachloroethene	2100	1.1	650	270	420	ND	2	240	330	140	220	270	350	330	100	140	260	300	ND	140	120	2.1 J	18	76	130	140	130	150
trans-1,2-Dichloroethene	19	1.1	3.1	3	ND	ND	0.6 J	7 J	3 J	ND	ND	ND	ND	ND	1.4 J	2.4 J	3.6	1.3 J	ND	1.3 J	1.9 J	ND	ND	ND	ND	ND	ND	1.8 J
Trichloroethene	1700	68	200	1100	1400	1	2	3000	7000	3600	4500	2200	3800	3800	1400	900	1200	1900	8.5	650	520	15	75	250	400	410	350	360
Vinyl Chloride	ND	ND	ND	ND	ND	ND	0.4 J	4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method
detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 106I																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/08/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	220	8.6	ND	4	ND	NA	6	3	7	1.0 J	2.2 J	11	ND	ND	ND	ND	18	1.4 J	3.8 J	8.9	2.2 J	ND	8.0	29	30	2.8 J	1.5 J	12
1,1-Dichloroethane	120	ND	ND	1	ND	NA	1	0.5 J	1	0.62 J	0.70 J	1.6 J	2.5 J	1.9 J	ND	ND	3.8	ND	17	3.9	1.1 J	ND	18	2.6 J	3.4	1.2 J	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	NA	0.6 J	2	0.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	0.8	ND	NA	0.6 J	0.5 J	0.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3 J	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	46	ND	ND	4	ND	NA	6	0.5 J	4	1.6 J	2.3 J	7.5	5.4	3.7	ND	ND	8.3	ND	23	11	3.1 J	ND	23	6.6	4.9	3.2	0.84 J	3.8
Tetrachloroethene	390	35	ND	15	ND	NA	15	7	19	4.3 J	7.2	27	14	7.0	0.73 J	ND	19	4.2 J	6.2	11	2.9 J	ND	14	39	49	11	5.1 J	20
trans-1,2-Dichloroethene	7.9	ND	3.1	0.9	ND	NA	0.8	0.5 J	0.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1900	41	ND	140	10	NA	210	92	190	69	110	260	180	110	5.5	ND	210	28	70	110	16	0.87 J	130	560	660	200	40	190
Vinyl Chloride	ND	ND	ND	0.5	ND	NA	0.4 J	0.3 J	0.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method detection limit

Table 5
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Quarterly Vapor Monitoring Results of SVE Wells
Through Third Quarter 2016

Sample ID	SVE 106D																											
Sample Date	**12/21/09**	**03/31/10**	**06/09/10**	**09/16/10**	**12/08/10**	**03/30/11**	**06/28/11**	**09/06/11**	**10/14/11**	**02/10/12**	**05/11/12**	**09/11/12**	**12/05/12**	**01/15/13**	**05/16/13**	**08/27/13**	**11/08/13**	**01/30/14**	**04/10/14**	**07/29/14**	**10/02/14**	**01/12/15**	**05/07/15**	**08/12/15**	**10/29/15**	**01/13/16**	**04/21/16**	**09/13/16**
Analysis by TO-15 (µg/m^3)																												
1,1,1-Trichloroethane	340	32	30	20	12	9	20	23	29	ND	11	26	18	ND	ND	27	25	5.8	6.3	14	28	ND	26	ND	ND	11	7.2	30
1,1-Dichloroethane	250	6.3	ND	5	2	5	4	3	3	ND	3.0	4.3	5.8	ND	ND	4.9	11	3.7	3.3	5.1	8.9	ND	2.6 J	ND	ND	2.7 J	13	6.8
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	0.5 J	0.7 J	0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	NR	ND	ND	ND	ND	ND	ND	0.6 J	0.7 J	ND	ND	ND	ND	ND	ND	ND	2.5 J	ND	ND	ND	1.1 J	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	79	13	11	13	2	11	11	5	4	ND	4.1	7.1	8.2	ND	ND	10	15	2.8 J	3.9	8.4	15	ND	36	ND	ND	3.2	24	14
Tetrachloroethene	720	65	70	ND	13	19	41	8	66	ND	28	62	48	ND	1.3 J	50	58	16	17	22	60	ND	110	ND	1.4 J	33	27	57
trans-1,2-Dichloroethene	15	ND	ND	ND	ND	ND	0.6 J	0.8	0.9	ND	ND	ND	ND	ND	ND	ND	1.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.63 J
Trichloroethene	3400	600	900	230	130	170	210	260	320	ND	180	380	300	ND	ND	460	440	160	84	170	370	0.56 J	71	1.6 J	ND	280	170	450
Vinyl Chloride	ND	1.6	ND	ND	ND	ND	ND	0.4 J	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

µg/m^3= micrograms per cubic meter

NR = Not Recorded

NA = Data not available

ND = Not detected above method
detection limit

Table 6
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Third Quarter 2016 Off-site Soil Vapor Monitoring of SVPMs

SVPM/ SVEW Location	Vacuum Reading (i.w.) Pre- Vapor Sample Collection	Vacuum Reading (i.w.) Post- Vapor Sample Collection	Valve Position (% open)
Monitoring Date:	***9/12/16***	***9/13/16***	***9/12/16***
BPS1-SVPM2001S	0.04	0.04	--
BPS1-SVPM2001I	0.06	0.08	--
BPS1-SVPM2001D	0.00	0.00	--
BPS1-SVPM2002S	0.06	0.06	--
BPS1-SVPM2002I	0.10	0.10	--
BPS1-SVPM2002D	0.12	0.14	--
BPS1-SVPM2003S	0.04	0.02	--
BPS1-SVPM2003I	0.04	0.04	--
BPS1-SVPM2003D	0.04	0.06	--
BPS1-SVPM2004S	0.02	0.02	--
BPS1-SVPM2004I	0.04	0.04	--
BPS1-SVPM2004D	0.06	0.04	--
BPS1-SVPM2006S	0.01	0.01	--
BPS1-SVPM2006I	0.01	0.01	--
BPS1-SVPM2006D	0.01	0.01	--
BPS1-SVPM2007S	0.02	0.02	--
BPS1-SVPM2007I	0.01	0.02	--
BPS1-SVPM2007D	0.00	0.02	--
SV-101I	2.4	2.4	40
SV-101D	10.5	10.5	40
SV-102I	4.6	4.6	40
SV-102D	10.5	10.5	50
SV-103I	2.2	2.2	40
SV-103D	8.0	8.0	40
SV-104I	2.8	3.4	40
SV-104D	14.0	14.0	40
SV-105I	1.4	1.8	40
SV-105D	10.0	10.0	40
SV-106I	3.2	3.2	40
SV-106D	13.5	13.5	40

Notes:
i.w. = inches of water column
SVEW = soil vapor extraction well
SVPM = soil vapor pressure monitor
* Indicates a positive pressure reading was measured as opposed to a negative pressure (vacuum) reading.

Vacuum readings for the SVPMs were measured using a portable Magnehelic® Differential Pressure Gauge 2000-0, with a range of 0-0.50 i.w. Vacuum readings for SVEWs were recorded from dedicated in-line pressure gauges.

Table 7
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Historical Quarterly Off-site Soil Vapor Monitoring of SVPMs
Through Third Quarter 2016

	Third Quarter 2012	*Fourth Quarter 2012*	*First Quarter 2013*		*Second Quarter 2013*	*Third Quarter 2013*	*Fourth Quarter 2013*	*First Quarter 2014*		*Second Quarter 2014*	*Third Quarter 2014*		*Fourth Quarter 2014*	*First Quarter 2015*		*Second Quarter 2015*	*Third Quarter 2015*	*Fourth Quarter 2015*	*First Quarter 2016*		*Second Quarter 2016*	*Third Quarter 2016*	
SVPM/ SVEW Location	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.) Pre-Vapor Sample Collection**	**Vacuum Reading (i.w.) Post-Vapor Sample Collection**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.) Pre-Vapor Sample Collection**	**Vacuum Reading (i.w.) Post-Vapor Sample Collection**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.) Pre-Vapor Sample Collection**	**Vacuum Reading (i.w.) Post-Vapor Sample Collection**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.) Pre-Vapor Sample Collection**	**Vacuum Reading (i.w.) Post-Vapor Sample Collection**	**Vacuum Reading (i.w.)**	**Vacuum Reading (i.w.) Pre-Vapor Sample Collection**	**Vacuum Reading (i.w.) Post-Vapor Sample Collection**
Monitoring Date:	***10/10/2012***	***12/6/2012***	***1/15/13***	***1/16/13***	***5/29/13***	***8/27/13***	***11/8/13***	***1/29/14***	***1/30/14***	***4/10/14***	***7/29/14***	***8/1/14***	***10/2/14***	***1/13/15***	***1/14/15***	***5/6/15***	***8/12/15***	***10/29/15***	***1/13/16***	***1/14/16***	***4/21/16***	***9/12/16***	***9/13/16***
BPS1-SVPM2001S	0.01	0.02	0.01	0.01	0.02	0.08	0.06	0.01	0.02	*0.02	*0.02	*0.02	0.09	0.01	0.08	0.02	0.08	0.07	0.03	0.08	0.06	0.04	0.04
BPS1-SVPM2001I	0.01	0.02	0.02	0.01	0.10	0.12	0.10	0.04	0.04	0.12	*0.01	0.01	0.14	0.05	0.11	0.04	0.11	0.08	0.04	0.12	0.08	0.06	0.08
BPS1-SVPM2001D	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	*0.01	*0.01	*0.01	*0.01	0.10	*0.01	*0.01	0.03	0.01*	0.01*	0.04	0.02	0.02	0.00	0.00
BPS1-SVPM2002S	0.02	0.01	0.02	0.02	0.06	0.12	0.10	0.08	0.03	0.10	*0.01	0.01	0.09	*0.01	0.11	0.15	0.06	0.06	0.05	0.09	0.06	0.06	0.06
BPS1-SVPM2002I	0.11	0.10	0.01	0.02	0.10	0.18	0.16	0.06	0.08	0.18	0.14	0.14	0.18	0.21	0.13	0.13	0.10	0.12	0.04	0.04	0.10	0.10	0.10
BPS1-SVPM2002D	0.12	0.10	0.01	0.01	0.10	0.18	0.16	0.01	*0.01	*0.02	0.00	0.00	0.06	*0.01	0.14	0.13	0.14	0.13	0.13	0.18	0.06	0.12	0.14
BPS1-SVPM2003S	0.01	0.01	0.03	0.02	0.04	*0.02	0.02	0.06	*0.01	*0.01	0.02	0.04	*0.01	*0.01	0.02	0.03	*0.01	0.04	0.04	0.04	0.02	0.04	0.02
BPS1-SVPM2003I	0.04	0.02	0.03	0.04	0.10	0.04	0.04	0.02	0.02	0.04	0.02	0.04	*0.02	0.06	0.02	0.05	0.04	0.04	0.03	0.04	0.04	0.04	0.04
BPS1-SVPM2003D	0.04	0.02	0.01	0.04	0.05	0.04	0.04	0.02	*0.01	0.04	0.04	*0.01	0.03	*0.01	0.02	0.04	0.05	0.04	0.04	0.05	0.04	0.04	0.06
BPS1-SVPM2004S	0.04	0.04	0.03	0.02	0.03	0.04	0.02	0.04	0.00	0.04	*0.02	*0.01	*0.01	0.04	0.05	0.03	0.03	0.04	0.04	0.05	0.04	0.02	0.02
BPS1-SVPM2004I	0.04	0.04	0.02	0.01	0.04	0.04	0.02	0.02	*0.01	0.04	*0.01	0.02	*0.01	0.10	0.05	0.05	*0.01	0.06	0.05	0.09	0.01	0.04	0.04
BPS1-SVPM2004D	0.06	0.04	0.03	0.01	0.04	0.04	0.04	0.02	0.04	0.02	*0.01	0.02	0.08	0.04	0.06	0.02	0.05	0.05	0.04	0.12	0.04	0.06	0.04
BPS1-SVPM2006S	0.01	0.01	0.01	0.01	0.02	0.00	0.00	0.00	*0.01	0.02	0.02	0.01	*0.03	0.01	0.01	0.02	0.01	0.02	0.01	0.04	0.02	0.01	0.01
BPS1-SVPM2006I	0.01	0.01	0.01	0.01	0.01	*0.01	*0.01	0.00	*0.01	0.01	0.01	0.01	0.00	0.02	0.01	0.02	0.01	0.02	0.03	0.05	0.02	0.01	0.01
BPS1-SVPM2006D	0.02	0.02	0.01	0.01	0.02	*0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.02	0.02	0.04	0.04	0.01	0.01
BPS1-SVPM2007S	0.01	0.01	0.01	0.01	0.04	0.00	*0.01	0.01	0.02	0.00	0.02	0.02	0.00	*0.01	0.02	0.01	0.02	0.02	0.04	0.04	0.04	0.02	0.02
BPS1-SVPM2007I	0.01	0.01	0.01	0.01	0.04	*0.01	*0.02	0.02	0.01	*0.01	0.02	0.02	0.00	0.01	0.02	0.00	0.02	0.01	0.06	0.05	0.04	0.01	0.02
BPS1-SVPM2007D	0.01	0.01	0.01	0.01	0.02	*0.01	0.04	0.02	0.02	*0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.02	0.00	0.05	0.05	0.02	0.00	0.02
SV-101I	5	7	10	--	6.0	5.1	4.8	5.0	--	7.1	8.0	--	4.5	6.0	--	7.0	4.8	3.6	7.5	7.0	2.9	2.4	2.4
SV-101D	10	16	16	--	16.0	23.5	24.5	17.0	--	22.5	16.0	--	16.0	14.0	--	13.0	11.0	13.0	17.0	16.0	15.2	10.5	10.5
SV-102I	5	3	16	--	3.0	6.9	6.5	4.4	--	8.7	5.0	--	6.0	6.5	--	2.0	2.4	3.4	4.5	5.0	4.4	4.6	4.6
SV-102D	10	18	10	--	22.0	26.6	22.3	15.0	--	26.0	15.0	--	17.0	17.5	--	13.5	10.5	10.5	8.0	6.0	9.3	10.5	10.5
SV-103I	5	2	20	--	4.0	3.5	3.1	6.6	--	5.6	2.0	--	3.0	4.5	--	6.1	4.0	3.7	6.5	6.5	2.5	2.2	2.2
SV-103D	8	24	10	--	24.2	27.7	20.8	15.0	--	24.5	16.0	--	16.0	19.0	--	24.0	14.5	12.8	11.0	11.0	11.0	8.0	8.0
SV-104I	8	6	20	--	4.0	3.5	3.1	10.0+	--	10.0+	10.0	--	10.0	10.0+	--	4.0	3.0	4.6	9.0	9.5	3.4	2.8	3.4
SV-104D	11	10	10	--	10.0	9.0	8.0	10.0	--	11.5	6.0	--	6.0	10.5	--	16.0	14.0	8.9	10.0	10.3	12.0	14.0	14.0
SV-105I	5	9	16	--	7.5	4.3	3.6	5.0	--	8.2	3.0	--	2.5	7.0	--	7.5	4.5	3.8	3.0	2.5	4.1	1.4	1.8
SV-105D	8	7	8	--	8.0	5.0	4.0	15.5	--	30	6.0	--	3.0	23.5	--	28.5	11.5	12.0	5.5	5.5	13.0	10.0	10.0
SV-106I	5	8	16	--	8.0	4.0	3.6	10.0+	--	10.0+	6.0	--	7.5	10.0+	--	6.2	2.4	3.7	1.5	5.5	5.4	3.2	3.2
SV-106D	8	12	10	--	11.0	7.0	6.0	6.5	--	16.0	6.0	--	5.0	10.0	--	17.0	25.5	18.5	26.0	26.5	11.8	13.5	13.5

Notes:

i.w. = inches of water column

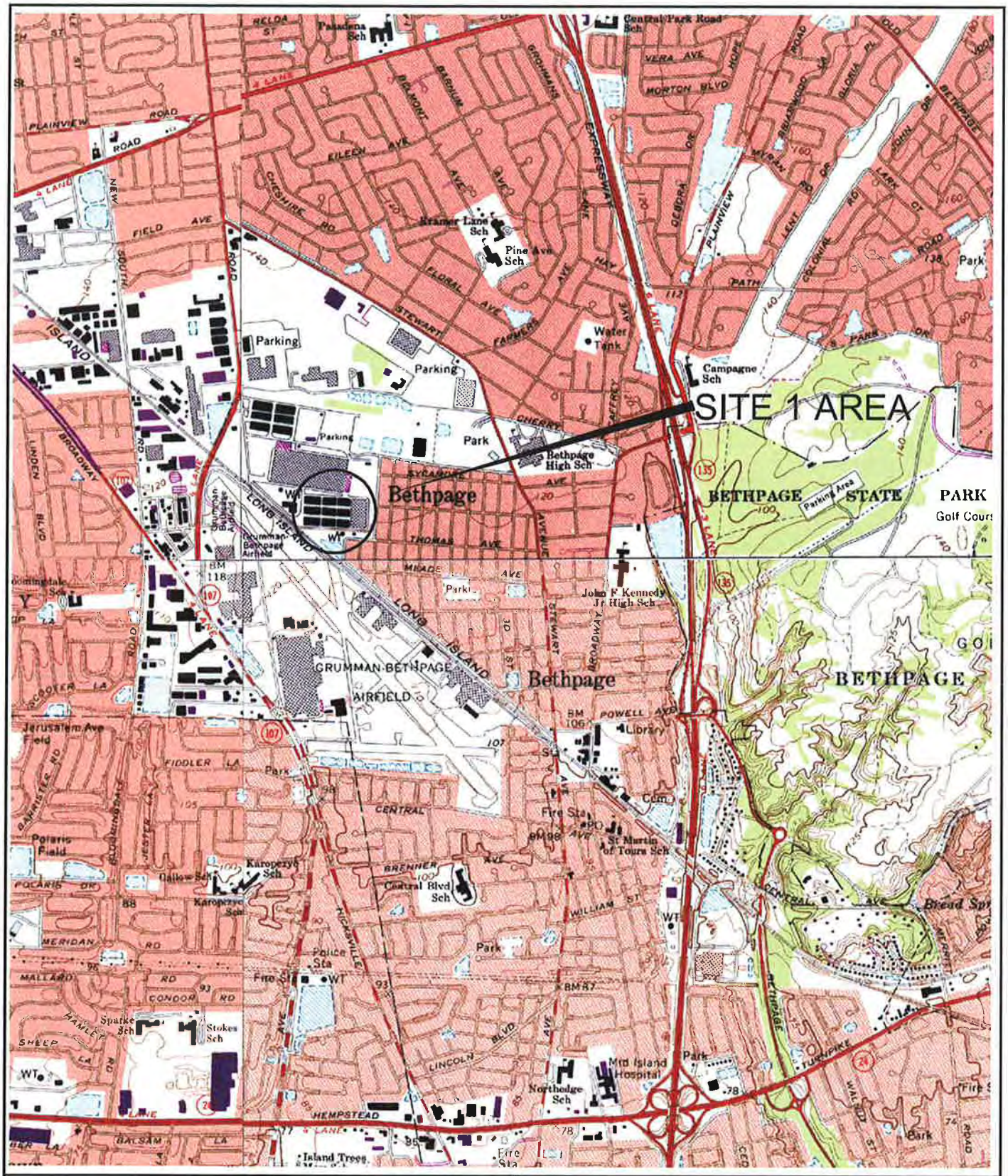
SVEW = soil vapor extraction well

SVPM = soil vapor pressure monitor

* Indicates a positive pressure reading was measured as opposed to a negative pressure (vacuum) reading.

Vacuum readings for the SVPMs were measured using a portable Magnehelic® Differential Pressure Gauge 2000-0, with a range of 0-0.50 i.w. Vacuum readings for SVEWs were recorded from dedicated in-line vacuum gauges.

FIGURES



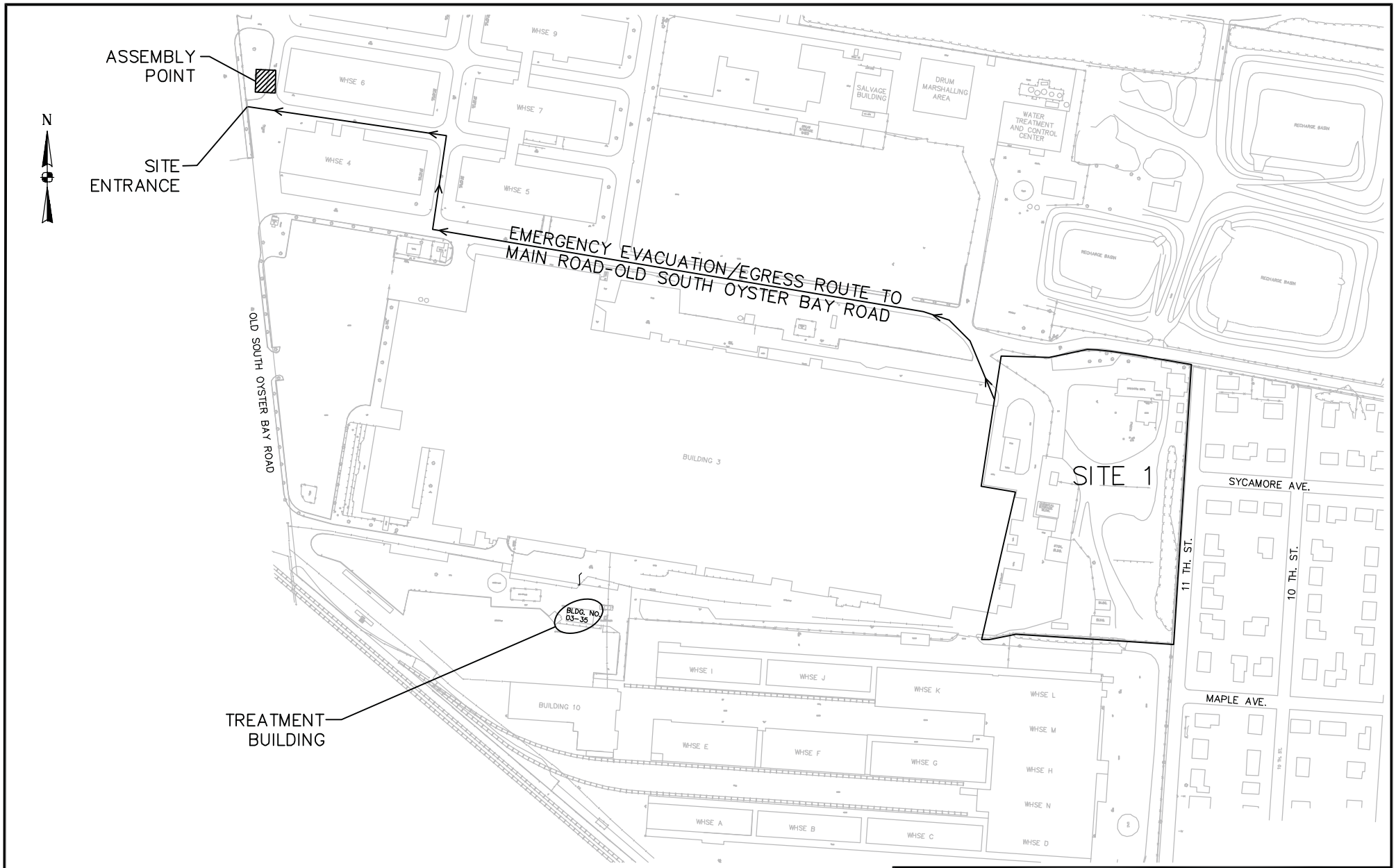
Source: U.S.G.S. Topographic Maps (7.5 Minute)
Amityville, Freeport, Hicksville, Huntington, NY Quadrangles

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic

Site 1, Former Drum Marshalling Area
Naval Weapons Industrial Reserve Plant
Bethpage, NY

Figure 1: Site Location Map

KOMAN Government Solutions, LLC

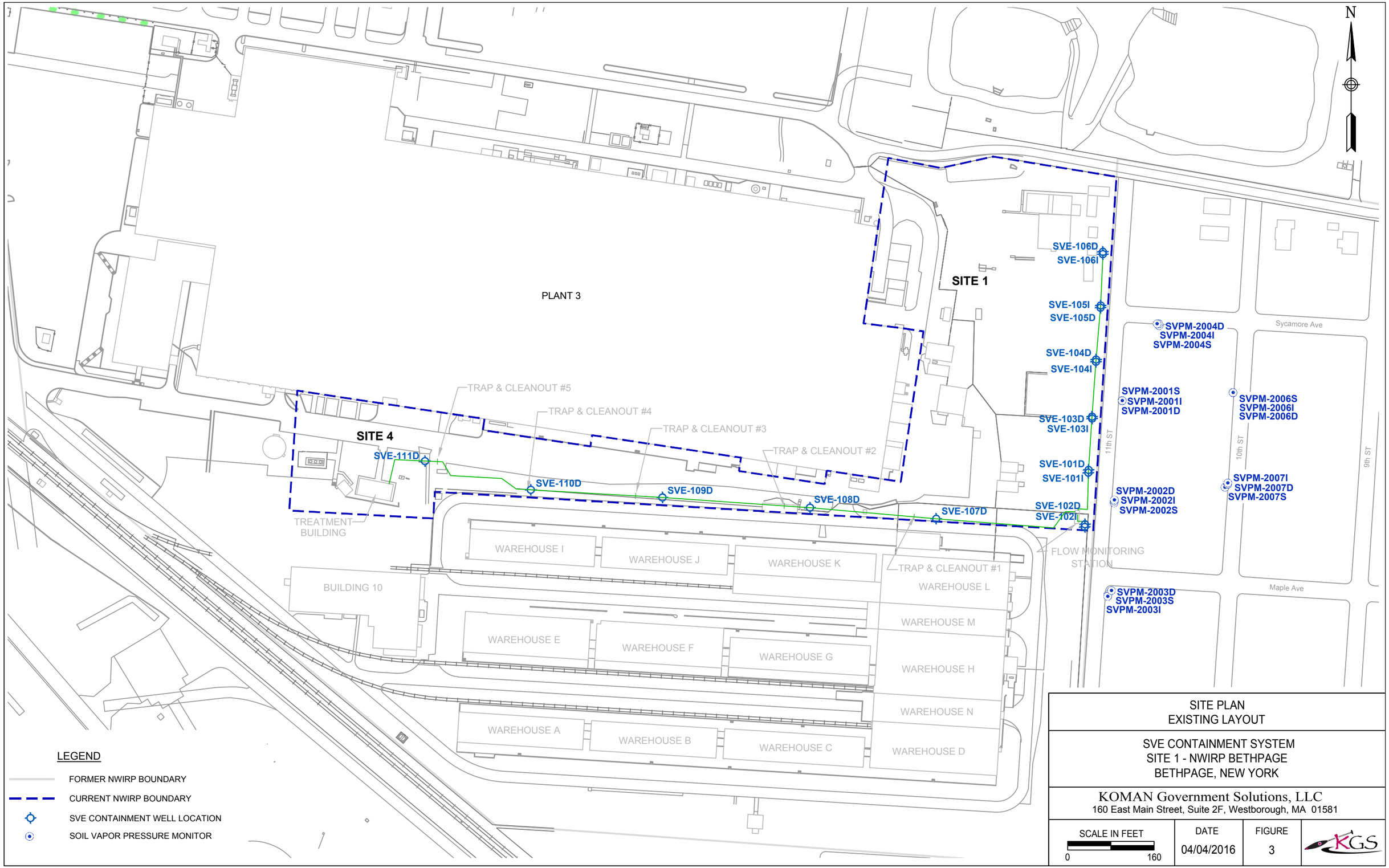


Department of the Navy
Naval Facilities Engineering Command, Mid–Atlantic

Site 1, Former Drum Marshalling Area
Naval Weapons Industrial Reserve Plant
Bethpage, NY

Figure 2
Site 1 Area and Vicinity

KOMAN Government Solutions, LLC



SITE PLAN
EXISTING LAYOUT

SVE CONTAINMENT SYSTEM
SITE 1 - NWIRP BETHPAGE
BETHPAGE, NEW YORK

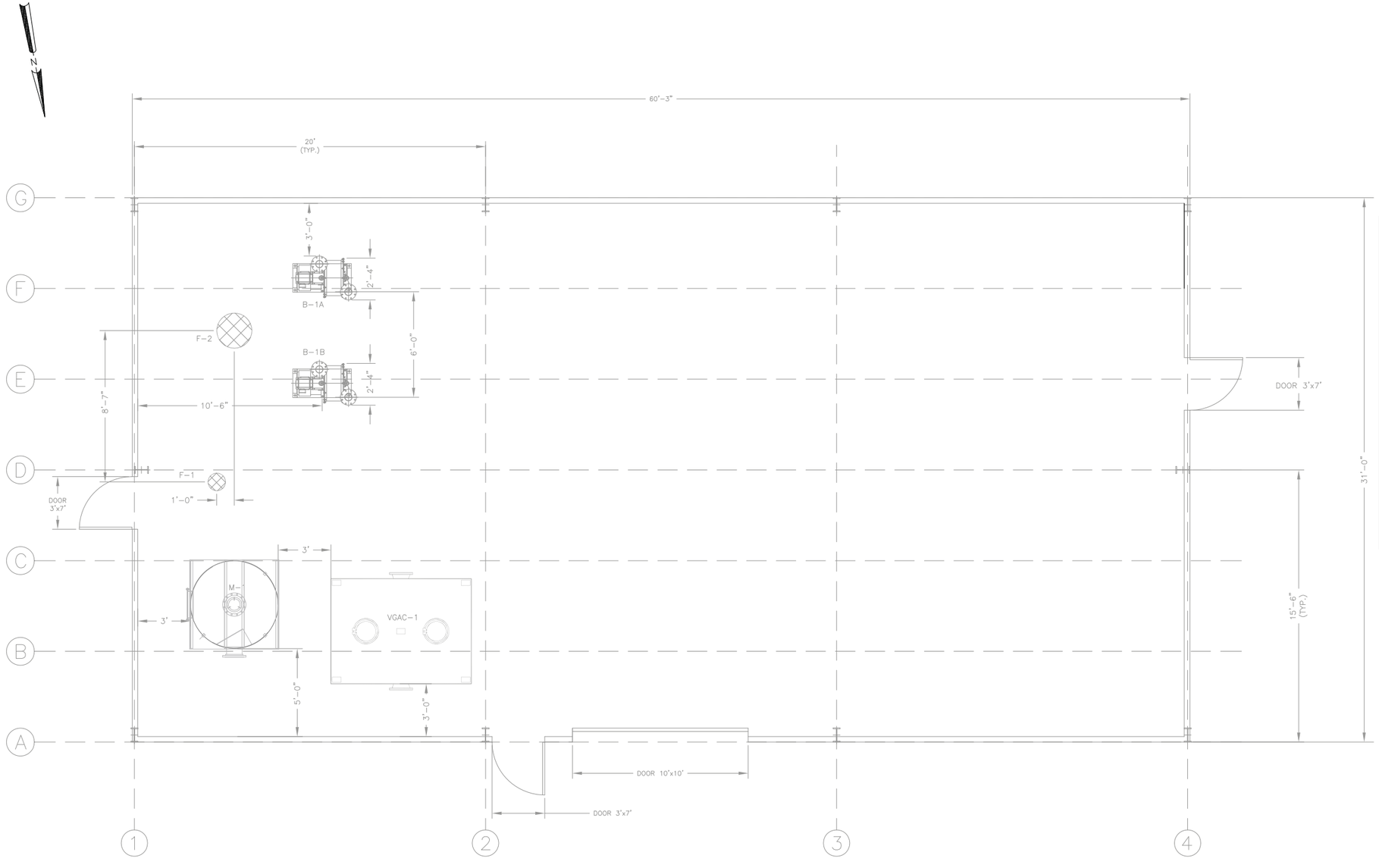
KOMAN Government Solutions, LLC
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE IN FEET	DATE	FIGURE
0 160	04/04/2016	3

BETHPAGE_SitePlan_Fig3.dwg

NOTES:

1. ALL MAN DOORS AND OVERHEAD DOORS ARE EXISTING. MAN DOORS ARE APPROXIMATELY 7'X3'. OVERHEAD DOOR IS APPROXIMATELY 10'X10'.



PROCESS EQUIPMENT LIST		
ITEM NUMBER	NUMBER REQUIRED	NAME/DESCRIPTION
M-1	1	MOISTURE SEPARATOR -CONFIGURATION: VERTICAL, CYLINDRICAL -MATERIAL OF CONSTRUCTION: CARBON STEEL, EPOXY INTERIOR COATING, PAINT EXTERIOR COATING -CAPACITY: 400 GALLON CONDENSATE COLLECTION -DIMENSIONS: 5 FT DIA X 6 FEET HT, 718 GALLON
F-1	1	MAKE-UP AIR FILTER -CONFIGURATION: INTAKE FILTER/SILENCER COMBINATION HOUSING -MATERIAL OF CONSTRUCTION: CARBON STEEL, CORROSION RESISTANCE COATING -CAPACITY: 500 CFM AT 20 IW, 4 INCH FLANGED CONNECTION
F-2	1	BLOWER AIR FILTER -CONFIGURATION: INLINE VACUUM SERVICE FILTER -MATERIAL OF CONSTRUCTION: CARBON STEEL, CORROSION RESISTANCE COATING -CAPACITY: 1,200 CFM AT 35 IW, 10 INCH FLANGED CONNECTION
B-1A, B-1B	2	SOIL VAPOR EXTRACTION BLOWER -CONFIGURATION: HORIZONTAL CENTRIFUGAL -RATING: 600 CFM AT 40 IW -MOTOR: 7.5 HP, 460V, 3PH, 60HZ, ODP
VGAC-1	1	VAPOR-PHASE GRANULAR ACTIVATED CARBON -CONFIGURATION: RECTANGULAR TANK -MATERIAL OF CONSTRUCTION: CARBON STEEL, EPOXY INTERIOR COATING, EPOXY EXTERIOR COATING -RATING: 1,600 CFM AT 3 IW, 2,000 CFM AT 6 IW -CAPACITY: 5,000 LBS CARBON -DIMENSIONS: 6' X 8' FOOTPRINT, 6' 8" HT

3 0 3 6

1" = 3'

TETRA TECH ENGINEERING CORPORATION PC

DESIGN BY: SGP | DR. BY: | CH. ENG: | DRC. SP

SUPV: | SUBMITTED BY: (FIRM NAME) (TITLE) (DATE)

SOLICITATION NO. | HD: | MD: | DR: | PIC: | OFFICER IN CHARGE

REV	DESCRIPTION	PREP BY	DATE	APPRVD
0	ISSUED FOR CONSTRUCTION	DLB	10-14-09	SGP

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND, MID-ATLANTIC
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT, BETHPAGE, NEW YORK

SITE 1, FORMER DRUM MARSHALLING AREA
SOIL VAPOR EXTRACTION CONTAINMENT SYSTEM
LAYOUT PLAN

APPROVED | DATE | EFANE FOR COMMANDER, NAVFAC

SEAL AREA

THIS DRAWING PRODUCED ON AUTOCAD
DO NOT REVISE MANUALLY

SAT TO DATE

CODE I.D. NO.

SCALE : AS SHOWN

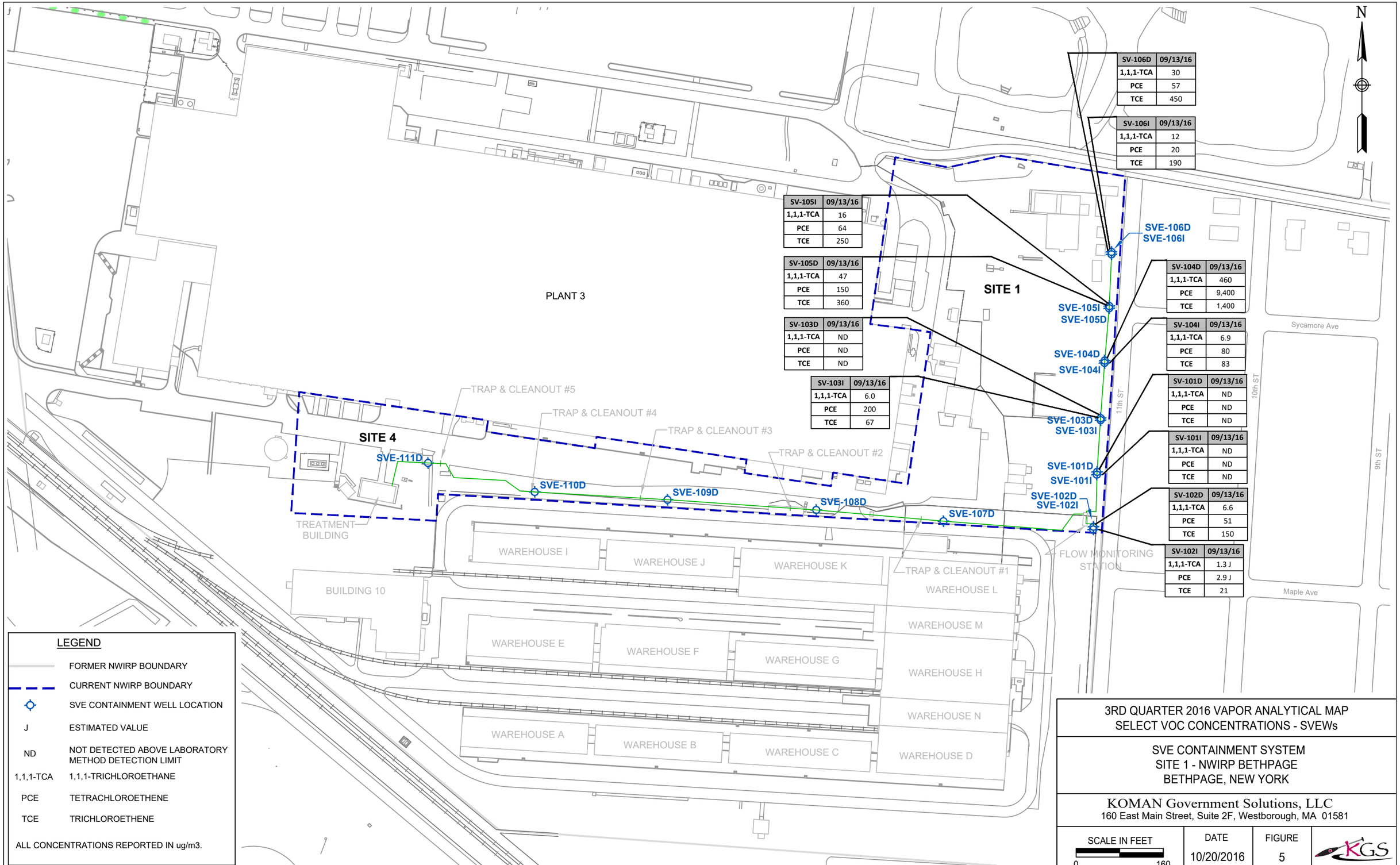
SPEC. NO.

CONSTRN. CONTR. NO.
N62473-10-D-3211

NAVFAC DRAWING NO.
Figure 4

SHEET OF

SIZE: D | DIS. SH. NO. 1-3



SV-106D	09/13/16
1,1,1-TCA	30
PCE	57
TCE	450

SV-106I	09/13/16
1,1,1-TCA	12
PCE	20
TCE	190

SV-105I	09/13/16
1,1,1-TCA	16
PCE	64
TCE	250

SV-105D	09/13/16
1,1,1-TCA	47
PCE	150
TCE	360

SV-104D	09/13/16
1,1,1-TCA	460
PCE	9,400
TCE	1,400

SV-104I	09/13/16
1,1,1-TCA	6.9
PCE	80
TCE	83

SV-103D	09/13/16
1,1,1-TCA	ND
PCE	ND
TCE	ND

SV-103I	09/13/16
1,1,1-TCA	6.0
PCE	200
TCE	67

SV-101D	09/13/16
1,1,1-TCA	ND
PCE	ND
TCE	ND

SV-101I	09/13/16
1,1,1-TCA	ND
PCE	ND
TCE	ND

SV-102D	09/13/16
1,1,1-TCA	6.6
PCE	51
TCE	150

SV-102I	09/13/16
1,1,1-TCA	1.3 J
PCE	2.9 J
TCE	21

LEGEND

	FORMER NWIRP BOUNDARY
	CURRENT NWIRP BOUNDARY
	SVE CONTAINMENT WELL LOCATION
J	ESTIMATED VALUE
ND	NOT DETECTED ABOVE LABORATORY METHOD DETECTION LIMIT
1,1,1-TCA	1,1,1-TRICHLOROETHANE
PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE

ALL CONCENTRATIONS REPORTED IN ug/m3.

3RD QUARTER 2016 VAPOR ANALYTICAL MAP
SELECT VOC CONCENTRATIONS - SVEWs

SVE CONTAINMENT SYSTEM
SITE 1 - NWIRP BETHPAGE
BETHPAGE, NEW YORK

KOMAN Government Solutions, LLC
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE IN FEET
0 160

DATE
10/20/2016

FIGURE
5

BETHPAGE_3Q16_VOC_SVEWs_Fig5.dwg

N

PLANT 3

SITE 1

SITE 4

SVPM-2004S	09/12/16	09/13/16
Vacuum (i.w.)	0.02	0.02

SVPM-2004I	09/12/16	09/13/16
Vacuum (i.w.)	0.04	0.04

SVPM-2004D	09/12/16	09/13/16
Vacuum (i.w.)	0.06	0.04

SVPM-2001S	09/12/16	09/13/16
Vacuum (i.w.)	0.04	0.04

SVPM-2001I	09/12/16	09/13/16
Vacuum (i.w.)	0.06	0.08

SVPM-2001D	09/12/16	09/13/16
Vacuum (i.w.)	0.00	0.00

SVPM-2002S	09/12/16	09/13/16
Vacuum (i.w.)	0.06	0.06

SVPM-2002I	09/12/16	09/13/16
Vacuum (i.w.)	0.10	0.10

SVPM-2002D	09/12/16	09/13/16
Vacuum (i.w.)	0.12	0.14

SVPM-2003S	09/12/16	09/13/16
Vacuum (i.w.)	0.04	0.02

SVPM-2003I	09/12/16	09/13/16
Vacuum (i.w.)	0.04	0.04

SVPM-2003D	09/12/16	09/13/16
Vacuum (i.w.)	0.04	0.06

SVPM-2007S	09/12/16	09/13/16
Vacuum (i.w.)	0.02	0.02

SVPM-2007I	09/12/16	09/13/16
Vacuum (i.w.)	0.01	0.02

SVPM-2007D	09/12/16	09/13/16
Vacuum (i.w.)	0.00	0.02

SVPM-2006S	09/12/16	09/13/16
Vacuum (i.w.)	0.01	0.01

SVPM-2006I	09/12/16	09/13/16
Vacuum (i.w.)	0.01	0.01

SVPM-2006D	09/12/16	09/13/16
Vacuum (i.w.)	0.01	0.01

SVPM-2004D
SVPM-2004I
SVPM-2004S

SVPM-2001S
SVPM-2001I
SVPM-2001D

SVPM-2002D
SVPM-2002I
SVPM-2002S

SVPM-2003D
SVPM-2003S
SVPM-2003I

SVPM-2006S
SVPM-2006I
SVPM-2006D

SVPM-2007I
SVPM-2007D
SVPM-2007S

TRAP & CLEANOUT #5
TRAP & CLEANOUT #4
TRAP & CLEANOUT #3
TRAP & CLEANOUT #2

TREATMENT BUILDING

WAREHOUSE I
WAREHOUSE J
WAREHOUSE K
WAREHOUSE E
WAREHOUSE F
WAREHOUSE G
WAREHOUSE A
WAREHOUSE B
WAREHOUSE C
WAREHOUSE D

BUILDING 10

FLOW MONITORING STATION

Sycamore Ave
Maple Ave
11th ST
10th ST
9th ST

LEGEND

- FORMER NWIRP BOUNDARY
- CURRENT NWIRP BOUNDARY
- SOIL VAPOR PRESSURE MONITOR (SVPM)
- * INDICATES A POSITIVE PRESSURE READING

ALL VACUUM READINGS IN INCHES OF WATER COLUMN (i.w.)

3RD QUARTER 2016
OFFSITE SOIL VAPOR MONITORING
QUARTERLY VACUUM PRESSURE READINGS - SVPMs

SVE CONTAINMENT SYSTEM
SITE 1 - NWIRP BETHPAGE
BETHPAGE, NEW YORK

KOMAN Government Solutions, LLC
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE IN FEET	DATE	FIGURE
0 160	10/14/2016	6

BETHPAGE_3Q16_VAC_SVPM_Fig6.dwg

SVPM 2001S	Oct 2008	01/15/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	1,300	ND	ND	ND	ND	ND
cis-1,2-DCE	20	ND	ND	ND	ND	ND
PCE	4,000	ND	1.3 J	ND	ND	1.1 J
TCE	1,700	ND	ND	ND	ND	1.8 J

SVPM 2001I	Oct 2008	01/15/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	1,700	ND	ND	ND	ND	ND
cis-1,2-DCE	94	ND	ND	ND	ND	ND
PCE	5,000	ND	1.9 J	ND	1.2 J	3.6 J
TCE	2,700	ND	ND	ND	ND	5.0

SVPM 2001D	Oct 2008	01/15/13	1/15/13 Duplicate	01/29/14	01/13/15	1/13/15 Duplicate	01/14/16	09/12/16	9/12/16 Duplicate
1,1,1-TCA	1,400	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	73	ND	ND	ND	ND	ND	6.3	ND	ND
PCE	720	ND	ND	0.53 J	ND	ND	10	ND	2.3 J
TCE	1,500	ND	ND	ND	ND	ND	3.9	ND	4.0 J

SVPM 2002S	Oct 2008	01/15/13	01/29/14	01/13/15	01/14/16	1/14/16 Duplicate	09/12/16
1,1,1-TCA	21,000	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	49 J	ND	ND	ND	ND	ND	ND
PCE	420	ND	2.2 J	ND	ND	ND	0.94 J
TCE	34,000	ND	1.1 J	ND	ND	ND	2.5 J

SVPM 2002I	Oct 2008	01/15/13	01/29/14	1/29/14 Duplicate	01/13/15	01/14/16	09/12/16
1,1,1-TCA	52,000	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	170	ND	ND	ND	ND	ND	ND
PCE	740	ND	1.8 J	ND	ND	ND	ND
TCE	89,000	12	1.8 J	1.4 J	ND	ND	ND

SVPM 2002D	Oct 2008	01/15/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	27,000	ND	ND	ND	ND	ND
cis-1,2-DCE	130.00	ND	ND	ND	ND	ND
PCE	48 J	ND	1.8 J	ND	ND	2.8 J
TCE	26,000	ND	ND	ND	ND	28

SVPM 2003S	Oct 2008	01/16/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	66	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND
PCE	19	1.6 J	ND	ND	ND	2.7 J
TCE	20	4.9	ND	ND	ND	4.7

SVPM 2003I	Oct 2008	01/16/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	170 J	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND
PCE	14	0.97 J	1.5 J	ND	0.89 J	5.5
TCE	82	ND	0.73 J	ND	ND	10

SVPM 2003D	Oct 2008	01/16/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	720 J	ND	ND	ND	ND	ND
cis-1,2-DCE	1.6	ND	ND	ND	ND	ND
PCE	8.9	ND	2.4 J	ND	ND	5.3
TCE	710	ND	ND	ND	ND	10

SVPM 2004S	Oct 2008	01/16/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	1.4	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND
PCE	1.8	1.0 J	1.3 J	ND	ND	2.2 J
TCE	1.0	ND	ND	ND	ND	2.5 J

SVPM 2004I	Oct 2008	01/16/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	460	ND	ND	ND	ND	ND
cis-1,2-DCE	4.6	ND	ND	ND	ND	ND
PCE	1,000	0.68 J	2.9 J	ND	0.83 J	2.0 J
TCE	550	ND	3.7 J	ND	ND	6.8

SVPM 2004D	Oct 2008	01/16/13	01/29/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	480	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	ND	ND
PCE	580	2.3 J	1.5 J	7.1	3.6 J	3.0 J
TCE	600	ND	0.80 J	1.5 J	ND	6.5

SVPM 2006S	Oct 2008	01/16/13	01/30/14	01/13/15	01/14/16	09/12/16
1,1,1-TCA	12	ND	ND	ND	ND	ND
cis-1,2-DCE	4.1	5.4	ND	ND	3.4	3.4
PCE	14	1.0 J	1.4 J	ND	ND	3.8 J
TCE	32	ND	0.80 J	ND	1.6 J	8.2

SVPM 2006I	Oct 2008	01/16/13	01/30/14	01/13/15	01/14/16	1/14/16 Duplicate	09/12/16
1,1,1-TCA	22	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	45	340	10	ND	260	280	260
PCE	29	1.9 J	1.5 J	ND	2.2 J	2.1 J	5.1
TCE	71	47	2.9 J	ND	48	61	57

SVPM 2006D	Oct 2008	01/16/13	01/30/14	01/13/15	01/14/16	09/12/16	9/12/16 Duplicate
1,1,1-TCA	35	ND	ND	ND	ND	ND	0.59 J
cis-1,2-DCE	89	190	22	180	320	320	390
PCE	11	1.4 J	ND	1.7 J	1.9 J	3.9 J	5.3 J
TCE	61	17	2.1 J	30	47	61 J	84 J

SVPM 2007S	Oct 2008	01/16/13	01/30/14	01/14/15	1/14/15 Duplicate	01/14/16	09/12/16
1,1,1-TCA	150	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	13	2.0 J	ND	ND	ND	ND
PCE	13	1.1 J	1.4 J	ND	ND	0.89 J	6.8
TCE	29	5.0	2.5 J	ND	ND	ND	3.9 J

SVPM 2007I/IR	Oct 2008	01/16/13	01/30/14	01/14/15	01/14/16	09/13/16
1,1,1-TCA	260	ND	ND	ND	ND	ND
cis-1,2-DCE	ND	ND	ND	ND	4.4 J	ND
PCE	25	1.8 J	ND	2.3 J	2.3 J	ND
TCE	87	ND	ND	ND	1.9 J	9.8

SVPM 2007D	Oct 2008	01/16/13	1/16/13 Duplicate	01/30/14	1/30/14 Duplicate	01/14/15	01/14/16	09/13/16
1,1,1-TCA	870	1.3 J	1.1 J	ND	ND	ND	0.87 J	ND
cis-1,2-DCE	ND	9.8	11	2.0 J	ND	ND	3.1	ND
PCE	5.3 J	2.2 J	1.8 J	1.2 J	ND	ND	2 J	ND
TCE	400	5.5 J	2.9 J	ND	ND	ND	2.7 J	8.2

SITE 1

SITE 4

SVPM-2004D
SVPM-2004I
SVPM-2004S

SVPM-2001S
SVPM-2001I
SVPM-2001D

SVPM-2006S
SVPM-2006I
SVPM-2006D

SVPM-2002D
SVPM-2002I
SVPM-2002S

SVPM-2007I
SVPM-2007D
SVPM-2007S

SVPM-2003D
SVPM-2003S
SVPM-2003I

Sycamore Ave
Maple Ave
11th ST
10th ST
9th ST
CLEANOUT #3
TRAP & CLEANOUT #2
TRAP & CLEANOUT #1
TREATMENT BUILDING
BUILDING 10
WAREHOUSE K
WAREHOUSE L
WAREHOUSE M
FLOW MONITORING STATION

LEGEND

- FORMER NWIRP BOUNDARY
- CURRENT NWIRP BOUNDARY
- SOIL VAPOR PRESSURE MONITOR (SVPM)
- J — ESTIMATED VALUE
- ND — NOT DETECTED ABOVE LABORATORY METHOD DETECTION LIMIT
- 1,1,1-TCA — 1,1,1-TRICHLOROETHANE
- PCE — TETRACHLOROETHENE
- TCE — TRICHLOROETHENE

ALL CONCENTRATIONS REPORTED IN ug/m3.

3RD QUARTER 2016 VAPOR ANALYTICAL MAP
SELECT VOC CONCENTRATIONS - SVPMs

SVE CONTAINMENT SYSTEM
SITE 1 - NWIRP BETHPAGE
BETHPAGE, NEW YORK

KOMAN Government Solutions, LLC
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE IN FEET
0 160

DATE
10/20/2016

FIGURE
7

BETHPAGE_3Q16_VOC_SVPM_Fig7.dwg

APPENDIX A

NYSDEC AIR DISCHARGE LIMIT DOCUMENTATION

From: Steven Scharf [mailto:sxscharf@gw.dec.state.ny.us]
Sent: Thursday, October 06, 2011 11:57 AM
To: Fly, Lora B CIV NAVFAC MIDLANT, IPTNE
Cc: John Swartwout; Walter Parish; Steven Karpinski; John cofman; klumpe@steelequities.com; David.Brayack@ttnus.com
Subject: NWIRP Plant 3 Site 1 SVE Modification Plan

Lora,

The New York State Department of Environmental Conservation (NYSDEC), in conjunction with the New York State Department of Health (NYSDOH), have reviewed the Navy Submittal entitled:

" Modification to existing Soil vapor Extraction (SVE) Containment System At Site 1-Former Drum Marshaling Area, Installation of Soil Vapor Extraction Wells SVE-107D to 111D, NWIRP Bethpage, September 2011."

Based on this Departmental review, and the follow up October 6, 2011 tele-conference,.this modification work plan is acceptable and can be used for immediate implementation. The NWIRP Site 1 SVE system has redundant blowers and overcapacity, even with the additional SVE wells being added. should the Navy and the new property owner, Steel Equities Inc., for the former Plant 3 complex come to agreement to add SVE piping from the former Plant 3, this would be acceptable. Appropriate plans, consistent with the covenants and restrictions to the deed, should be submitted accordingly.

A letter will not follow this e-mail. If you have any questions, please contact me directly.

Electronic Documentation Information
NWIRP Bethpage
130003B-OU1-OMM
FOIlable
Region 1, Nassau (C), Oyster Bay (T)

Thanks,

Steven M. Scharf, P.E.
Project Engineer
New York State Department of
Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015
(518)402-9620
Fax: (518)402-9022

4.0 PROPOSED REVISIONS TO VAPOR DISCHARGE GOALS

To determine the continued need for off gas treatment, the quality of the influent vapor stream was initially estimated based on soil gas results and compared to discharge goals. Vapor phase treatment was initially installed for the system based on projected relatively high concentrations of several chemicals including 1,1,1-trichloroethane (TCA), trichloroethene (TCE), and tetrachloroethene (PCE). Since the December 2009 startup, VOC concentrations in the extracted vapors have decreased by approximately 98.3 percent and it is uncertain as to whether vapor phase treatment is still required. Presented below are the December 2009 and March 2011 influent (untreated) VOC concentrations and loadings and current discharge goals.

Parameter	December 2009 Influent VOCs		March 2011 Influent VOCs ($\mu g/m^3$)		Current Discharge Goal (pound/hour)[3]
	Concentration ($\mu g/m^3$)[1]	Loading (pound/ hour)[1]	Concentration ($\mu g/m^3$)	Loading (pound/ hour)[2]	
TCA	13,000	0.074	150	0.00023	0.13
TCE	42,000	0.26	460	0.00069	0.07
PCE	7,900	0.029	440	0.00066	0.0009

(1) Initial VOC Loading Rates are from baseline data taken in December 2009. The flow meter was not yet installed when this data was taken, so a value of 385 CFM (flow rate in January 2010) was used to estimate system loading.
(2) Calculated using a flow rate of 400 CFM.
(3) Current discharge goals were based on calculated VOC concentrations using soil gas data from the fence line investigation, a flow rate of 600 CFM, and an assumed treatment efficiency for each VOC of 80 to 90 percent. Based on this evaluation, the existing treatment is no longer required to meet discharge goals.

A DAR-1 Model Analysis was then conducted using the August 2010 influent vapor concentrations of TCA, TCE, and PCE at a flow rate of 500 CFM. The calculated results were then used to back calculate proposed discharge goals based on an allowance of 100% of the annual guideline concentrations (see Appendix E). The following table provides a summary of the proposed discharge goals.

Parameter	August 2010 Influent VOCs (370 CFM – Actual)		Percent AGC Using August 2010 Data	Proposed Discharge Goals	
	Concentration ($\mu g/m^3$)	Loading (pounds/ hour)		Concentration at 500 CFM ($\mu g/m^3$)	Loading (pounds/ hour)
TCA	868	0.0009	0.0004	None[1]	225
TCE	4,170	0.0039	19.4	11,000	0.02
PCE	5,780	0.0057	14.2	22,000	0.04

(1) Greater than 100,000 $\mu g/m^3$.
AGC - Annual Guideline Concentration

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Remedial Action A
625 Broadway, 11th Floor
Albany, New York 12233-7015
Phone: (518) 402-9625 • Fax: (518) 402-9022

Website: www.dec.state.ny.us

February 5, 2010

Lora Fly, Project Manager
Naval Facilities Engineering Command-Midlant
9742 Maryland Avenue
Norfolk, VA 23511-3095

RE: Naval Weapons Industrial Research Plant(NWIRP)
Site-Bethpage, NYSDEC No. 1-30-003B.

Dear Ms. Fly:

Tetra Tech FW, on behalf of the Department of the Navy (Navy), has submitted the enclosed New York State Department of Environmental Conservation (NYSDEC) Division of Air Resources (DAR) Air Permit Application as a permit equivalent. This DAR Air permit equivalent is for the soil vapor extraction system at Site 1 of Plant 3 of the former Naval Weapons Industrial Reserve Plant (NWIRP) site in Bethpage, NY. The NYSDEC Division of Environmental Remediation (DER) has reviewed the permit equivalent and, by means of this letter approves the Site 1 remedy air discharge for immediate operation.

The NWIRP Site 1 SVE system utilizes the reasonably available control technology (RACT) with activated carbon. The air discharge will be periodically monitored at start up and will be added for routine monitoring in the operation, maintenance and monitoring (OMM) plan, to be submitted shortly for Departmental review.

If you have any questions, please contact me at your earliest convenience at (518)402-9620.

Sincerely,

Steven M. Scharf, P.E.
Project Engineer
Division of Environmental Remediation
Bureau of Remedial Action A

Enclosure
ec/w/enc: J. Swartwout/S. Scharf/File
W. Parish, Region 1 NYSDEC
A. J. Shah, Region 1 NYSDEC
S. Patselos, Tetra Tech FW
J. Cofman, Northrop Grumman
E docs: Region 1, Nassau, Oyster Bay (T): NWIRP Bethpage 130003B-OU1-OMM

New York State Department of Environmental Conservation
Air Permit Application

DEC ID	APPLICATION ID	OFFICE USE ONLY
- - - - - - - - -	- - - - - / - - - - - -	/ - / - - -

Section I - Certification

Title V Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information [required pursuant to 6 NYCRR 201-6.3(d)] I believe the information is, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Responsible Official	Title
Signature	Date / /

State Facility Certification

I certify that this facility will be operated in conformance with all provisions of existing regulations.

Responsible Official	Title
Signature	Date / /

Section II - Identification Information

Title V Facility Permit N/A			State Facility Permit N/A	
❑ New	❑ Significant Modification	❑ Administrative Amendment	❑ New	❑ Modification
❑ Renewal	❑ Minor Modification	General Permit Title:	General Permit Title:	
☒ Application involves construction of new facility		❑ Application involves construction of new emission unit(s)		

Owner/Firm

Name	US Navy / NAVFAC Midlant		
Street Address	9742 Maryland Ave, Bldg Z-144		
City Norfolk	State VA	Country US	Zip 23511-3095
Owner Classification ☒ Federal ❑ State ❑ Municipal ❑ Corporation/Partnership ❑ Individual			Taxpayer ID

Facility

❑ Confidential

Name	Naval Weapons Industrial Reserve Plant (NWIRP) Site 1	
Location Address	Bethpage	
❑ City / ☒ Town / ❑ Village	Oyster Bay, New York	Zip 11714

Project Description

❑ Continuation Sheet(s)

Vapor phase granular activated carbon to remove VOCs from soil gas

Owner/Firm Contact Mailing Address

Name (Last, First, Middle Initial)	Fly, Lora		Phone No. (757) 444-0781
Affiliation	Department of the Navy	Title Remedial PM	Fax No. ( )
Street Address	9742 Maryland Ave, Bldg Z-144		
City Norfolk	State VA	Country US	Zip 23511-3095

Facility Contact Mailing Address

Name (Last, First, Middle Initial)			Phone No. ( )
Affiliation	Title		Fax No. ( )
Street Address			
City	State	Country	Zip

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

Section III - Facility Information

Classification

☐ Hospital ☐ Residential ☐ Educational/Institutional ☐ Commercial ☒ Industrial ☐ Utility

Affected States (Title V Only) N/A

☐ Vermont ☐ Massachusetts ☐ Rhode Island ☐ Pennsylvania Tribal Land:_____
☐ New Hampshire ☐ Connecticut ☐ New Jersey ☐ Ohio Tribal Land:_____

SIC Codes

9999												

Facility Description ☐ Continuation Sheet(s)

Soil vapor remediation by SVE followed by vaper phase GAC

Compliance Statements (Title V Only) N/A

I certify that as of the date of this application the facility is in compliance with all applicable requirements: ☐ YES ☐ NO

If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block on page 8 of this form along with the compliance plan information required. For all emission units at this facility that are operating in compliance with all applicable requirements complete the following:

- ☐ This facility will continue to be operated and maintained in such a manner as to assure compliance for the duration of the permit, except those units referenced in the compliance plan portion of Section IV of this application.
- ☐ For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis.
- ☐ Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine the status.

Facility Applicable Federal Requirements N/A ☐ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Facility State Only Requirements ☐ Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

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Section III - Facility Information (continued)

Facility Compliance Certification N/A ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

❑ Applicable Federal Requirement ❑ State Only Requirement	❑ Capping	CAS No. - -	Contaminant Name

Monitoring Information

❑ Ambient Air Monitoring ❑ Work Practice Involving Specific Operations ❑ Record Keeping/Maintenance Procedures

Description

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description

Facility Emissions Summary ☒ Continuation Sheet(s)

CAS No.	Contaminant Name	PTE (lbs/yr)	PTE Range Code	Actual (lbs/yr)
NY075 - 00 - 5	PM-10			
NY075 - 00 - 0	PARTICULATES			
7446 - 09 - 5	SULFUR DIOXIDE			
NY210 - 00 - 0	OXIDES OF NITROGEN			
630 - 08 - 0	CARBON MONOXIDE			
7439 - 92 - 1	LEAD			
NY998 - 00 - 0	VOC	1,222		
NY100 - 00 - 0	HAP	1,813		
00071 - 55 - 6	1,1,1-Trichloroethane (Methyl Chloroform)	591		
00127 - 18 - 4	Tetrachloroethylene	8		
00079 - 01 - 6	Trichloroethylene	1,181		
00075 - 34 - 3	1,1-Dichloroethane	11		
00075 - 35 - 4	1,1-Dichloroethylene (Vinylidine Chloride)	16		

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Section III - Facility Information

Facility Emissions Summary (continuation)

CAS No.	Contaminant Name	PTE (lbs/yr)	PTE Range Code	Actual (lbs/yr)
00540-59-0	cis-1,2-Dichloroethene	5		
00107-06-2	1,2-Dichloroethane	0		
00156-60-5	trans-1,2-Dichloroethene	0		
00075-01-4	Vinyl Chloride	0		
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Section IV - Emission Unit Information

Emission Unit Description ☐ Continuation Sheet(s)

EMISSION UNIT: 1-00EU1 Effluent from first soil vapor extraction blower (BL-1)
Vapor Phase Granular Activated Carbon Unit. The emission point is stack 00ST-2

Building ☐ Continuation Sheet(s)

Building	Building Name	Length (ft)	Width (ft)	Orientation
03-35	Treatment Building	60	40	0

Emission Point ☐ Continuation Sheet(s)

EMISSION PT.: 00ST2

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
	36	6	8	70		

Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
	1,000			03-35	100+	

EMISSION PT.:

Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)

Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal

Emission Source/Control ☐ Continuation Sheet(s)

Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
BL 1/2	1				048	Granular Act. Carbon	Tetrasolv Filtration

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

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Section IV - Emission Unit Information (continued)

Process Information

❑ Continuation Sheet(s)

EMISSION UNIT 1-00EU1 PROCESS SVE

Description

The Soil Vapor Extraction System will consist of 12 SVE wells (6 intermediate and 6 deep), a moisture separator, and 2 soil vapor extraction blowers (BL-1 and BL-2) which both vent to a vapor phase granular activated carbon unit for treatment prior to discharge from stack 00ST2. The VGAC unit will be a 5,000 pound unit, filled with Tetrasolv Virgin Carbon. The VGAC unit has been designed to operate nominally at 600 cfm, with a maximum of 1,000 cfm.

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

❑ Confidential ☒ Operating at Maximum Capacity ❑ Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		
	24	365	03-35	Main

Emission Source/Control Identifier(s)

BL-1	BL-2						

EMISSION UNIT - PROCESS

Description

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

❑ Confidential ❑ Operating at Maximum Capacity ❑ Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		

Emission Source/Control Identifier(s)

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Section IV - Emission Unit Information (continued)

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements ❑ Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
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-													
-													
-													

Emission Unit	Emission Point	Process	Emission Source	Emission Unit State Only Requirements ❑ Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-													
-													
-													
-													

Emission Unit Compliance Certification ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
6	NYCRR	212	-						

❑ Applicable Federal Requirement ❑ State Only Requirement ❑ Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
1-00EU1	00ST2	SVE		00079-01-6	Trichloroethylene

Monitoring Information

- ❑ Continuous Emission Monitoring
- [X] Intermittent Emission Testing
- ❑ Ambient Air Monitoring
- ❑ Monitoring of Process or Control Device Parameters as Surrogate
- ❑ Work Practice Involving Specific Operations
- ❑ Record Keeping/Maintenance Procedures

Description

Monthly grab samples analyzed for VOCs from the VGAC unit influent and effluent

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.
23	Concentration	

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
36,000		255	micrograms per cubic meter

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
01	Instantaneous	05	Monthly	10	Upon Request

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Section IV - Emission Unit Information (continued)

Determination of Non-Applicability (Title V Only) N/A ❑ Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	❑ Applicable Federal Requirement ❑ State Only Requirement
-				

Description

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	❑ Applicable Federal Requirement ❑ State Only Requirement
-				

Description

Process Emissions Summary ☒ Continuation Sheet(s)

EMISSION UNIT 1-00EU1 PROCESS SVE

CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00071-55-6	1,1,1-Trichloroethane			80	0.34	02

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.07	591			02		

EMISSION UNIT 1-00EU1 PROCESS SVE

CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00127-18-4	Tetrachloroethylene			80	0.00	02

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
~~0.00~~ BRT	8			02		

EMISSION UNIT 1-00EU1 PROCESS SVE

CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00079-01-6	Trichloroethylene			80	0.67	02

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
0.13	1,181			02		

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Section IV - Emission Unit Information (continued)

EMISSION UNIT	Emission Unit Emissions Summary			☒ Continuation Sheet(s)
1-00EU1				
CAS No.	Contaminant Name			
00075-34-3	1,1-Dichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	11		
CAS No.	Contaminant Name			
00075-35-4	1,1-Dichloroethylene (Vinylidine Chloride)			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	16		
CAS No.	Contaminant Name			
00540-59-0	cis-1,2-Dichloroethene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	5		
CAS No.	Contaminant Name			
00107-06-2	1,2-Dichloroethane			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	BRT		

Compliance Plan N/A

☐ Continuation Sheet(s)

For any emission units which are not in compliance at the time of permit application, the applicant shall complete the following

Consent Order — Certified progress reports are to be submitted every 6 months beginning ____/____/____

Emission Unit	Process	Emission Source	Applicable Federal Requirement									
			Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-												

Remedial Measure / Intermediate Milestones	R/I	Date Scheduled

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Section IV - Emission Unit Information

EMISSION UNIT	Emission Unit Emissions Summary (continuation)			
1 - 0 0 E U 1				
CAS No.	Contaminant Name			
00156- 60 - 5	trans-1,2-Dichloroethene			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	BRT		
CAS No.	Contaminant Name			
00075- 01 - 4	Vinyl Chloride			
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
	BRT	BRT		
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)

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Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits ❑ Continuation Sheet(s)

EMISSION UNIT -

Emission Reduction Description

Contaminant Emission Reduction Data

Baseline Period ___/___/___ to ___/___/___

CAS No.	Contaminant Name	Reduction Date	Reduction Method	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
- -		/ /			
- -					
- -					

Facility to Use Future Reduction

Name | APPLICATION ID - - /

Location Address

❑ City / ❑ Town / ❑ Village | State | Zip

Use of Emission Reduction Credits ❑ Continuation Sheet(s)

EMISSION UNIT -

Proposed Project Description

Contaminant Emissions Increase Data

CAS No.	Contaminant Name	PEP (lbs/yr)
- -		

Statement of Compliance

❑ All facilities under the ownership of this "ownership/firm" are operating in compliance with all applicable requirements and state regulations including any compliance certification requirements under Section 114(a)(3) of the Clean Air Act Amendments of 1990, or are meeting the schedule of a consent order.

Source of Emission Reduction Credit - Facility

Name | PERMIT ID - - /

Location Address

❑ City / ❑ Town / ❑ Village | State | Zip

Emission Unit	CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
-	- -			
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Supporting Documentation

- ❑ P.E. Certification (form attached)
- ❑ List of Exempt Activities (form attached)
- ❑ Plot Plan
- ❑ Methods Used to Determine Compliance (form attached)
- ☒ Calculations
- ❑ Air Quality Model (____ / ____ / ____)
- ❑ Confidentiality Justification
- ❑ Ambient Air Monitoring Plan (____ / ____ / ____)
- ❑ Stack Test Protocols/Reports (____ / ____ / ____)
- ❑ Continuous Emissions Monitoring Plans/QA/QC (____ / ____ / ____)
- ❑ MACT Demonstration (____ / ____ / ____)
- ❑ Operational Flexibility: Description of Alternative Operating Scenarios and Protocols
- ❑ Title IV: Application/Registration
- ❑ ERC Quantification (form attached)
- ❑ Use of ERC(s) (form attached)
- ❑ Baseline Period Demonstration
- ❑ Analysis of Contemporaneous Emission Increase/Decrease
- ❑ LAER Demonstration (____ / ____ / ____)
- ❑ BACT Demonstration (____ / ____ / ____)
- ❑ Other Document(s): _____ (/ /)

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APPENDIX B

DATA VALIDATION REPORT AND VALIDATED DATA SUMMARY - SVPMs

DATA USABILITY SUMMARY REPORT (DUSR)
VOLATILE ORGANIC COMPOUNDS
USEPA Region II –Data Validation

Project Name: Naval Weapons Industrial Reserve Plant, Site 1

Location: 999 Oyster Bay Rd, Bethpage, NY

Project Number: 2034-701

SDG #: 1609404

Client: KOMAN Government Solutions, LLC.

Date: 10/12/2016

Laboratory: Air Toxics Ltd.

Reviewer: Sherri Pullar

Summary:

1. Data validation was performed on the data for twenty (20) air samples and 2 (two) field blank samples were analyzed for Volatiles by TO-15 in accordance to NYSDEC, Analytical Services Protocol (ASP) Format.

2. The samples were collected on 09/12-13/2016. The samples were submitted to Air Toxics Ltd., Folsom, CA on 09/15/2016 for analysis.

3. The USEPA Region-II SOP # HW-31, Revision 4, October 2006, Validating Air Samples Volatile Organic Analysis of Ambient Air in Canister by Method TO-15 was used in evaluating the Volatiles data in this summary report.

4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (see discussion below).

Samples:

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Analysis	Matrix	Sample Status
BPS1-SVPM2001S-091216	1609404-01A	9/12/2016	VOA	Air	
BPS1-SVPM2001I-091216	1609404-02A	9/12/2016	VOA	Air	
BPS1-SVPM2001D-09 16	1609404-03A	9/12/2016	VOA	Air	
BPS1-SVPM2002S-091216	1609404-04A	9/12/2016	VOA	Air	
BPS1-SVPM2002I-091216	1609404-05A	9/12/2016	VOA	Air	
BPS1-SVPM2002D-091216	1609404-06A	9/12/2016	VOA	Air	
BPS1-SVPM2003S-091216	1609404-07A	9/12/2016	VOA	Air	
BPS1-SVPM2003I-091216	1609404-08A	9/12/2016	VOA	Air	
BPS1-SVPM2003D-091216	1609404-09A	9/12/2016	VOA	Air	
BPS1-SVPM2004S-091216	1609404-10A	9/12/2016	VOA	Air	
BPS1-SVPM2004I-091216	1609404-11A	9/12/2016	VOA	Air	
BPS1-SVPM2004D-091216	1609404-12A	9/12/2016	VOA	Air	
BPS1-SVPM2006S-091216	1609404-13A	9/12/2016	VOA	Air	
BPS1-SVPM2006I-091216	1609404-14A	9/12/2016	VOA	Air	
BPS1-SVPM2006D-091216	1609404-15A	9/12/2016	VOA	Air	
BPS1-SVPM2007S-091216	1609404-16A	9/12/2016	VOA	Air	
BPS1-SVPM2007IR-091316	1609404-17A	9/13/2016	VOA	Air	
BPS1-SVPM2007D-091316	1609404-18A	9/13/2016	VOA	Air	
BPS1-DUP01-091216	1609404-19A	9/12/2016	VOA	Air	Field Duplicate of sample BPS1-SVPM2001D-091216
BPS1-DUP02-091216	1609404-20A	9/12/2016	VOA	Air	Field Duplicate of sample BPS1-SVPM2006D-091216
BPS1-FB2001-091216	1609404-21A	9/12/2016	VOA	Air	Field Blank
BPS1-FB2002-091316	1609404-22A	9/13/2016	VOA	Air	Field Blank

Sample Conditions/Problems:

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did indicate that there were the following problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data:

   a. "The Chain of Custody (COC) information for samples BPS1-SVPM2001D-09 16, BPS1-SVPM2007IR-091316, BPS1-SVPM2007D-091316, and BPS1-DUP01-091216 did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples."

Holding Times:

1. All air samples were analyzed within the method holding time for summa canisters (30 days). No qualifications were required.

GC/MS Tuning:

1. All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration:

1. Initial calibration curve analyzed on 08/23/2016 (msdp.i) exhibited acceptable %RSDs (≤30.0%) for all compounds and average RRF values (≥0.050) for all compounds. No qualifications were required.

2. Initial calibration curve analyzed on 08/10/2016 (msd3.i) exhibited acceptable %RSDs (≤30.0%) for all compounds and average RRF values (≥0.050) for all compounds. No qualifications were required.

Continuing Calibration Verification (CCV):

1. CCV analyzed on 09/21/2016 @ 10:44AM (msdp.i) exhibited acceptable %Ds (≤30.0%) for all compounds. No qualifications were required.

2. CCV analyzed on 09/22/2016 @ 09:05AM (msdp.i) exhibited acceptable %Ds (≤30.0%) for all compounds. No qualifications were required.

3. CCV analyzed on 09/23/2016 @ 09:59AM (msd3.i) exhibited acceptable %Ds (≤30.0%) for all compounds. No qualifications were required.

4. CCV analyzed on 09/23/2016 @ 02:00PM (msdp.i) exhibited acceptable %Ds (≤30.0%) for all compounds. No qualifications were required.

Surrogates:

1. All surrogates %REC values for all water samples and associated QC were within the laboratory control limits. No qualifications were required.

Internal Standard (IS) Area Performance:

1. All samples exhibited acceptable area count for all three internal standards within the QC limits. No qualifications were required.

Method Blank (MB), Storage Blank (SB), Trip Blank (TB), Field Blank (FB), Rinsate Blank (RB, Equipment Blank (EB) and Canister Certification:

1. Method Blank (1609404-23A) analyzed on 09/21/16 was free of contamination. No qualifications were required.

2. Method Blank (1609404-23B) analyzed on 09/22/16 was free of contamination. No qualifications were required.

3. Method Blank (1609404-23C) analyzed on 09/23/16 was free of contamination. No qualifications were required.

4. Method Blank (1609404-23D) analyzed on 09/23/16 was free of contamination. No qualifications were required.

5. Field Blank (BPS1-FB2001-091216) (1601227-21A) analyzed on 09/24/2016 was free of contamination. No qualifications were required.

6. Field Blank (BPS1-FB2002-091316) (1601227-22A) analyzed on 09/24/2016 was free of contamination with the following exception(s):

Sample ID	Compound	Result (µg/l)	Action Level (5x)* (µg/m3)	Sample(s) Affected	Action
BPS1-FB2002-091316	Tetrachloroethene	4.2	21	BPS1-SVPM2007IR-091316 BPS1-SVPM2007D-091316	U U

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):

1. Laboratory Control Samples (1609404-25A/AA) were analyzed on 09/21/2016. All %RECs and RPDs were within the laboratory control limits. No qualifications were required.

2. Laboratory Control Samples (1609404-25B/BB) were analyzed on 09/22/2016. All %RECs and RPDs were within the laboratory control limits. No qualifications were required.

3. Laboratory Control Samples (1609404-25C/CC) were analyzed on 09/23/2016. All %RECs and RPDs were within the laboratory control limits. No qualifications were required.

4. Laboratory Control Samples (1609404-25D/DD) were analyzed on 09/23/2016. All %RECs and RPDs were within the laboratory control limits. No qualifications were required.

Field Duplicate:

1. Sample BPS1-DUP01-091216 (1609404-19A) was collected as field duplicate for sample BPS1-SVPM2001D-091216 (1609404-03A). Both samples were reported as non-detect, with the following exception(s):

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
BPS1-SVPM2001D-091216	Trichloroethene	TO-15	ND	µg/m^3	BPS1-DUP01-091216	4	µg/m^3	**NC**	None
BPS1-SVPM2001D-091216	Tetrachloroethene	TO-15	ND	µg/m^3	BPS1-DUP02-0111416	2.3	µg/m^3	NC	None

2. Sample BPS1-DUP02-091216 (1609404-20A) was collected as field duplicate for sample BPS1-SVPM2006D-091216 (1609404-15A). RPDs were within the control limits (<30%) with the following exception(s):

Field Sample	Compound	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
BPS1-SVPM2006D-091216	Cis-1,2-Dichloroethene	TO-15	320	µg/m^3	BPS1-DUP02-091216	390	µg/m^3	**19.7**	None
BPS1-SVPM2006D-091216	Tetrachloroethene	TO-15	3.9	µg/m^3	BPS1-DUP02-091216	5.3	µg/m^3	30.4	J
BPS1-SVPM2006D-091216	Trans-1,2-Dichloroethene	TO-15	3.5	µg/m^3	BPS1-DUP02-091216	4.4	µg/m^3	22.8	None
BPS1-SVPM2006D-091216	1,1,1-Trichloroethane	TO-15	ND	µg/m^3	BPS1-DUP02-091216	0.59	µg/m^3	NC	None
BPS1-SVPM2006D-091216	Trichloroethene	TO-15	61	µg/m^3	BPS1-DUP02-091216	84	µg/m^3	31.7	J

Sample Duplicate:

1. Sample duplicate was performed on sample BPS1-SVPM2001D-09 16 (1601227-03A/AA). All RPDs were ≤ 30%. No qualifications were required.

2. Sample duplicate was performed on sample BPS1-SVPM2003S-091216 (1601227-07A/AA). All RPDs were ≤ 30%. No qualifications were required.

3. Sample duplicate was performed on sample BPS1-SVPM2003I-091216 (1601227-08A/AA). All RPDs were ≤ 30%. No qualifications were required.

Target Compound Identification:

1. All Relative Retention Times (RRTs) of the reported compounds were within ± 0.06 RRT units of the standard (opening CCV).

2. Sample compound spectra were compared against the laboratory standard spectra.

3. No QC deviations were observed.

Compound Quantitation and Reported Detection Limits:

1. All sample results were reported within the linear calibration range. No qualifications were required.

2. Manual Calculation:

$$\text{Concentration } (\mu g/m^3) = \frac{\text{Result (ppbv) x Molecular weight x DF}}{24.46}$$

BPS1-SVPM2004D-091216 (1609404-12A)

Tetrachloroethene
Result (ppbv) = 0.3736
Molecular Weight @ 25°C=165.83
DF = 1.52

$$\text{Concentration } (\mu g/m^3) \frac{0.3736 \text{ x } 165.83 \text{ x } 1.52}{24.45} = 3.851 \mu g/m^3$$

Compound	Laboratory ($\mu g/m^3$)	Validation ($\mu g/m^3$)	%D
Tetrachloroethene	3.8	3.8	0.0

Comments:

1. Volatile data package meet requirement for New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) Category B Deliverables.

2. Validation qualifiers (if required) were entered into the EDD for SDG: 1609404.

3. Summary of the qualified data is listed in the Data Summary Table for SDG: 1609404.

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DATA SUMMARY TABLE
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SDG: 1609404

Sample Name	Lab ID	Analytical Name	Analytical Method	Sample Date	Result	Unit	Qualifier	LOD	LOQ
BPS1-SVPM2001S-091216	1609404-01A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.77	1.9
BPS1-SVPM2001S-091216	1609404-01A	trans-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2001S-091216	1609404-01A	cis-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2001S-091216	1609404-01A	1,2-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2001S-091216	1609404-01A	Trichloroethene	TO-15	20160912	1.8	UG_M3	J	1.6	4
BPS1-SVPM2001S-091216	1609404-01A	Tetrachloroethene	TO-15	20160912	1.1	UG_M3	J	2	5.1
BPS1-SVPM2001S-091216	1609404-01A	1,1-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.3	3
BPS1-SVPM2001S-091216	1609404-01A	1,1-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2001S-091216	1609404-01A	1,1,1-Trichloroethane	TO-15	20160912	4.1	UG_M3	U	1.6	4.1
BPS1-SVPM2001I-091216	1609404-02A	Vinyl Chloride	TO-15	20160912	2	UG_M3	U	0.79	2
BPS1-SVPM2001I-091216	1609404-02A	trans-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2001I-091216	1609404-02A	cis-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2001I-091216	1609404-02A	1,2-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2001I-091216	1609404-02A	Trichloroethene	TO-15	20160912	5	UG_M3		1.6	4.1
BPS1-SVPM2001I-091216	1609404-02A	Tetrachloroethene	TO-15	20160912	3.6	UG_M3	J	2.1	5.2
BPS1-SVPM2001I-091216	1609404-02A	1,1-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.4	3
BPS1-SVPM2001I-091216	1609404-02A	1,1-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2001I-091216	1609404-02A	1,1,1-Trichloroethane	TO-15	20160912	4.2	UG_M3	U	1.7	4.2
BPS1-SVPM2001D-09 16	1609404-03A	Vinyl Chloride	TO-15	20160912	1.8	UG_M3	U	0.74	1.8
BPS1-SVPM2001D-09 16	1609404-03A	trans-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.1	2.9
BPS1-SVPM2001D-09 16	1609404-03A	cis-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.1	2.9
BPS1-SVPM2001D-09 16	1609404-03A	1,2-Dichloroethane	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2001D-09 16	1609404-03A	Trichloroethene	TO-15	20160912	3.9	UG_M3	U	1.6	3.9
BPS1-SVPM2001D-09 16	1609404-03A	Tetrachloroethene	TO-15	20160912	4.9	UG_M3	U	2	4.9
BPS1-SVPM2001D-09 16	1609404-03A	1,1-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.3	2.9
BPS1-SVPM2001D-09 16	1609404-03A	1,1-Dichloroethane	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2001D-09 16	1609404-03A	1,1,1-Trichloroethane	TO-15	20160912	4	UG_M3	U	1.6	4
BPS1-SVPM2002S-091216	1609404-04A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.75	1.9
BPS1-SVPM2002S-091216	1609404-04A	trans-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2002S-091216	1609404-04A	cis-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2002S-091216	1609404-04A	1,2-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2002S-091216	1609404-04A	Trichloroethene	TO-15	20160912	2.5	UG_M3	J	1.6	4
BPS1-SVPM2002S-091216	1609404-04A	Tetrachloroethene	TO-15	20160912	0.94	UG_M3	J	2	5
BPS1-SVPM2002S-091216	1609404-04A	1,1-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.3	2.9
BPS1-SVPM2002S-091216	1609404-04A	1,1-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3

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Sample Name	Lab ID	Analytical Name	Analytical Method	Sample Date	Result	Unit	Qualifier	LOD	LOQ
BPS1-SVPM2002S-091216	1609404-04A	1,1,1-Trichloroethane	TO-15	20160912	4	UG_M3	U	1.6	4
BPS1-SVPM2002I-091216	1609404-05A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.75	1.9
BPS1-SVPM2002I-091216	1609404-05A	trans-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2002I-091216	1609404-05A	cis-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2002I-091216	1609404-05A	1,2-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2002I-091216	1609404-05A	Trichloroethene	TO-15	20160912	3.9	UG_M3	U	1.6	3.9
BPS1-SVPM2002I-091216	1609404-05A	Tetrachloroethene	TO-15	20160912	5	UG_M3	U	2	5
BPS1-SVPM2002I-091216	1609404-05A	1,1-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.3	2.9
BPS1-SVPM2002I-091216	1609404-05A	1,1-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2002I-091216	1609404-05A	1,1,1-Trichloroethane	TO-15	20160912	4	UG_M3	U	1.6	4
BPS1-SVPM2002D-091216	1609404-06A	Vinyl Chloride	TO-15	20160912	2	UG_M3	U	0.79	2
BPS1-SVPM2002D-091216	1609404-06A	trans-1,2-Dichloroethene	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2002D-091216	1609404-06A	cis-1,2-Dichloroethene	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2002D-091216	1609404-06A	1,2-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2002D-091216	1609404-06A	Trichloroethene	TO-15	20160912	28	UG_M3		1.7	4.2
BPS1-SVPM2002D-091216	1609404-06A	Tetrachloroethene	TO-15	20160912	2.8	UG_M3	J	2.1	5.2
BPS1-SVPM2002D-091216	1609404-06A	1,1-Dichloroethene	TO-15	20160912	3.1	UG_M3	U	1.4	3.1
BPS1-SVPM2002D-091216	1609404-06A	1,1-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2002D-091216	1609404-06A	1,1,1-Trichloroethane	TO-15	20160912	4.2	UG_M3	U	1.7	4.2
BPS1-SVPM2003S-091216	1609404-07A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.75	1.9
BPS1-SVPM2003S-091216	1609404-07A	trans-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2003S-091216	1609404-07A	cis-1,2-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.2	2.9
BPS1-SVPM2003S-091216	1609404-07A	1,2-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2003S-091216	1609404-07A	Trichloroethene	TO-15	20160912	4.7	UG_M3		1.6	4
BPS1-SVPM2003S-091216	1609404-07A	Tetrachloroethene	TO-15	20160912	2.7	UG_M3	J	2	5
BPS1-SVPM2003S-091216	1609404-07A	1,1-Dichloroethene	TO-15	20160912	2.9	UG_M3	U	1.3	2.9
BPS1-SVPM2003S-091216	1609404-07A	1,1-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2003S-091216	1609404-07A	1,1,1-Trichloroethane	TO-15	20160912	4	UG_M3	U	1.6	4
BPS1-SVPM2003I-091216	1609404-08A	Vinyl Chloride	TO-15	20160912	2	UG_M3	U	0.81	2
BPS1-SVPM2003I-091216	1609404-08A	trans-1,2-Dichloroethene	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2003I-091216	1609404-08A	cis-1,2-Dichloroethene	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2003I-091216	1609404-08A	1,2-Dichloroethane	TO-15	20160912	3.2	UG_M3	U	1.3	3.2
BPS1-SVPM2003I-091216	1609404-08A	Trichloroethene	TO-15	20160912	10	UG_M3		1.7	4.2
BPS1-SVPM2003I-091216	1609404-08A	Tetrachloroethene	TO-15	20160912	5.5	UG_M3		2.1	5.4
BPS1-SVPM2003I-091216	1609404-08A	1,1-Dichloroethene	TO-15	20160912	3.1	UG_M3	U	1.4	3.1

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Sample Name	Lab ID	Analytical Name	Analytical Method	Sample Date	Result	Unit	Qualifier	LOD	LOQ
BPS1-SVPM2003I-091216	1609404-08A	1,1-Dichloroethane	TO-15	20160912	3.2	UG_M3	U	1.3	3.2
BPS1-SVPM2003I-091216	1609404-08A	1,1,1-Trichloroethane	TO-15	20160912	4.3	UG_M3	U	1.7	4.3
BPS1-SVPM2003D-091216	1609404-09A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.77	1.9
BPS1-SVPM2003D-091216	1609404-09A	trans-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2003D-091216	1609404-09A	cis-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2003D-091216	1609404-09A	1,2-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2003D-091216	1609404-09A	Trichloroethene	TO-15	20160912	10	UG_M3		1.6	4
BPS1-SVPM2003D-091216	1609404-09A	Tetrachloroethene	TO-15	20160912	5.3	UG_M3		2	5.1
BPS1-SVPM2003D-091216	1609404-09A	1,1-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.3	3
BPS1-SVPM2003D-091216	1609404-09A	1,1-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2003D-091216	1609404-09A	1,1,1-Trichloroethane	TO-15	20160912	4.1	UG_M3	U	1.6	4.1
BPS1-SVPM2004S-091216	1609404-10A	Vinyl Chloride	TO-15	20160912	2	UG_M3	U	0.81	2
BPS1-SVPM2004S-091216	1609404-10A	trans-1,2-Dichloroethene	TO-15	20160912	3.2	UG_M3	U	1.3	3.2
BPS1-SVPM2004S-091216	1609404-10A	cis-1,2-Dichloroethene	TO-15	20160912	3.2	UG_M3	U	1.3	3.2
BPS1-SVPM2004S-091216	1609404-10A	1,2-Dichloroethane	TO-15	20160912	3.2	UG_M3	U	1.3	3.2
BPS1-SVPM2004S-091216	1609404-10A	Trichloroethene	TO-15	20160912	2.5	UG_M3	J	1.7	4.3
BPS1-SVPM2004S-091216	1609404-10A	Tetrachloroethene	TO-15	20160912	2.2	UG_M3	J	2.2	5.4
BPS1-SVPM2004S-091216	1609404-10A	1,1-Dichloroethene	TO-15	20160912	3.2	UG_M3	U	1.4	3.2
BPS1-SVPM2004S-091216	1609404-10A	1,1-Dichloroethane	TO-15	20160912	3.2	UG_M3	U	1.3	3.2
BPS1-SVPM2004S-091216	1609404-10A	1,1,1-Trichloroethane	TO-15	20160912	4.3	UG_M3	U	1.7	4.3
BPS1-SVPM2004I-091216	1609404-11A	Vinyl Chloride	TO-15	20160912	2.1	UG_M3	U	0.84	2.1
BPS1-SVPM2004I-091216	1609404-11A	trans-1,2-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2004I-091216	1609404-11A	cis-1,2-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2004I-091216	1609404-11A	1,2-Dichloroethane	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2004I-091216	1609404-11A	Trichloroethene	TO-15	20160912	6.8	UG_M3		1.8	4.4
BPS1-SVPM2004I-091216	1609404-11A	Tetrachloroethene	TO-15	20160912	2	UG_M3	J	2.2	5.6
BPS1-SVPM2004I-091216	1609404-11A	1,1-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.5	3.3
BPS1-SVPM2004I-091216	1609404-11A	1,1-Dichloroethane	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2004I-091216	1609404-11A	1,1,1-Trichloroethane	TO-15	20160912	4.5	UG_M3	U	1.8	4.5
BPS1-SVPM2004D-091216	1609404-12A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.76	1.9
BPS1-SVPM2004D-091216	1609404-12A	trans-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2004D-091216	1609404-12A	cis-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2004D-091216	1609404-12A	1,2-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2004D-091216	1609404-12A	Trichloroethene	TO-15	20160912	6.5	UG_M3		1.6	4
BPS1-SVPM2004D-091216	1609404-12A	Tetrachloroethene	TO-15	20160912	3	UG_M3	J	2	5

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Sample Name	Lab ID	Analytical Name	Analytical Method	Sample Date	Result	Unit	Qualifier	LOD	LOQ
BPS1-SVPM2004D-091216	1609404-12A	1,1-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.3	3
BPS1-SVPM2004D-091216	1609404-12A	1,1-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2004D-091216	1609404-12A	1,1,1-Trichloroethane	TO-15	20160912	4.1	UG_M3	U	1.6	4.1
BPS1-SVPM2006S-091216	1609404-13A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.78	1.9
BPS1-SVPM2006S-091216	1609404-13A	trans-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2006S-091216	1609404-13A	cis-1,2-Dichloroethene	TO-15	20160912	3.4	UG_M3		1.2	3
BPS1-SVPM2006S-091216	1609404-13A	1,2-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2006S-091216	1609404-13A	Trichloroethene	TO-15	20160912	8.2	UG_M3		1.6	4.1
BPS1-SVPM2006S-091216	1609404-13A	Tetrachloroethene	TO-15	20160912	3.8	UG_M3	J	2.1	5.2
BPS1-SVPM2006S-091216	1609404-13A	1,1-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.4	3
BPS1-SVPM2006S-091216	1609404-13A	1,1-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-SVPM2006S-091216	1609404-13A	1,1,1-Trichloroethane	TO-15	20160912	4.1	UG_M3	U	1.6	4.1
BPS1-SVPM2006I-091216	1609404-14A	Vinyl Chloride	TO-15	20160912	1.9	UG_M3	U	0.77	1.9
BPS1-SVPM2006I-091216	1609404-14A	trans-1,2-Dichloroethene	TO-15	20160912	4	UG_M3		1.2	3
BPS1-SVPM2006I-091216	1609404-14A	cis-1,2-Dichloroethene	TO-15	20160912	260	UG_M3		1.2	3
BPS1-SVPM2006I-091216	1609404-14A	1,2-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2006I-091216	1609404-14A	Trichloroethene	TO-15	20160912	57	UG_M3		1.6	4
BPS1-SVPM2006I-091216	1609404-14A	Tetrachloroethene	TO-15	20160912	5.1	UG_M3		2	5.1
BPS1-SVPM2006I-091216	1609404-14A	1,1-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.3	3
BPS1-SVPM2006I-091216	1609404-14A	1,1-Dichloroethane	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-SVPM2006I-091216	1609404-14A	1,1,1-Trichloroethane	TO-15	20160912	4.1	UG_M3	U	1.6	4.1
BPS1-SVPM2006D-091216	1609404-15A	Vinyl Chloride	TO-15	20160912	1.7	UG_M3	U	0.68	1.7
BPS1-SVPM2006D-091216	1609404-15A	trans-1,2-Dichloroethene	TO-15	20160912	3.5	UG_M3		1.1	2.6
BPS1-SVPM2006D-091216	1609404-15A	cis-1,2-Dichloroethene	TO-15	20160912	320	UG_M3		1.1	2.6
BPS1-SVPM2006D-091216	1609404-15A	1,2-Dichloroethane	TO-15	20160912	2.7	UG_M3	U	1.1	2.7
BPS1-SVPM2006D-091216	1609404-15A	Trichloroethene	TO-15	20160912	61	UG_M3	J	1.4	3.6
BPS1-SVPM2006D-091216	1609404-15A	Tetrachloroethene	TO-15	20160912	3.9	UG_M3	J	1.8	4.5
BPS1-SVPM2006D-091216	1609404-15A	1,1-Dichloroethene	TO-15	20160912	2.6	UG_M3	U	1.2	2.6
BPS1-SVPM2006D-091216	1609404-15A	1,1-Dichloroethane	TO-15	20160912	2.7	UG_M3	U	1.1	2.7
BPS1-SVPM2006D-091216	1609404-15A	1,1,1-Trichloroethane	TO-15	20160912	3.6	UG_M3	U	1.5	3.6
BPS1-SVPM2007S-091216	1609404-16A	Vinyl Chloride	TO-15	20160912	2.1	UG_M3	U	0.84	2.1
BPS1-SVPM2007S-091216	1609404-16A	trans-1,2-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2007S-091216	1609404-16A	cis-1,2-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2007S-091216	1609404-16A	1,2-Dichloroethane	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2007S-091216	1609404-16A	Trichloroethene	TO-15	20160912	3.9	UG_M3	J	1.8	4.4

NWIRP BETHPAGE, BETHPAGE, NY
SITE 1
DATA SUMMARY TABLE
AIR
SDG: 1609404

Sample Name	Lab ID	Analytical Name	Analytical Method	Sample Date	Result	Unit	Qualifier	LOD	LOQ
BPS1-SVPM2007S-091216	1609404-16A	Tetrachloroethene	TO-15	20160912	6.8	UG_M3		2.2	5.6
BPS1-SVPM2007S-091216	1609404-16A	1,1-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.5	3.3
BPS1-SVPM2007S-091216	1609404-16A	1,1-Dichloroethane	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-SVPM2007S-091216	1609404-16A	1,1,1-Trichloroethane	TO-15	20160912	4.5	UG_M3	U	1.8	4.5
BPS1-SVPM2007IR-091316	1609404-17A	Vinyl Chloride	TO-15	20160913	1.8	UG_M3	U	0.71	1.8
BPS1-SVPM2007IR-091316	1609404-17A	trans-1,2-Dichloroethene	TO-15	20160913	2.8	UG_M3	U	1.1	2.8
BPS1-SVPM2007IR-091316	1609404-17A	cis-1,2-Dichloroethene	TO-15	20160913	2.8	UG_M3	U	1.1	2.8
BPS1-SVPM2007IR-091316	1609404-17A	1,2-Dichloroethane	TO-15	20160913	2.8	UG_M3	U	1.1	2.8
BPS1-SVPM2007IR-091316	1609404-17A	Trichloroethene	TO-15	20160913	9.8	UG_M3		1.5	3.7
BPS1-SVPM2007IR-091316	1609404-17A	Tetrachloroethene	TO-15	20160913	7.4	UG_M3	U	1.9	4.7
BPS1-SVPM2007IR-091316	1609404-17A	1,1-Dichloroethene	TO-15	20160913	2.8	UG_M3	U	1.2	2.8
BPS1-SVPM2007IR-091316	1609404-17A	1,1-Dichloroethane	TO-15	20160913	2.8	UG_M3	U	1.1	2.8
BPS1-SVPM2007IR-091316	1609404-17A	1,1,1-Trichloroethane	TO-15	20160913	3.8	UG_M3	U	1.5	3.8
BPS1-SVPM2007D-091316	1609404-18A	Vinyl Chloride	TO-15	20160913	2.7	UG_M3	U	1.1	2.7
BPS1-SVPM2007D-091316	1609404-18A	trans-1,2-Dichloroethene	TO-15	20160913	4.2	UG_M3	U	1.7	4.2
BPS1-SVPM2007D-091316	1609404-18A	cis-1,2-Dichloroethene	TO-15	20160913	4.2	UG_M3	U	1.7	4.2
BPS1-SVPM2007D-091316	1609404-18A	1,2-Dichloroethane	TO-15	20160913	4.3	UG_M3	U	1.7	4.3
BPS1-SVPM2007D-091316	1609404-18A	Trichloroethene	TO-15	20160913	8.2	UG_M3		2.3	5.7
BPS1-SVPM2007D-091316	1609404-18A	Tetrachloroethene	TO-15	20160913	4.1	UG_M3	U	2.9	7.2
BPS1-SVPM2007D-091316	1609404-18A	1,1-Dichloroethene	TO-15	20160913	4.2	UG_M3	U	1.7	4.2
BPS1-SVPM2007D-091316	1609404-18A	1,1-Dichloroethane	TO-15	20160913	4.3	UG_M3	U	1.7	4.3
BPS1-SVPM2007D-091316	1609404-18A	1,1,1-Trichloroethane	TO-15	20160913	5.8	UG_M3	U	2.3	5.8
BPS1-DUP01-091216	1609404-19A	Vinyl Chloride	TO-15	20160912	2	UG_M3	U	0.79	2
BPS1-DUP01-091216	1609404-19A	trans-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-DUP01-091216	1609404-19A	cis-1,2-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-DUP01-091216	1609404-19A	1,2-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-DUP01-091216	1609404-19A	Trichloroethene	TO-15	20160912	4	UG_M3	J	1.6	4.1
BPS1-DUP01-091216	1609404-19A	Tetrachloroethene	TO-15	20160912	2.3	UG_M3	J	2.1	5.2
BPS1-DUP01-091216	1609404-19A	1,1-Dichloroethene	TO-15	20160912	3	UG_M3	U	1.2	3
BPS1-DUP01-091216	1609404-19A	1,1-Dichloroethane	TO-15	20160912	3.1	UG_M3	U	1.2	3.1
BPS1-DUP01-091216	1609404-19A	1,1,1-Trichloroethane	TO-15	20160912	4.2	UG_M3	U	1.7	4.2
BPS1-DUP02-091216	1609404-20A	Vinyl Chloride	TO-15	20160912	1.8	UG_M3	U	0.7	1.8
BPS1-DUP02-091216	1609404-20A	trans-1,2-Dichloroethene	TO-15	20160912	4.4	UG_M3		1.1	2.7
BPS1-DUP02-091216	1609404-20A	cis-1,2-Dichloroethene	TO-15	20160912	390	UG_M3		1.1	2.7
BPS1-DUP02-091216	1609404-20A	1,2-Dichloroethane	TO-15	20160912	2.8	UG_M3	U	1.1	2.8

NWIRP BETHPAGE, BETHPAGE, NY
SITE 1
DATA SUMMARY TABLE
AIR
SDG: 1609404

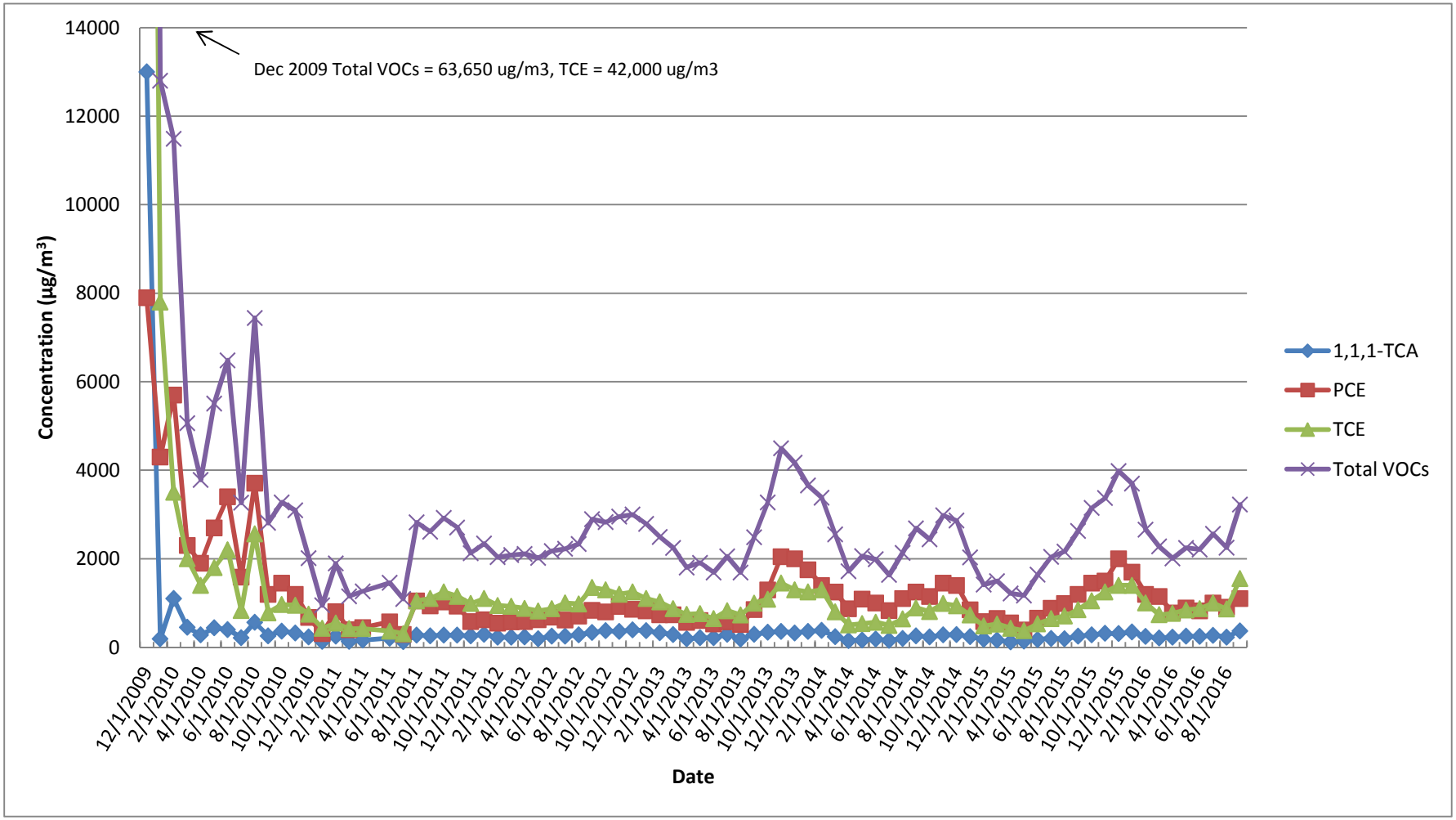
Sample Name	Lab ID	Analytical Name	Analytical Method	Sample Date	Result	Unit	Qualifier	LOD	LOQ
BPS1-DUP02-091216	1609404-20A	Trichloroethene	TO-15	20160912	84	UG_M3	J	1.5	3.7
BPS1-DUP02-091216	1609404-20A	Tetrachloroethene	TO-15	20160912	5.3	UG_M3	J	1.8	4.6
BPS1-DUP02-091216	1609404-20A	1,1-Dichloroethene	TO-15	20160912	2.7	UG_M3	U	1.1	2.7
BPS1-DUP02-091216	1609404-20A	1,1-Dichloroethane	TO-15	20160912	2.8	UG_M3	U	1.1	2.8
BPS1-DUP02-091216	1609404-20A	1,1,1-Trichloroethane	TO-15	20160912	0.59	UG_M3	J	1.5	3.7
BPS1-FB2001-091216	1609404-21A	Vinyl Chloride	TO-15	20160912	2.1	UG_M3	U	0.85	2.1
BPS1-FB2001-091216	1609404-21A	trans-1,2-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-FB2001-091216	1609404-21A	cis-1,2-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-FB2001-091216	1609404-21A	1,2-Dichloroethane	TO-15	20160912	3.4	UG_M3	U	1.4	3.4
BPS1-FB2001-091216	1609404-21A	Trichloroethene	TO-15	20160912	4.5	UG_M3	U	1.8	4.5
BPS1-FB2001-091216	1609404-21A	Tetrachloroethene	TO-15	20160912	5.7	UG_M3	U	2.3	5.7
BPS1-FB2001-091216	1609404-21A	1,1-Dichloroethene	TO-15	20160912	3.3	UG_M3	U	1.3	3.3
BPS1-FB2001-091216	1609404-21A	1,1-Dichloroethane	TO-15	20160912	3.4	UG_M3	U	1.4	3.4
BPS1-FB2001-091216	1609404-21A	1,1,1-Trichloroethane	TO-15	20160912	4.6	UG_M3	U	1.8	4.6
BPS1-FB2002-091316	1609404-22A	Vinyl Chloride	TO-15	20160913	2.1	UG_M3	U	0.85	2.1
BPS1-FB2002-091316	1609404-22A	trans-1,2-Dichloroethene	TO-15	20160913	3.3	UG_M3	U	1.3	3.3
BPS1-FB2002-091316	1609404-22A	cis-1,2-Dichloroethene	TO-15	20160913	3.3	UG_M3	U	1.3	3.3
BPS1-FB2002-091316	1609404-22A	1,2-Dichloroethane	TO-15	20160913	3.4	UG_M3	U	1.3	3.4
BPS1-FB2002-091316	1609404-22A	Trichloroethene	TO-15	20160913	4.5	UG_M3	U	1.8	4.5
BPS1-FB2002-091316	1609404-22A	Tetrachloroethene	TO-15	20160913	4.2	UG_M3	J	2.2	5.6
BPS1-FB2002-091316	1609404-22A	1,1-Dichloroethene	TO-15	20160913	3.3	UG_M3	U	1.3	3.3
BPS1-FB2002-091316	1609404-22A	1,1-Dichloroethane	TO-15	20160913	3.4	UG_M3	U	1.3	3.4
BPS1-FB2002-091316	1609404-22A	1,1,1-Trichloroethane	TO-15	20160913	4.5	UG_M3	U	1.8	4.5

APPENDIX C

VAPOR CONCENTRATION TREND GRAPHS – SVEWs

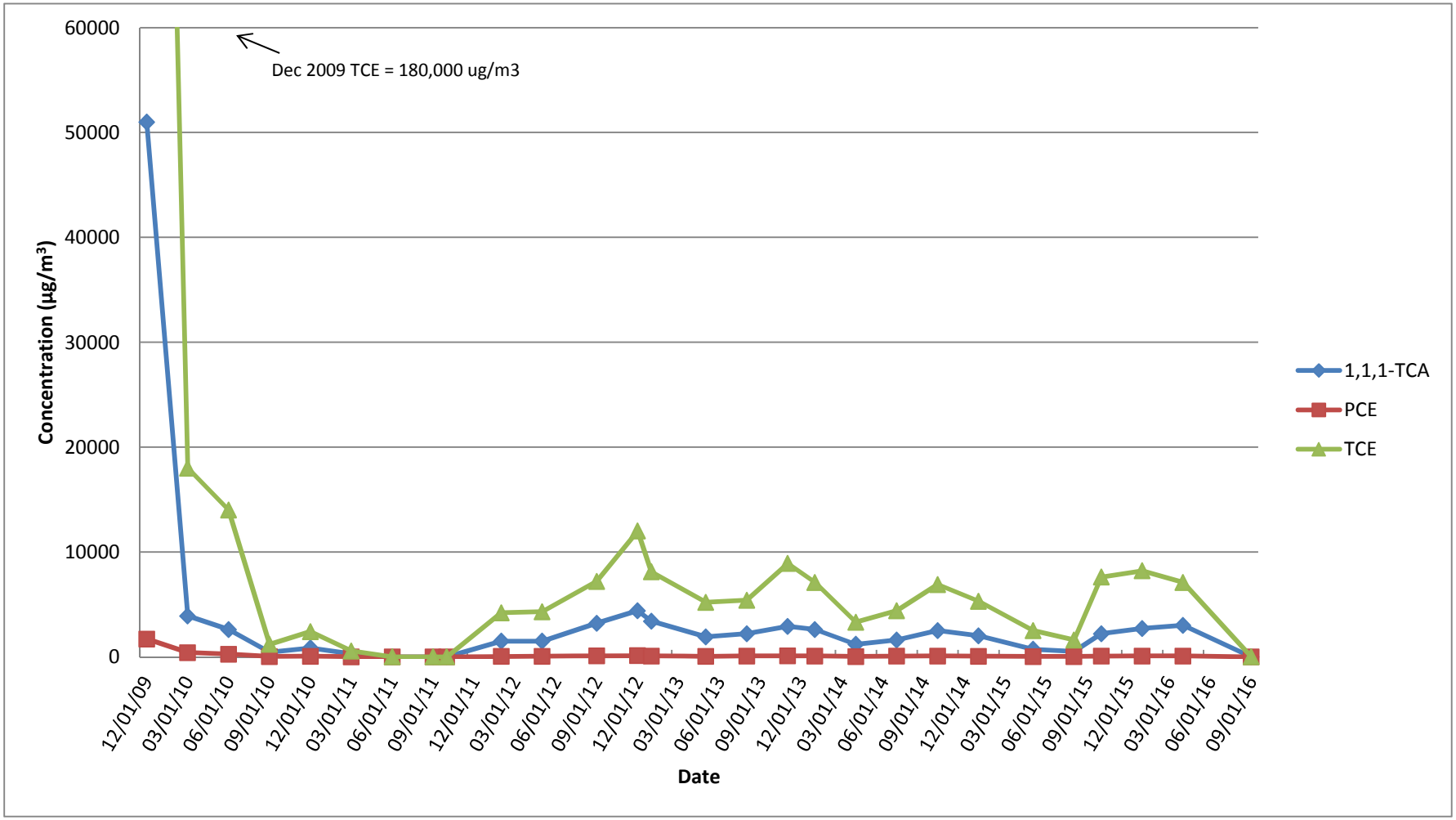
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Vapor Concentration Trends of Select and Total VOCs
SVEWs

COMBINED INFLUENT



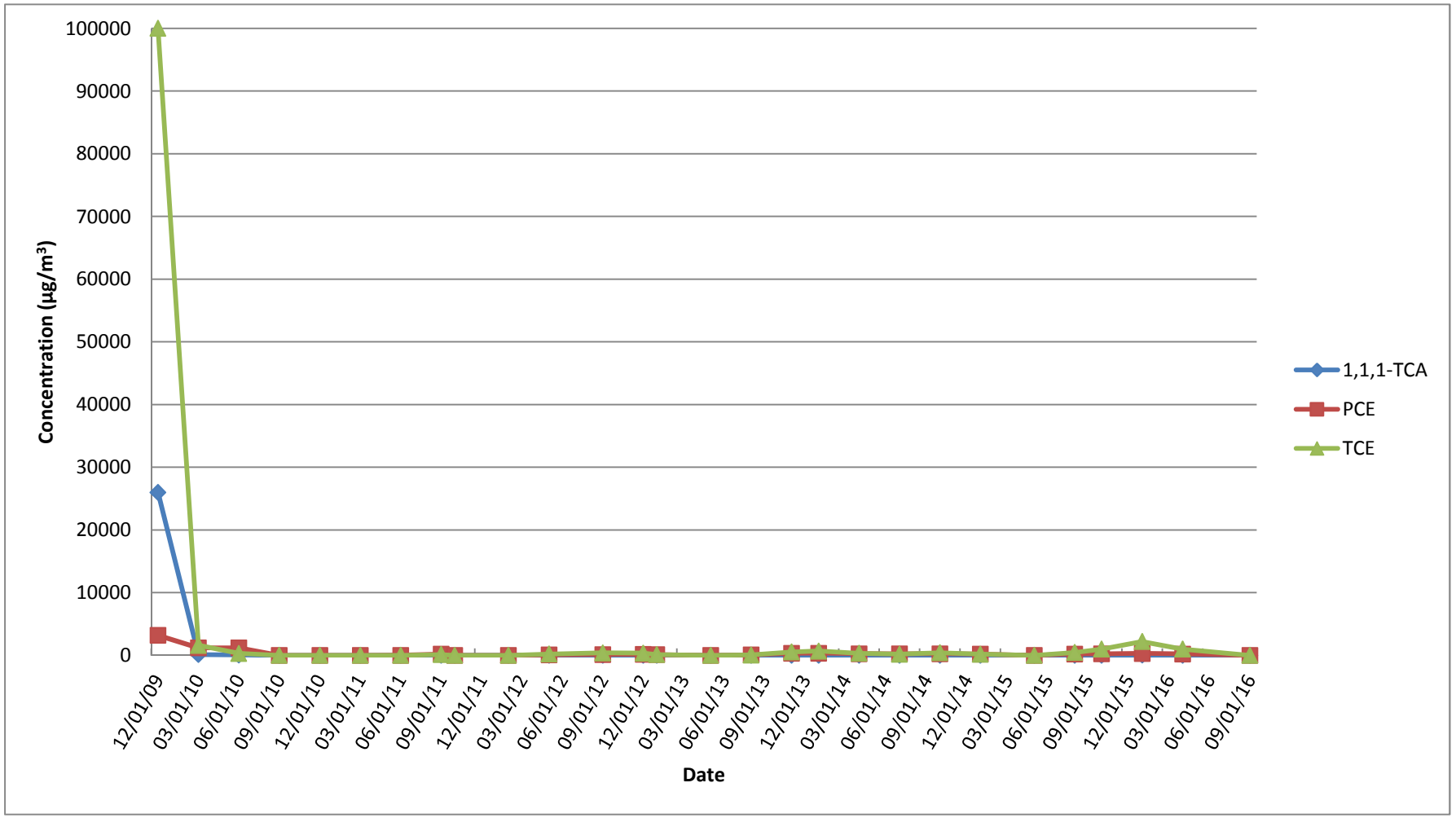
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-101I



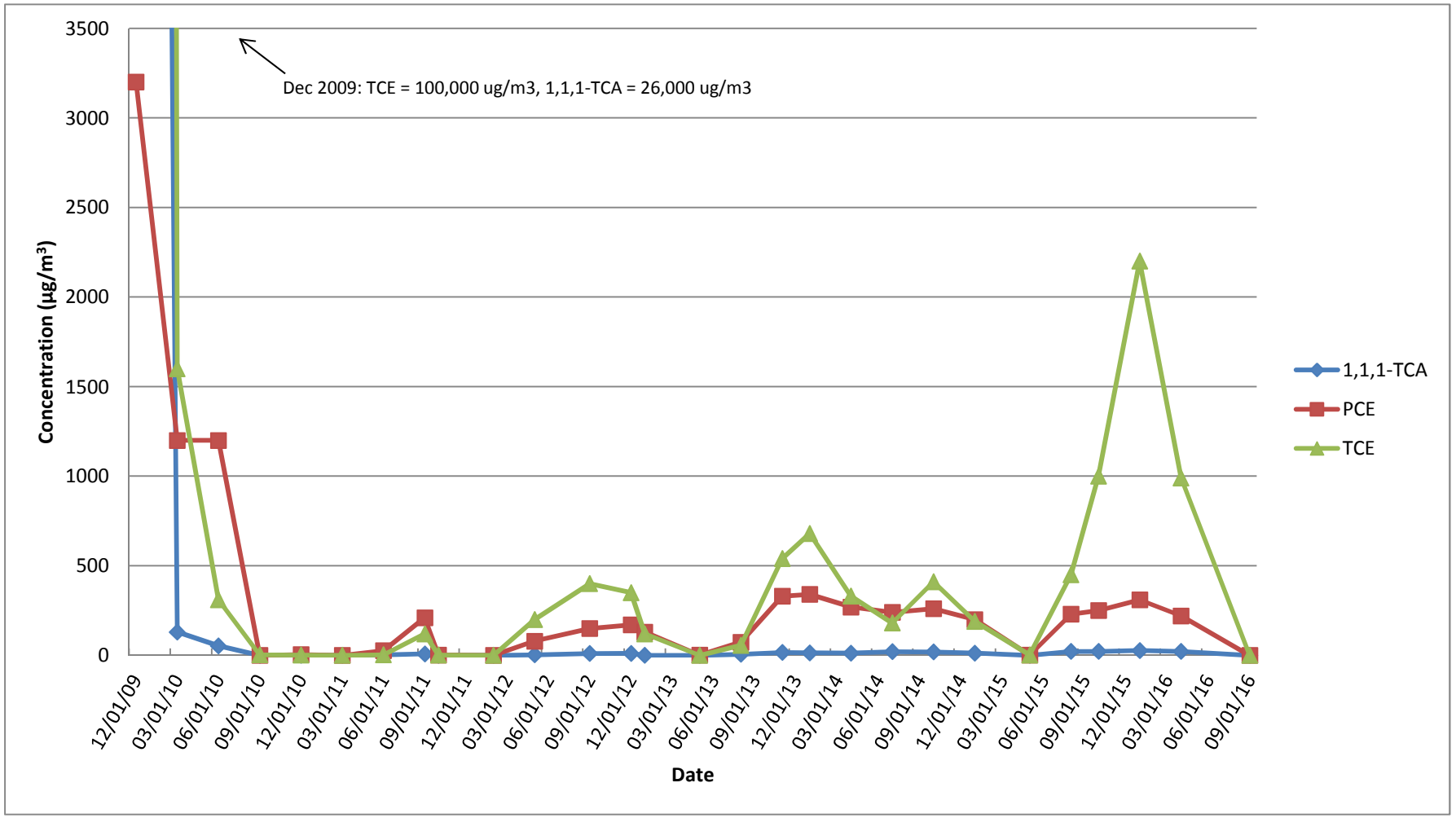
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-101D



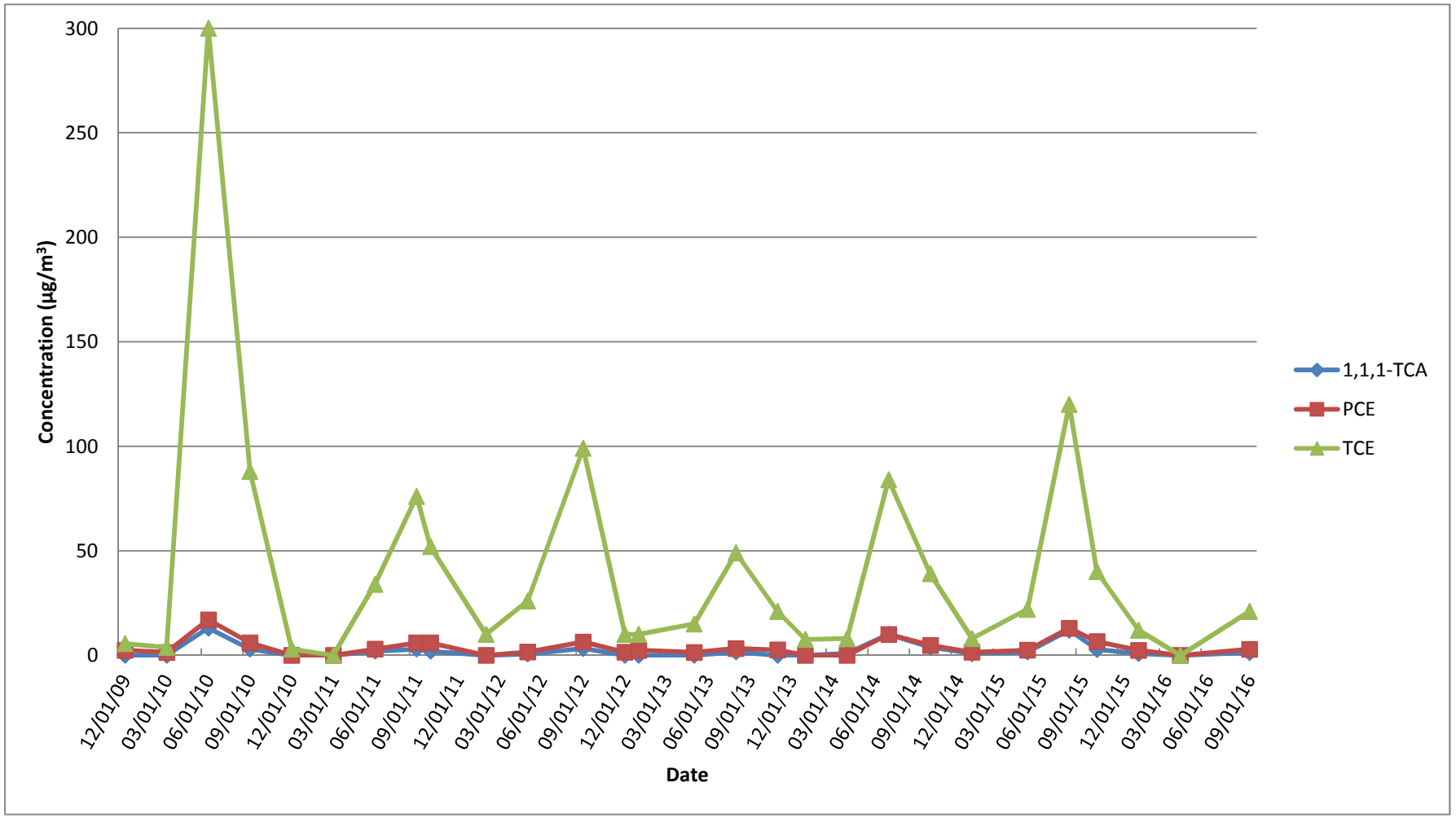
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-101D (smaller scale)



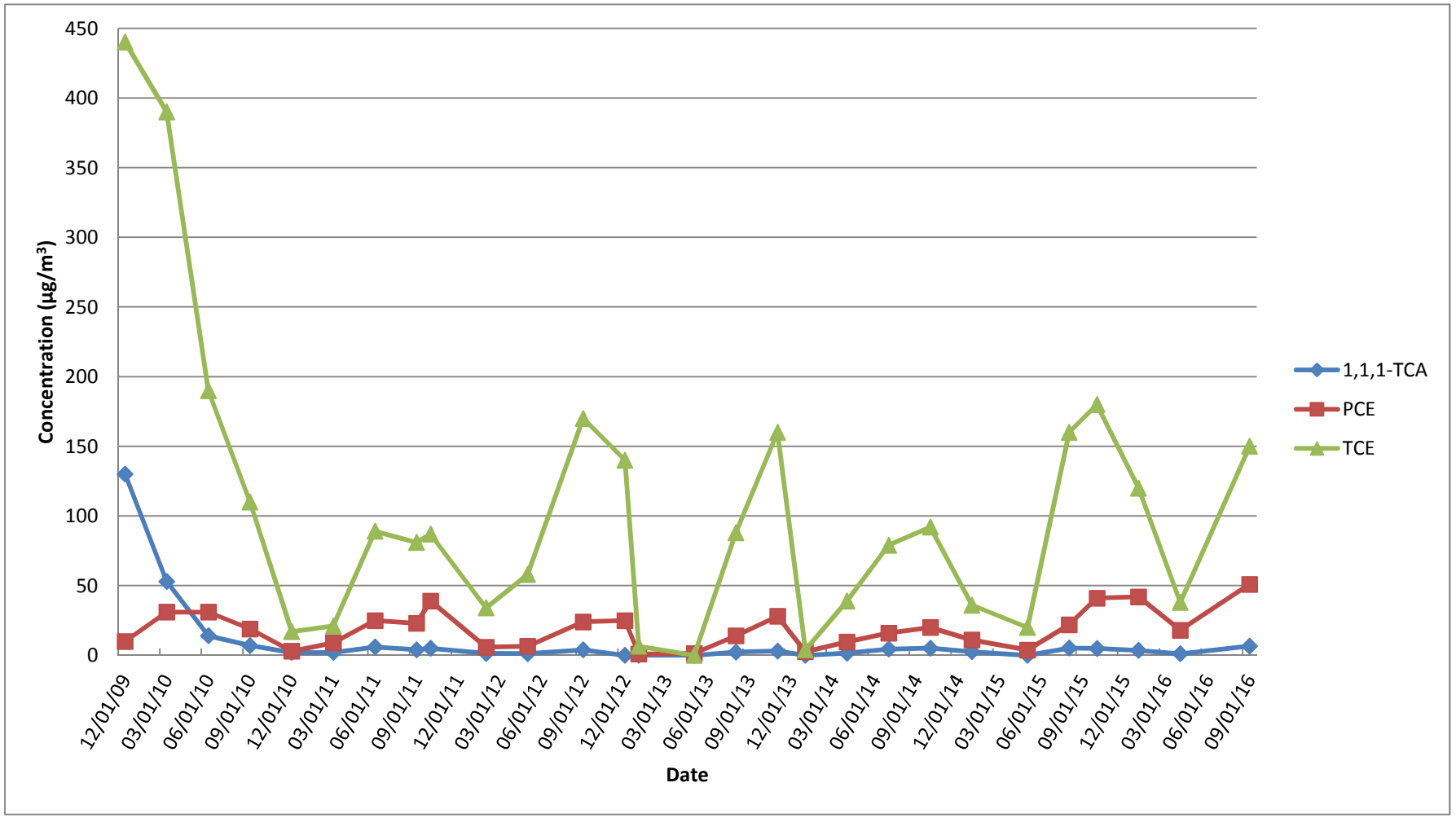
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV102I



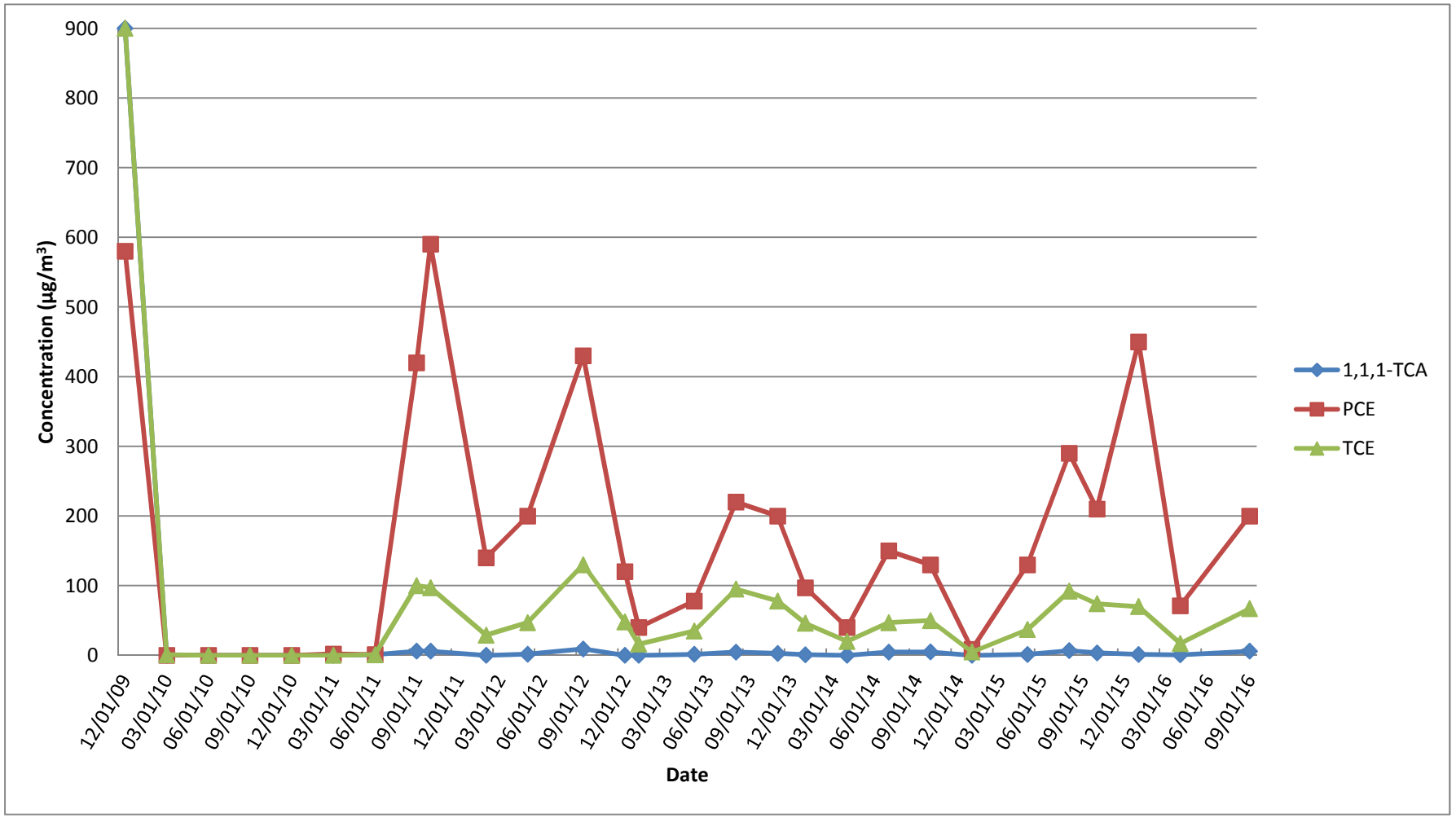
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-102D



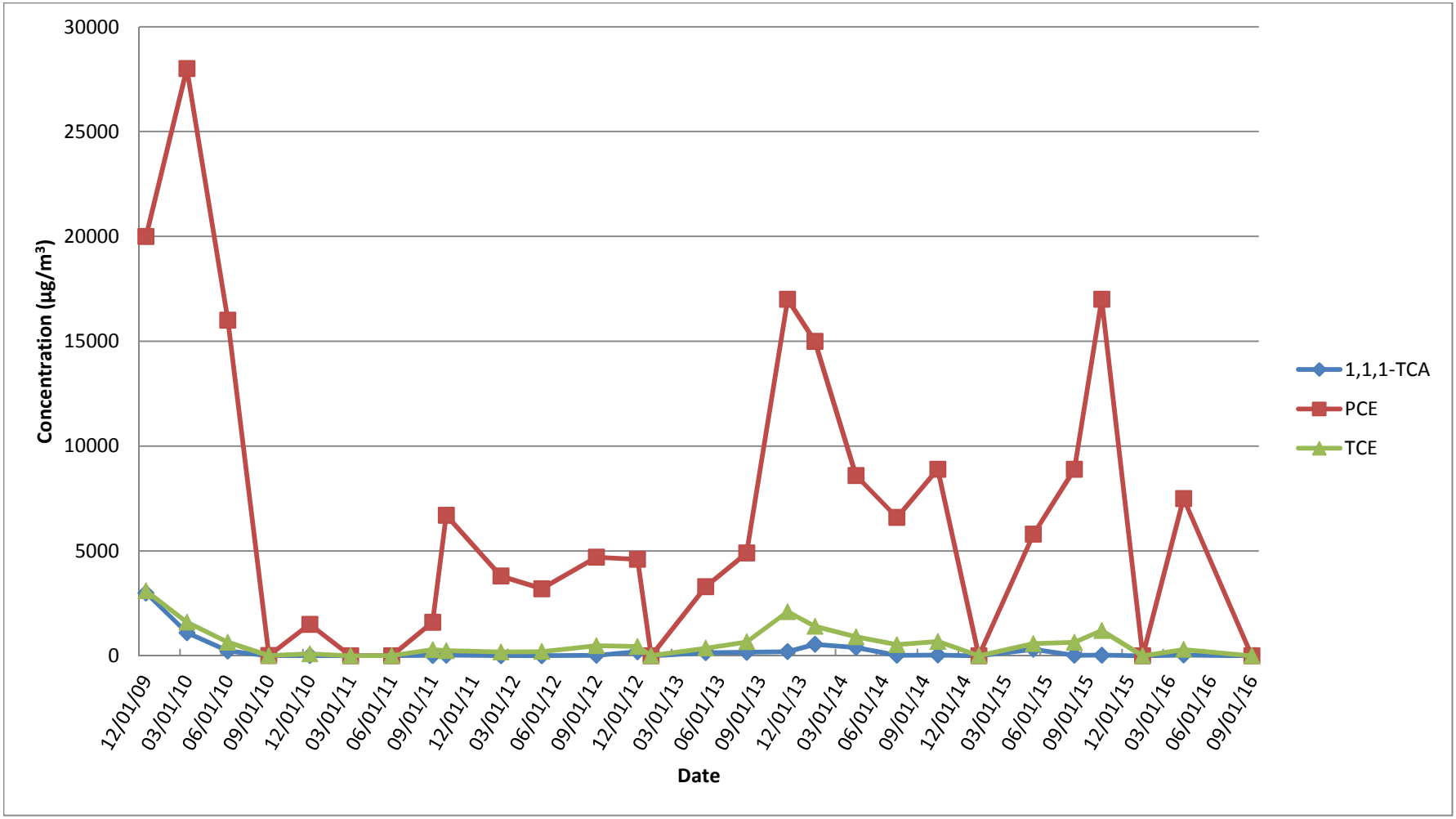
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-103I



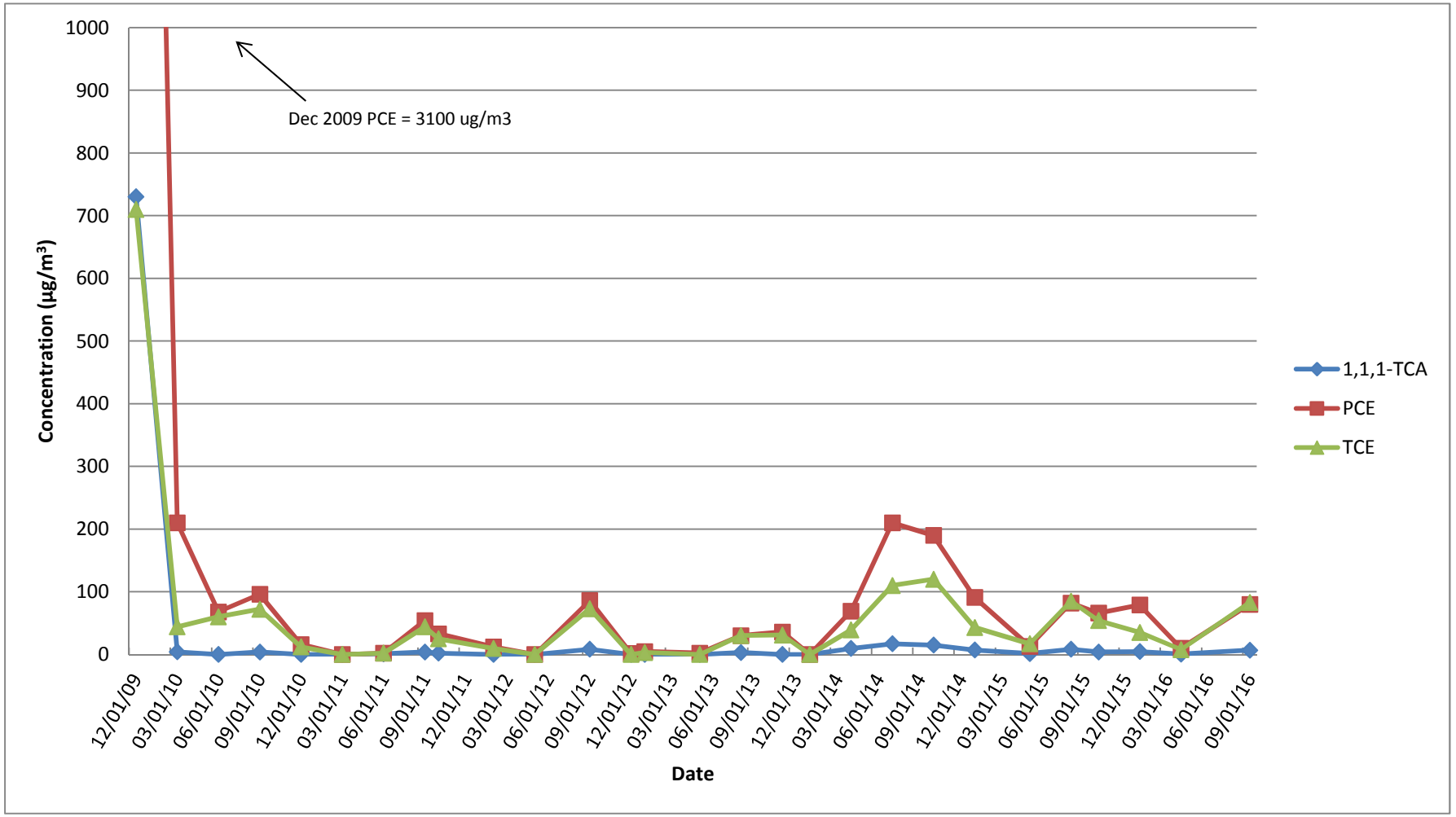
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV103D



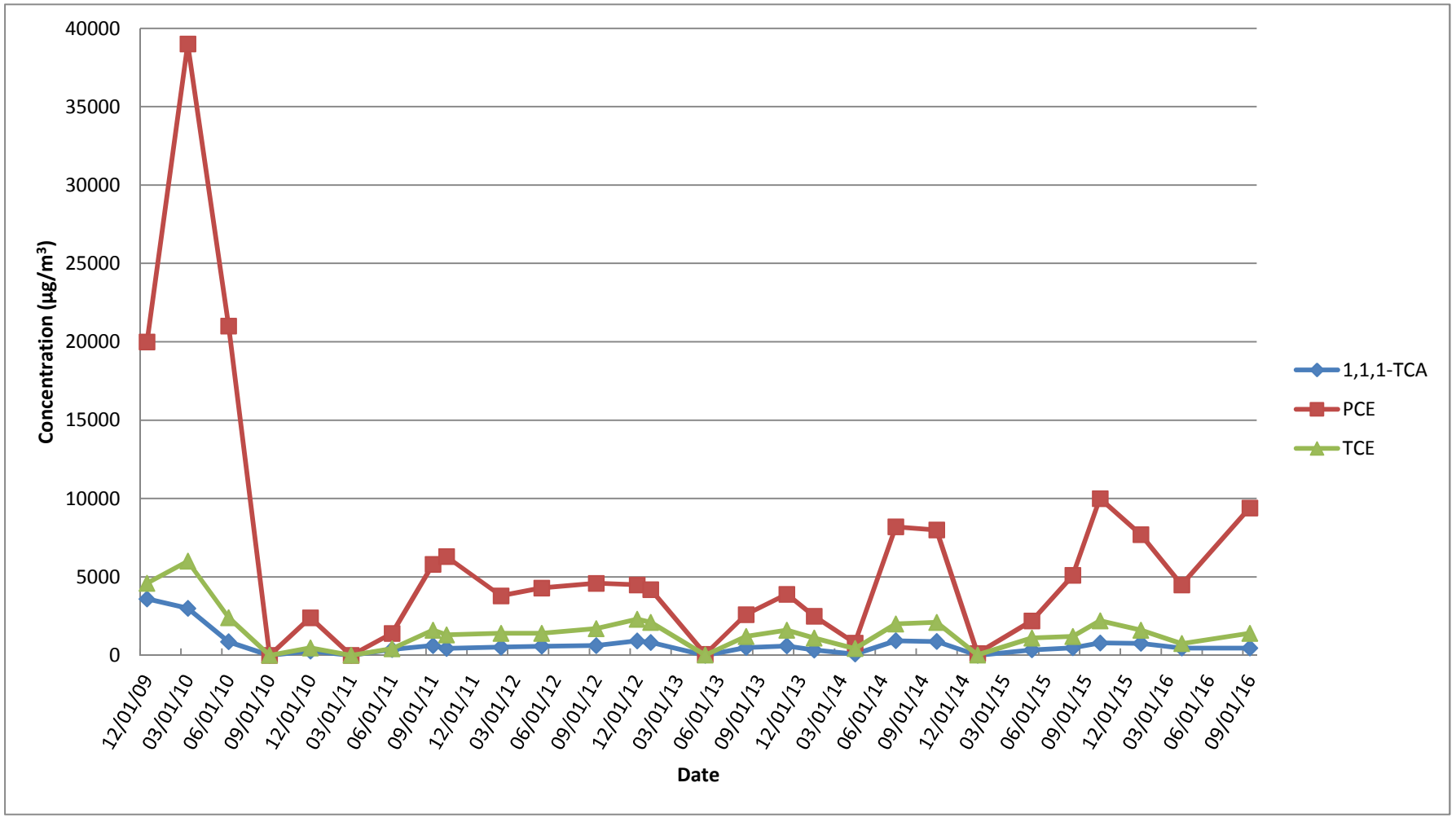
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV104I



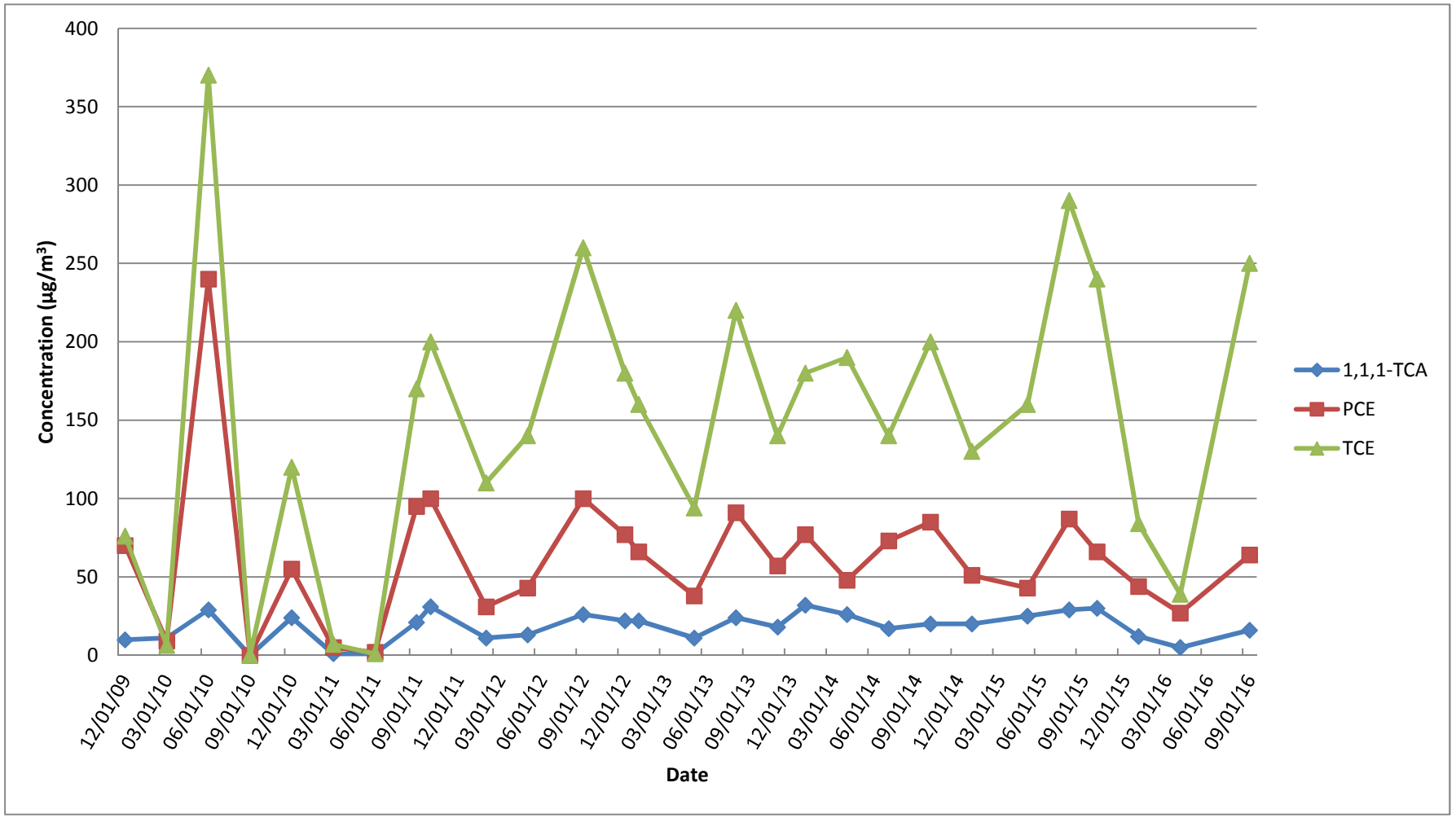
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-104D



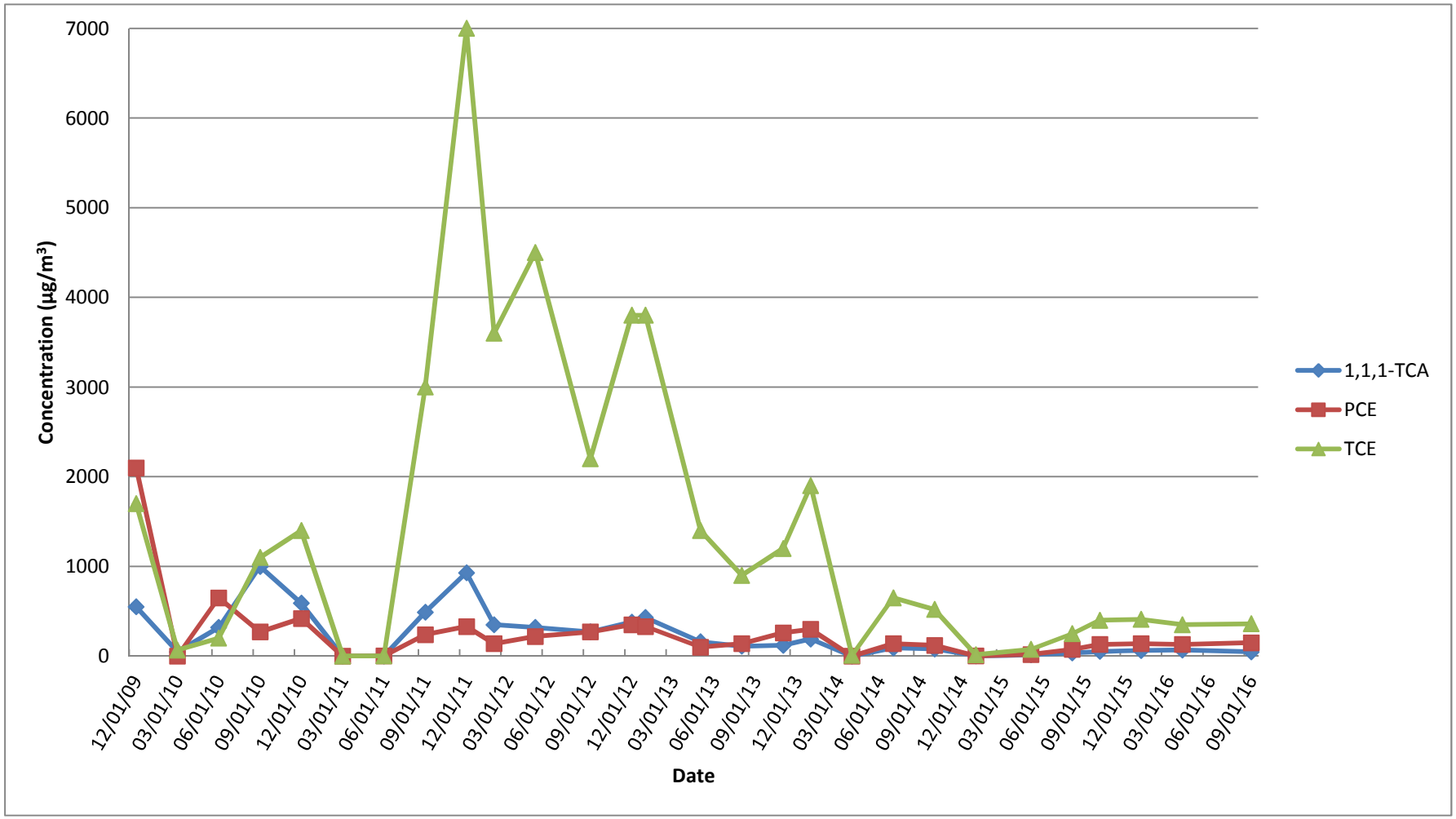
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-105I



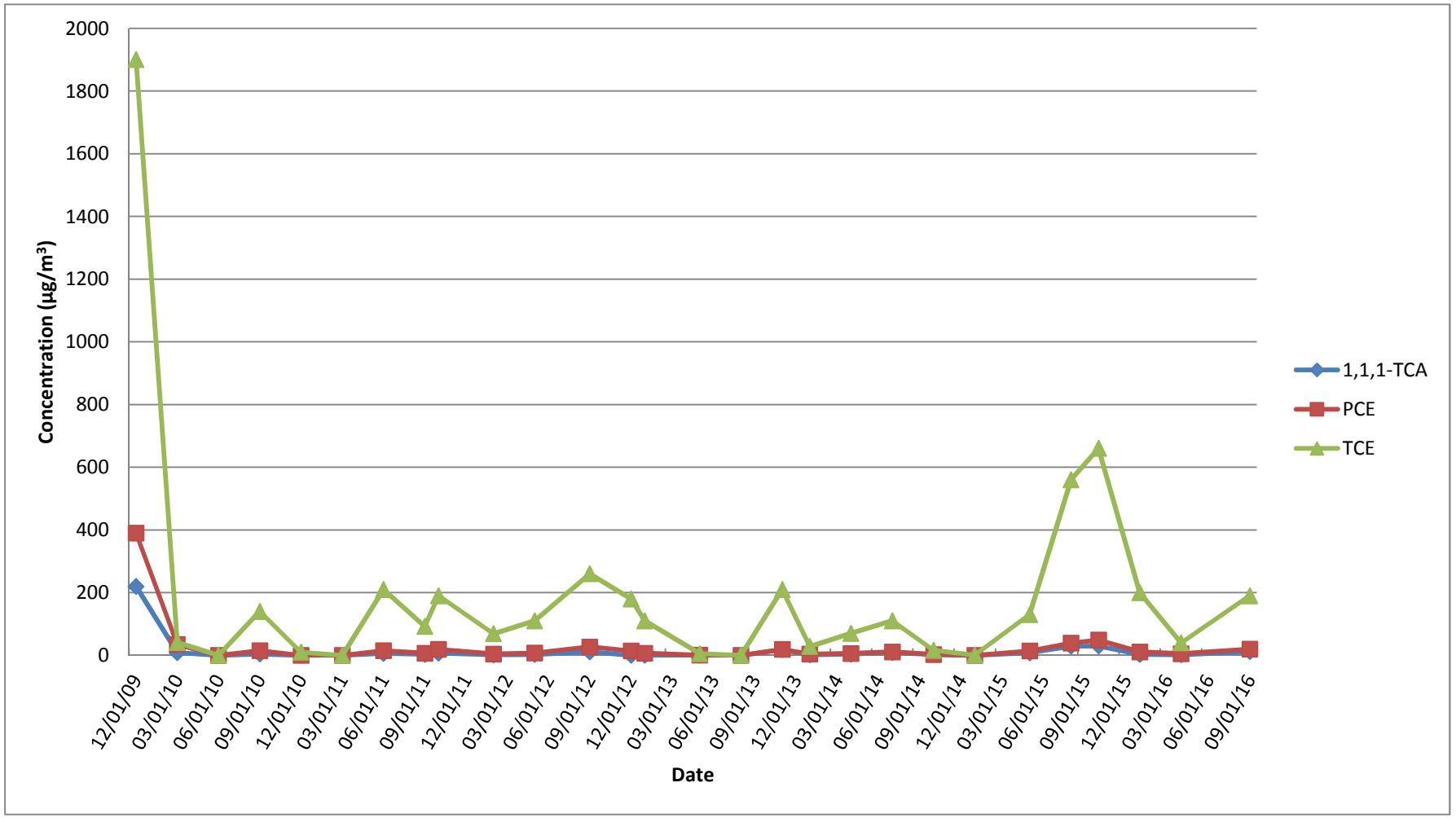
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-105D



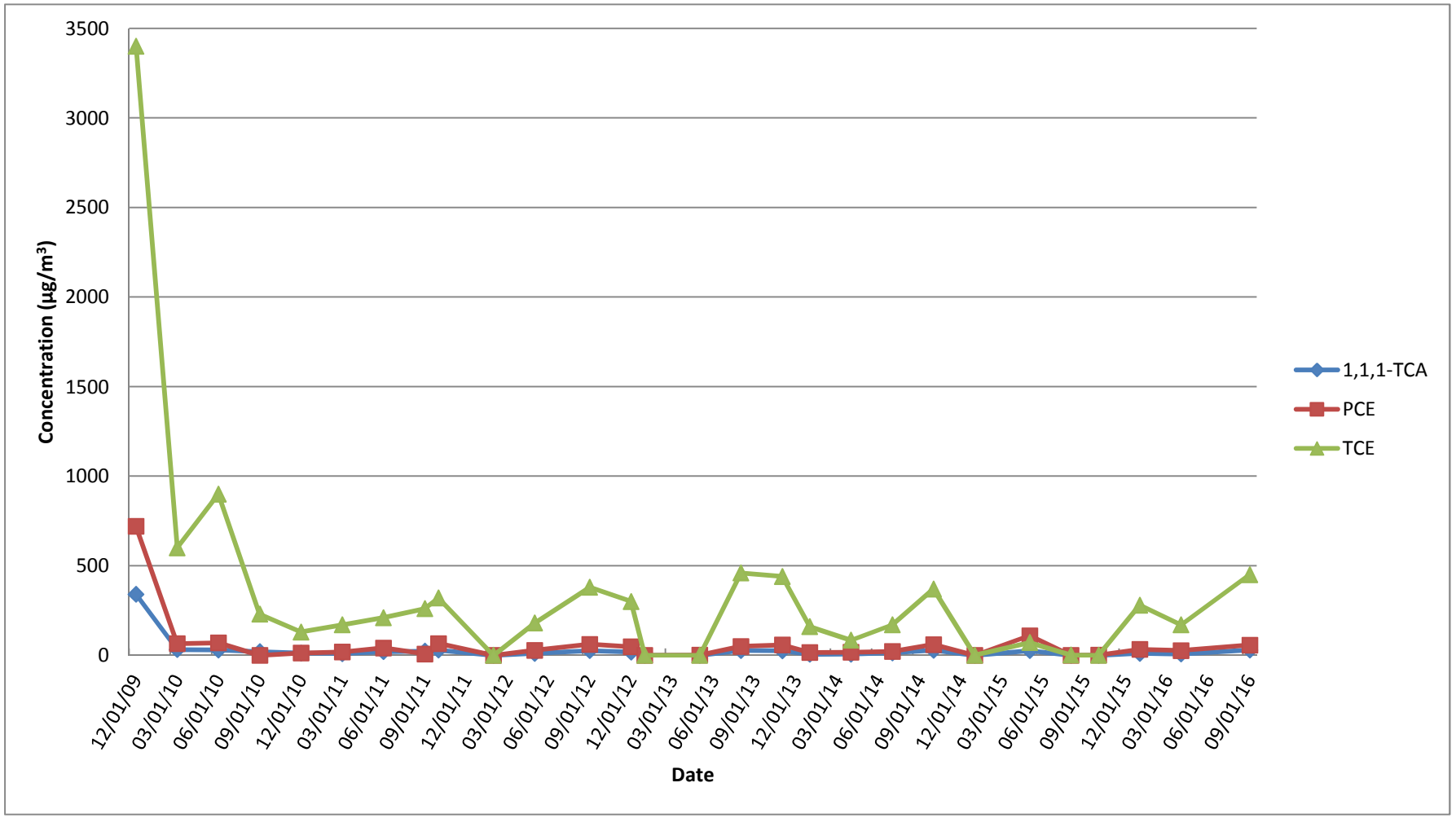
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-106I



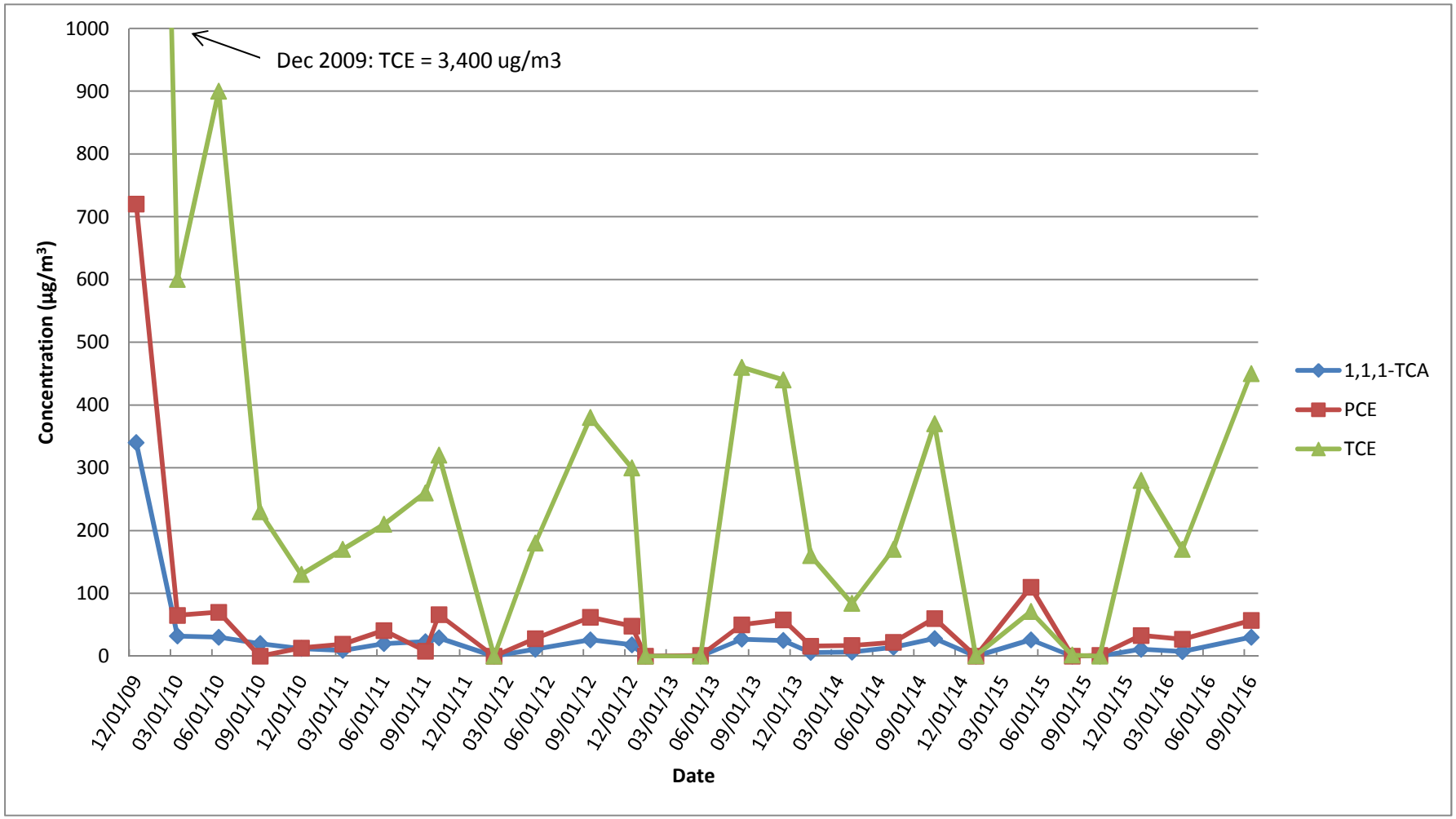
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

SV-106D



Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVEWs

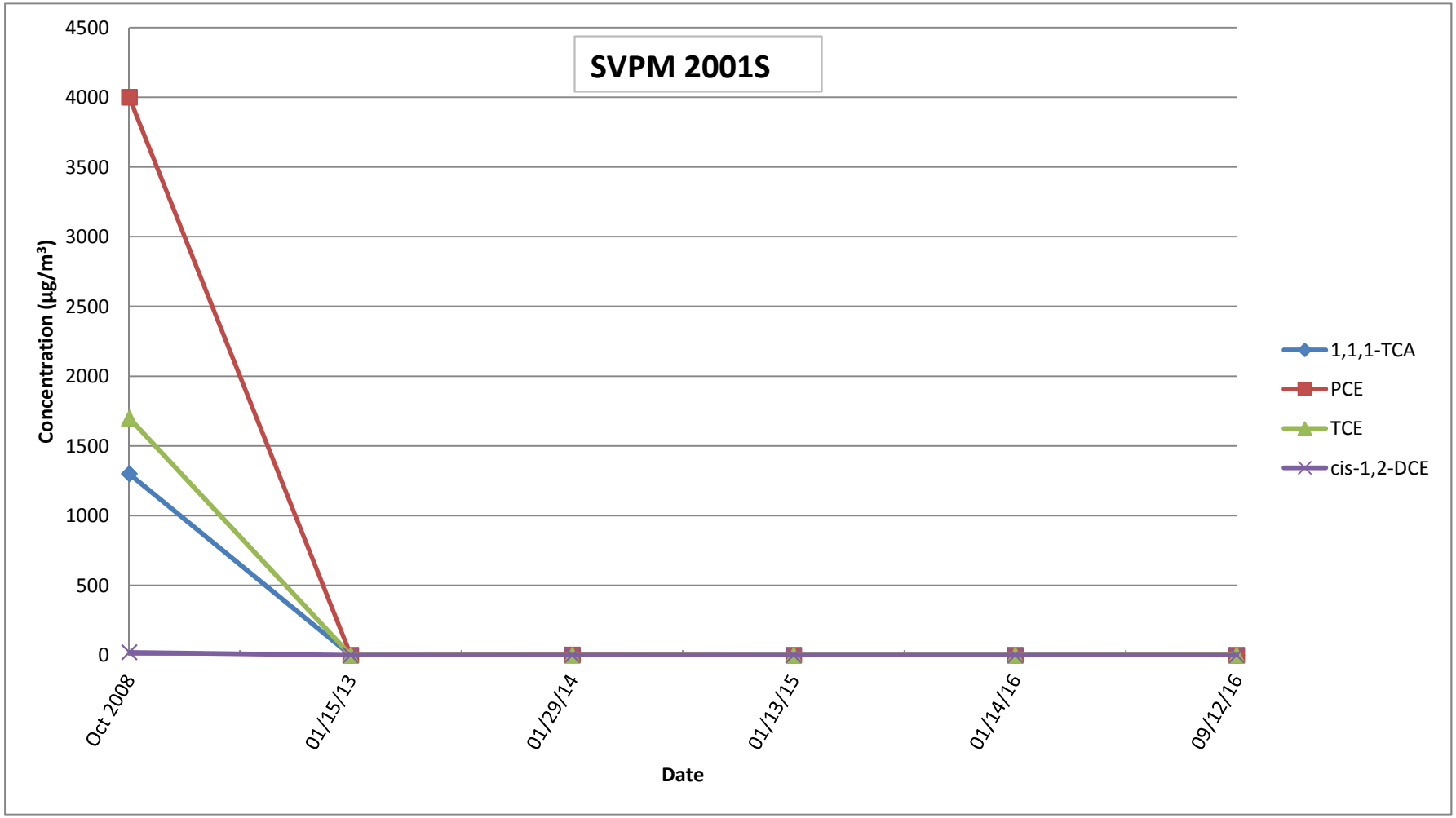
SV-106D (smaller scale)



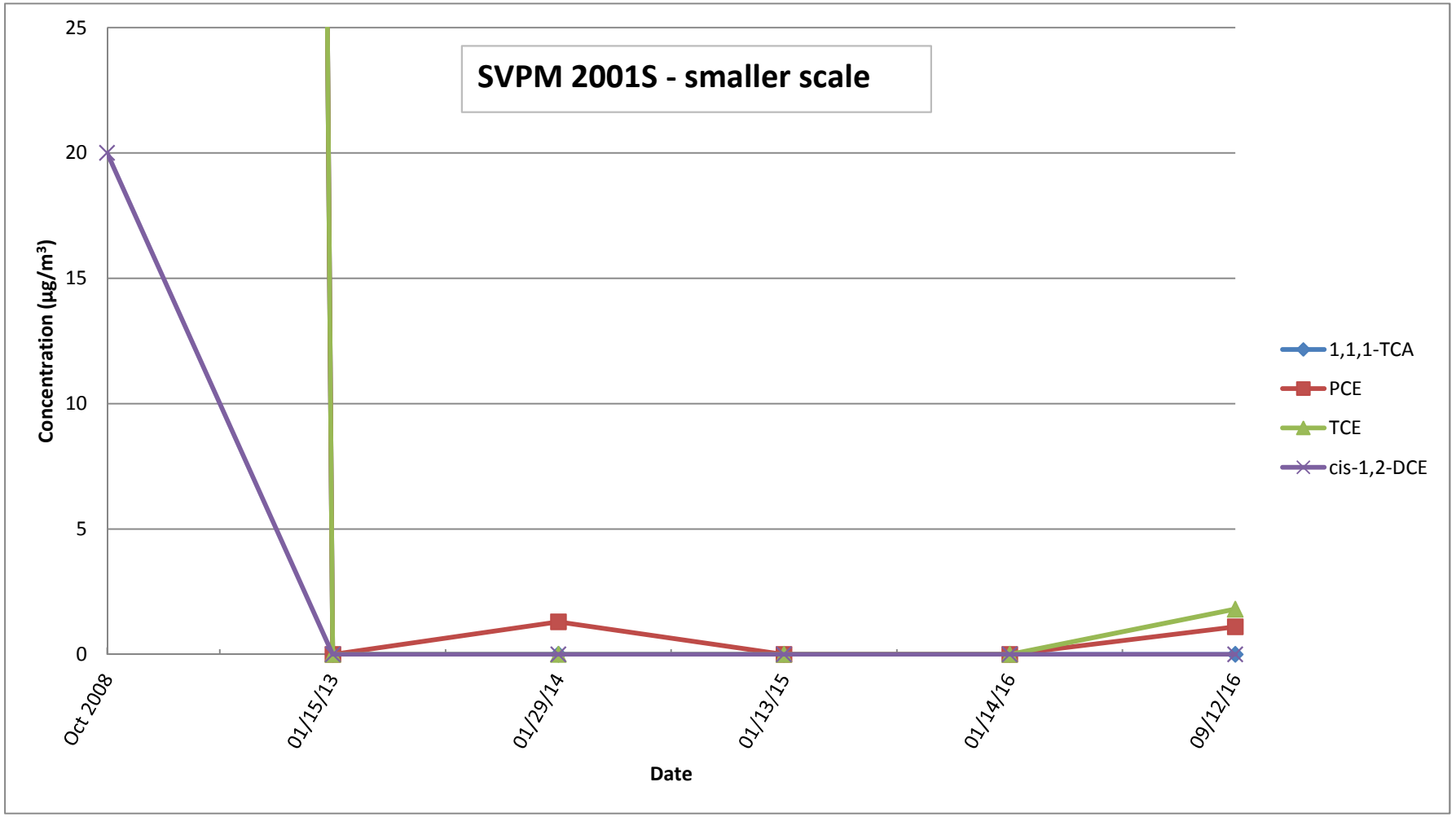
APPENDIX D

VAPOR CONCENTRATION TREND GRAPHS – SVPMs

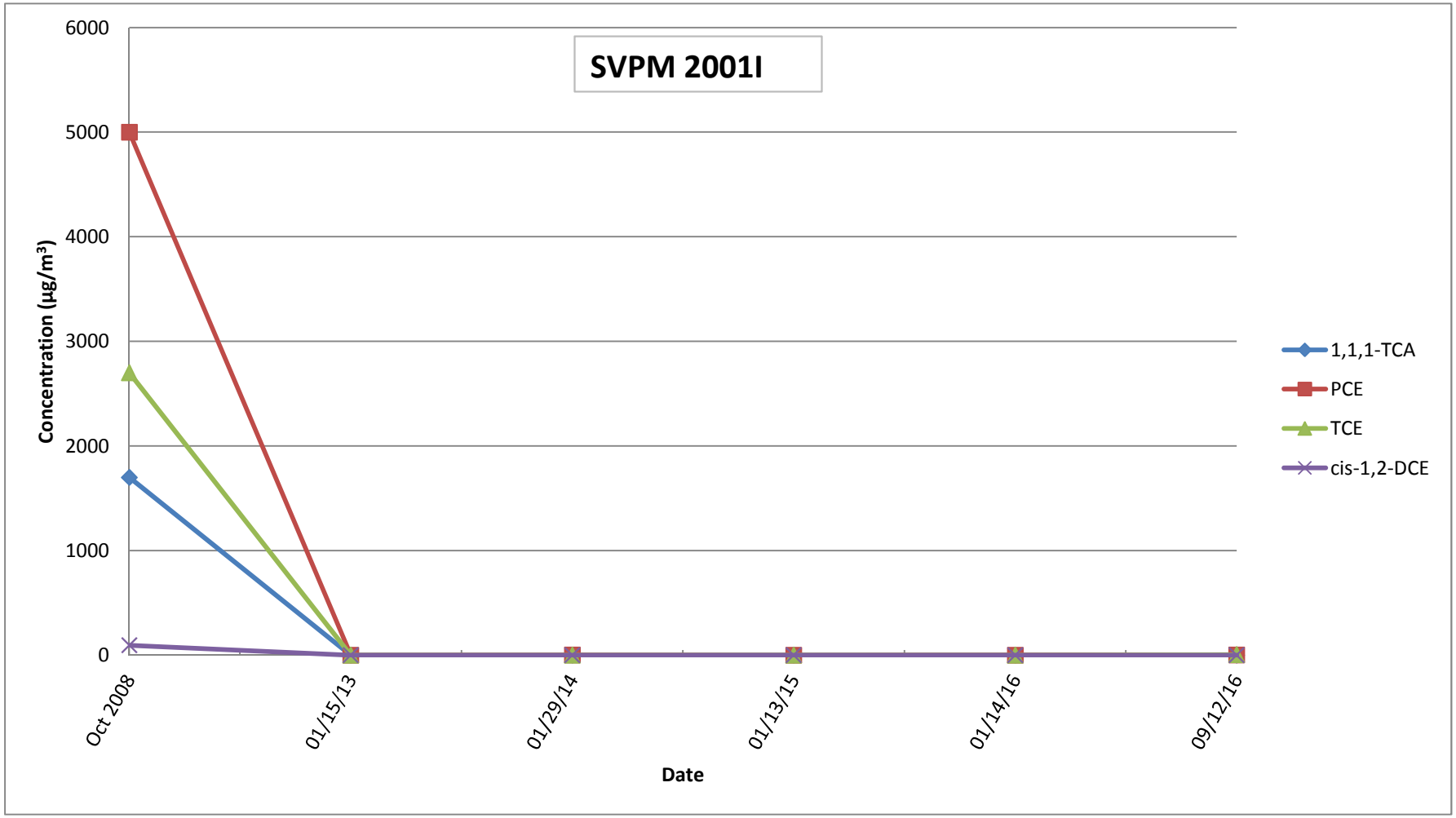
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVPMs



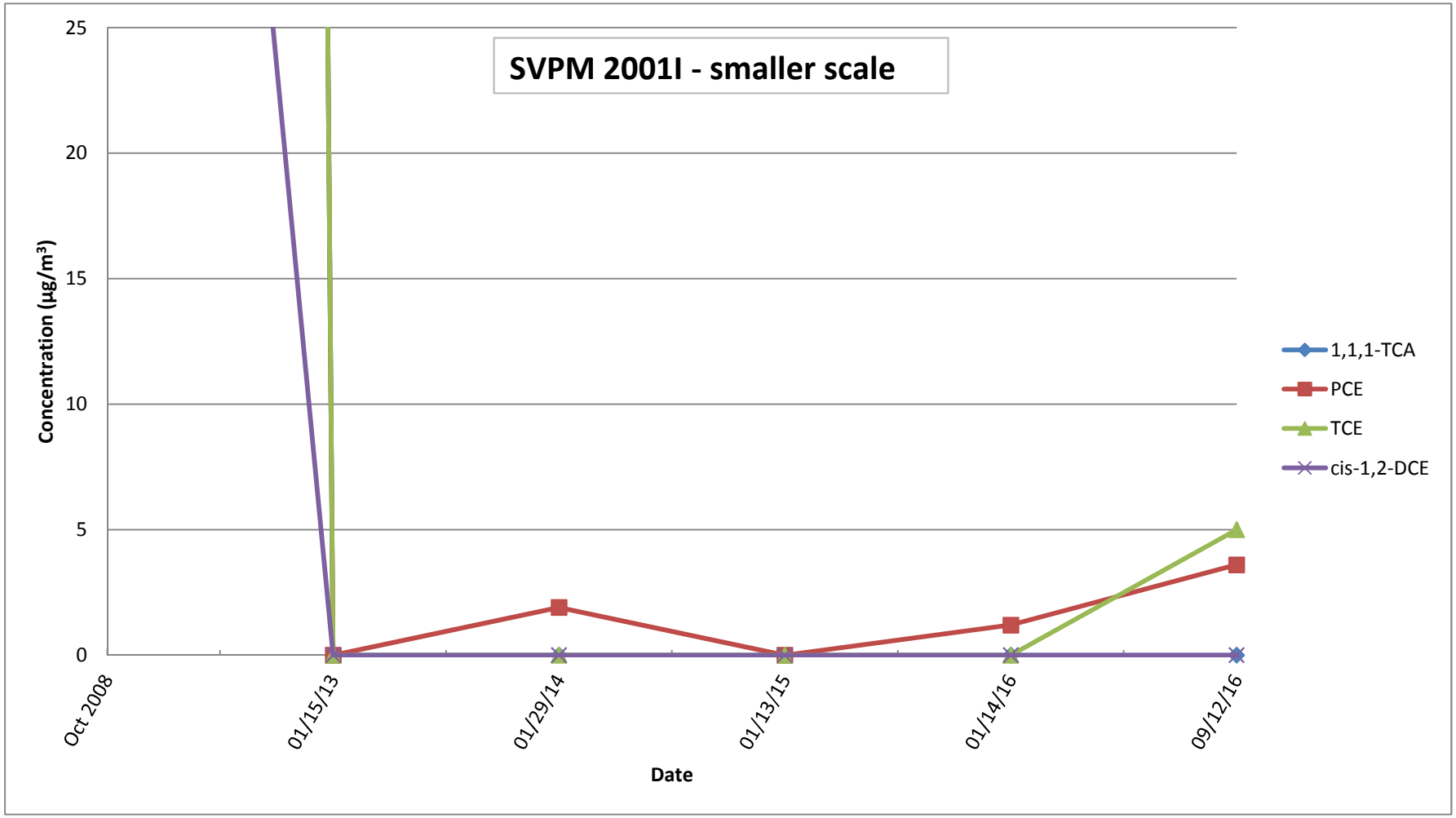
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVPMs



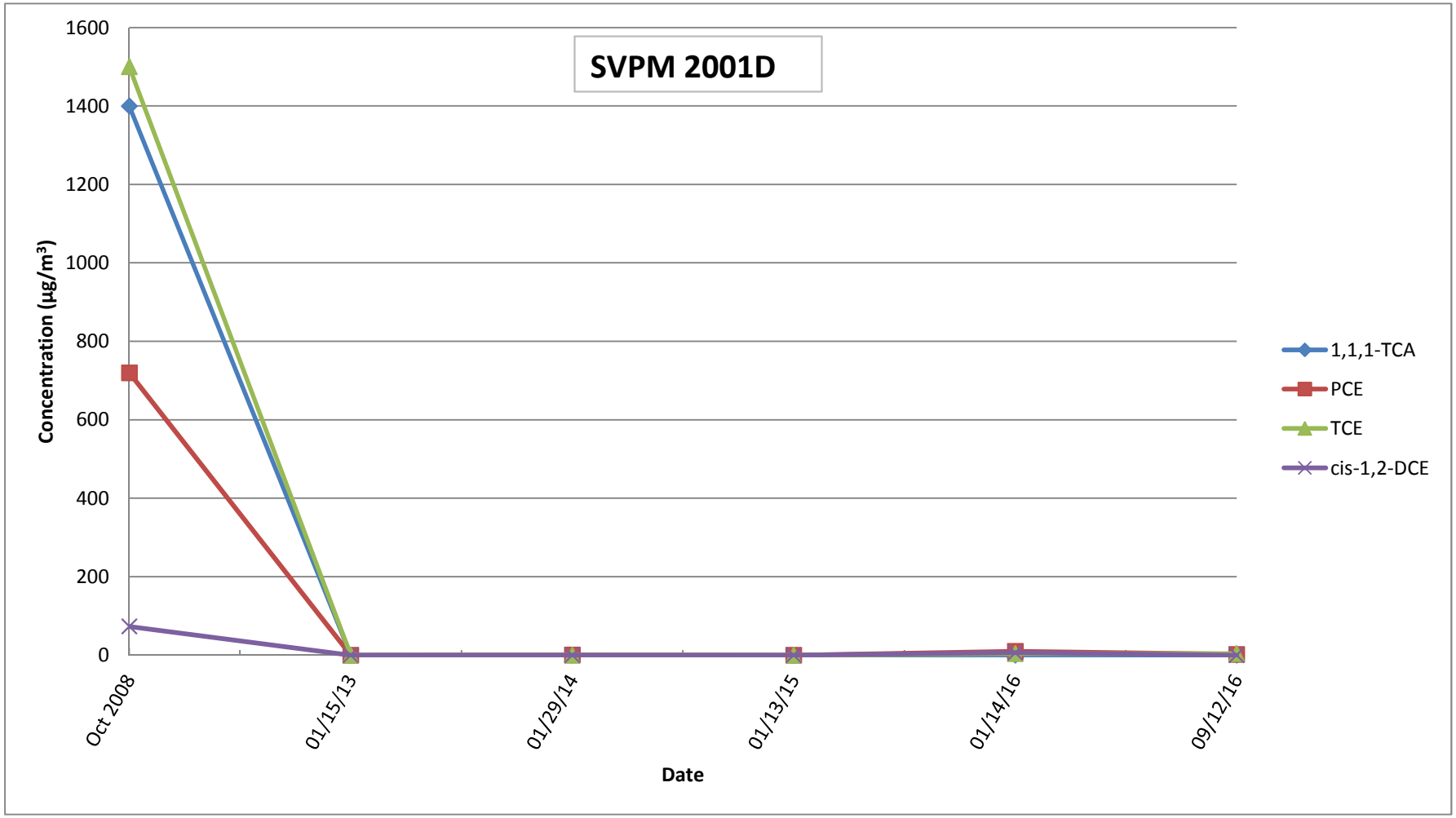
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVPMs



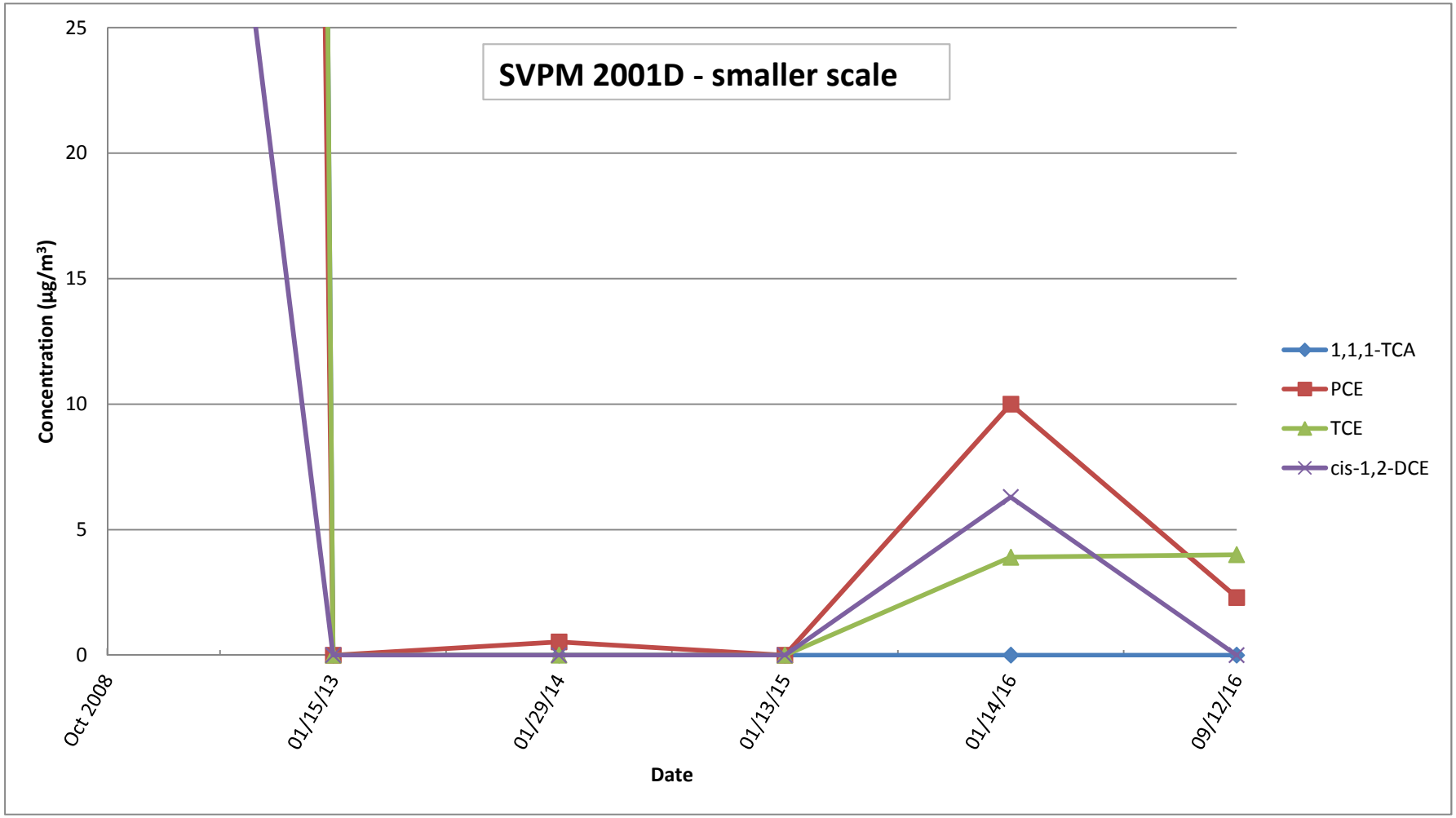
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVPMs



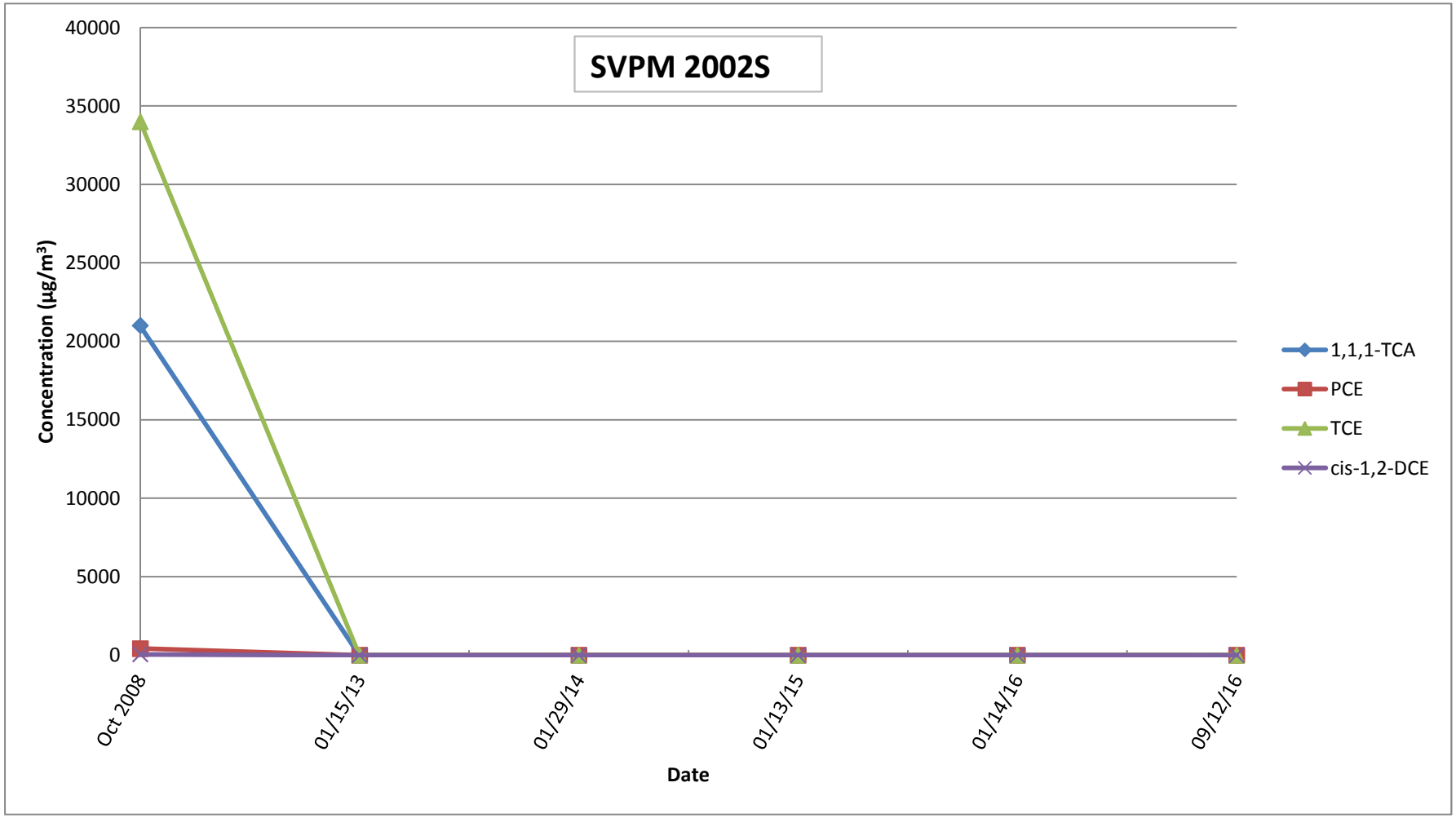
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVPMs



Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVPMs



Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Concentration Trends of Select VOCs
SVPMs



Soil Vapor Extraction Containment System
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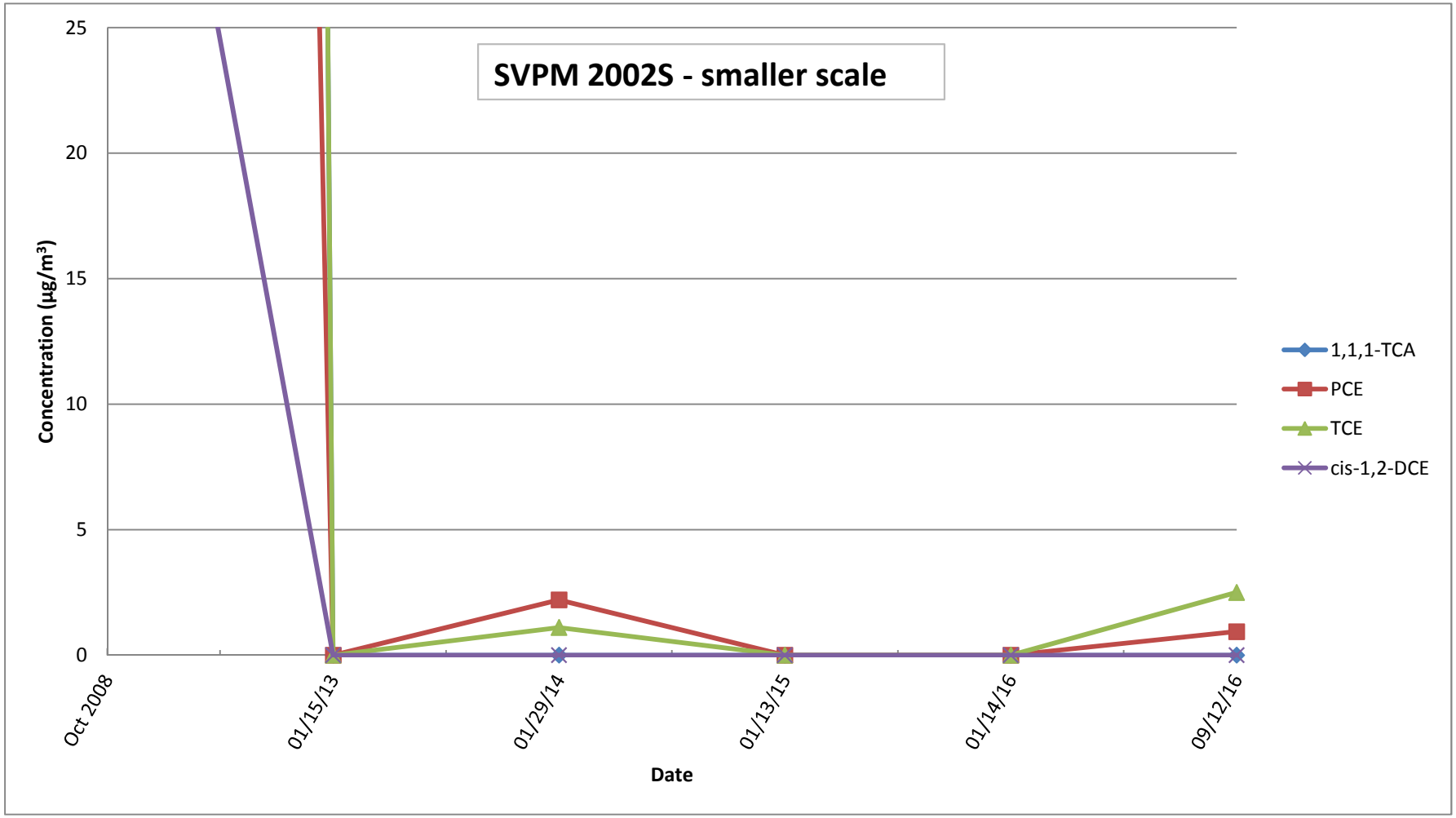

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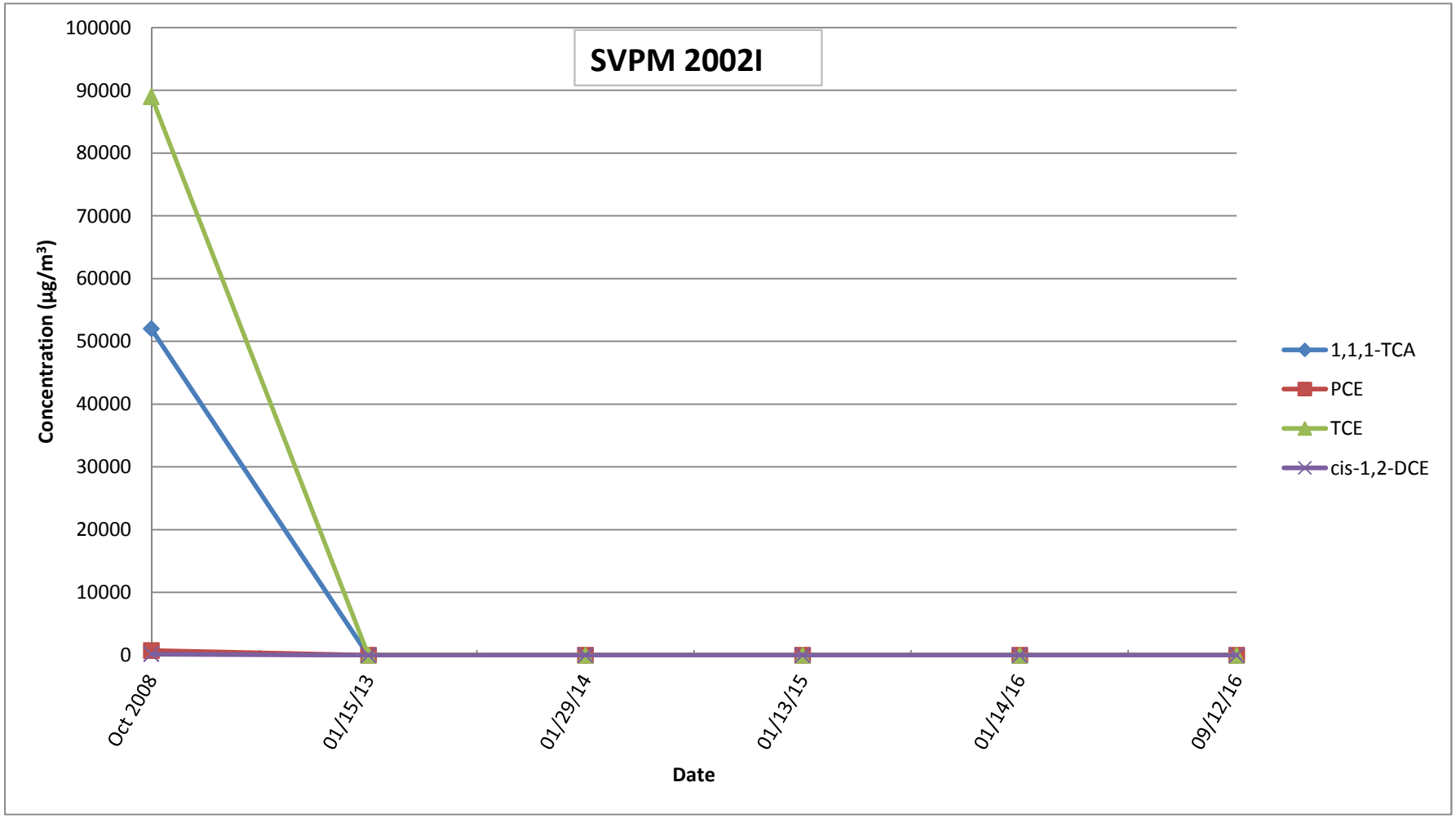

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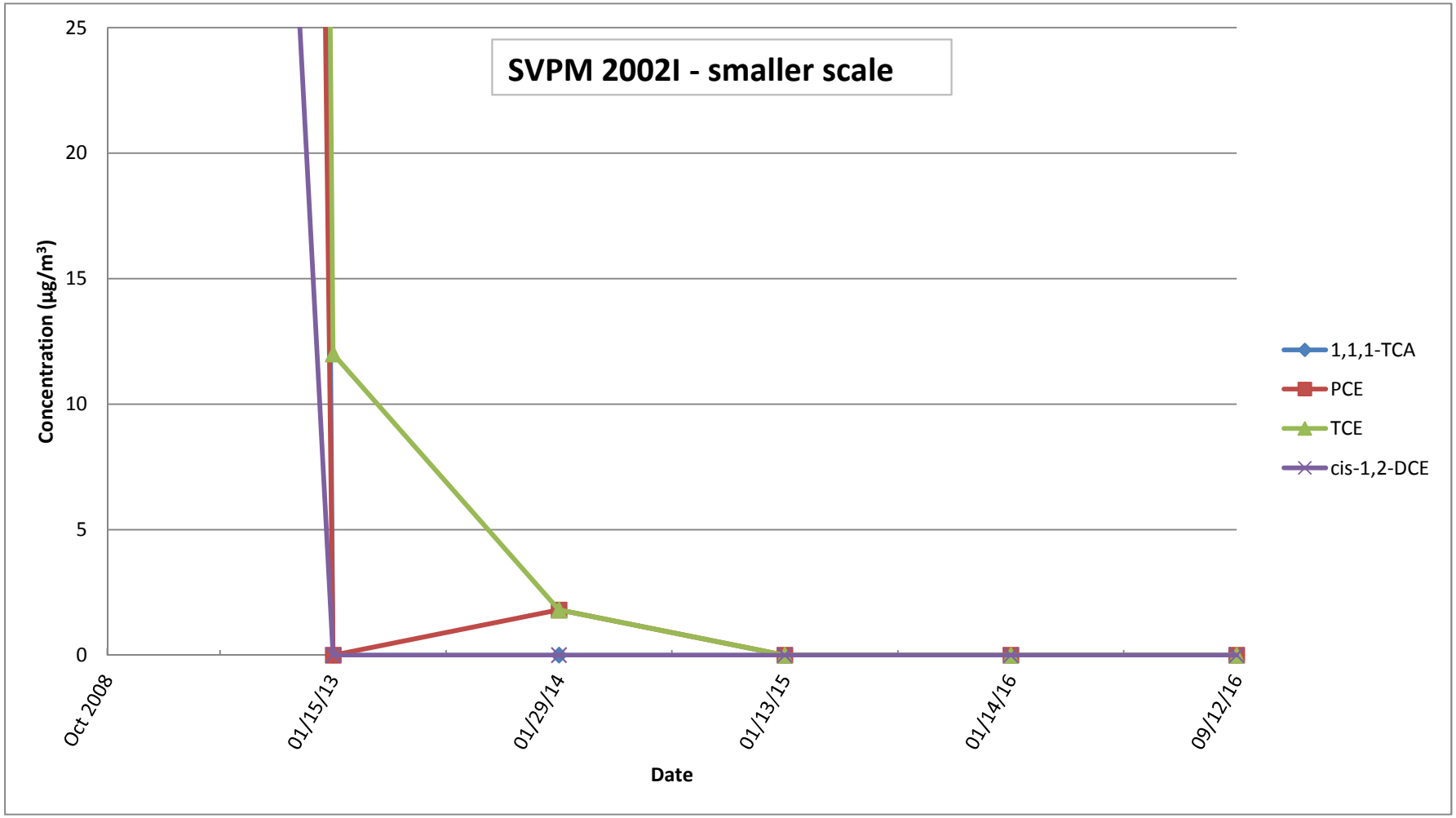

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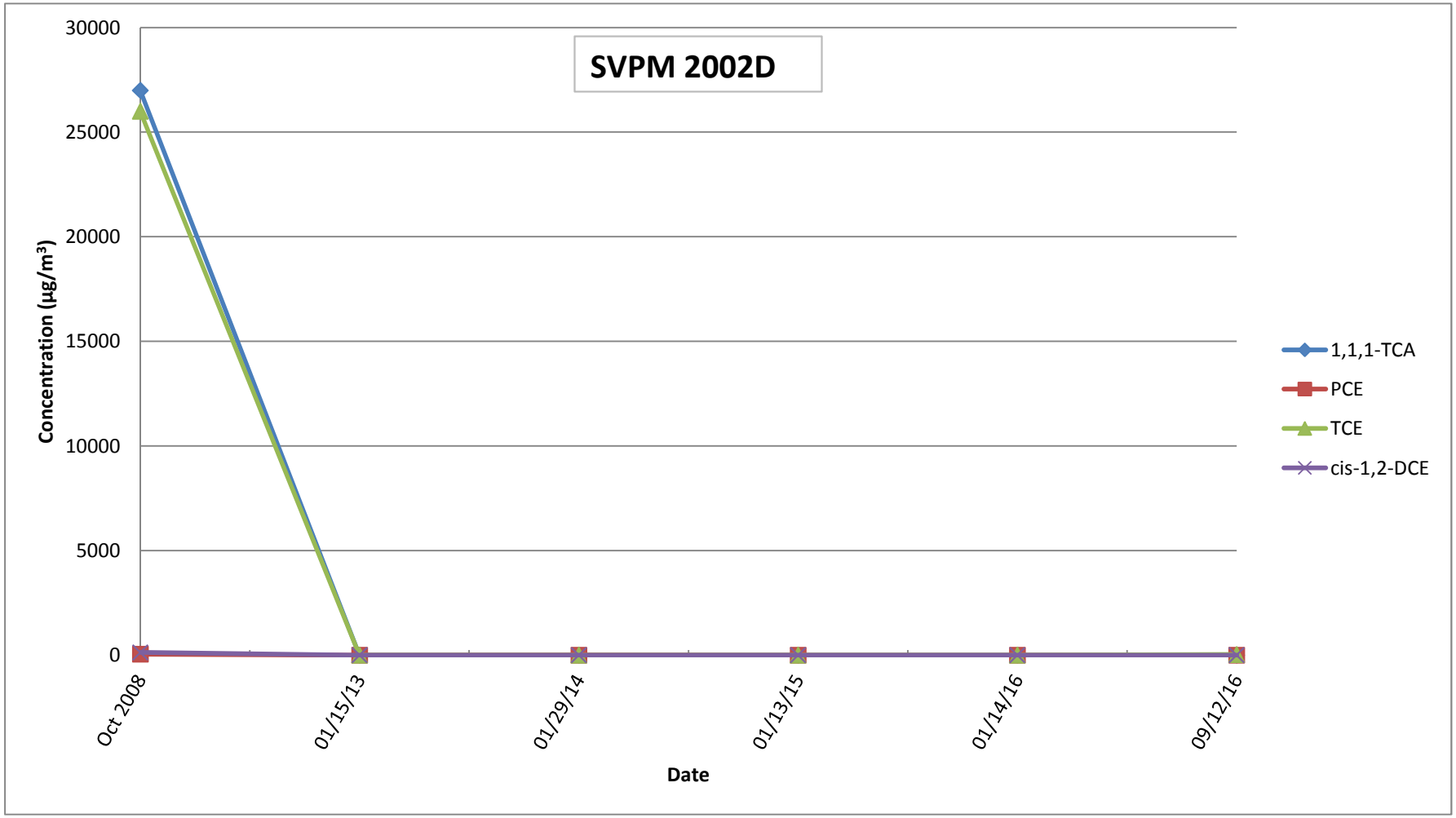

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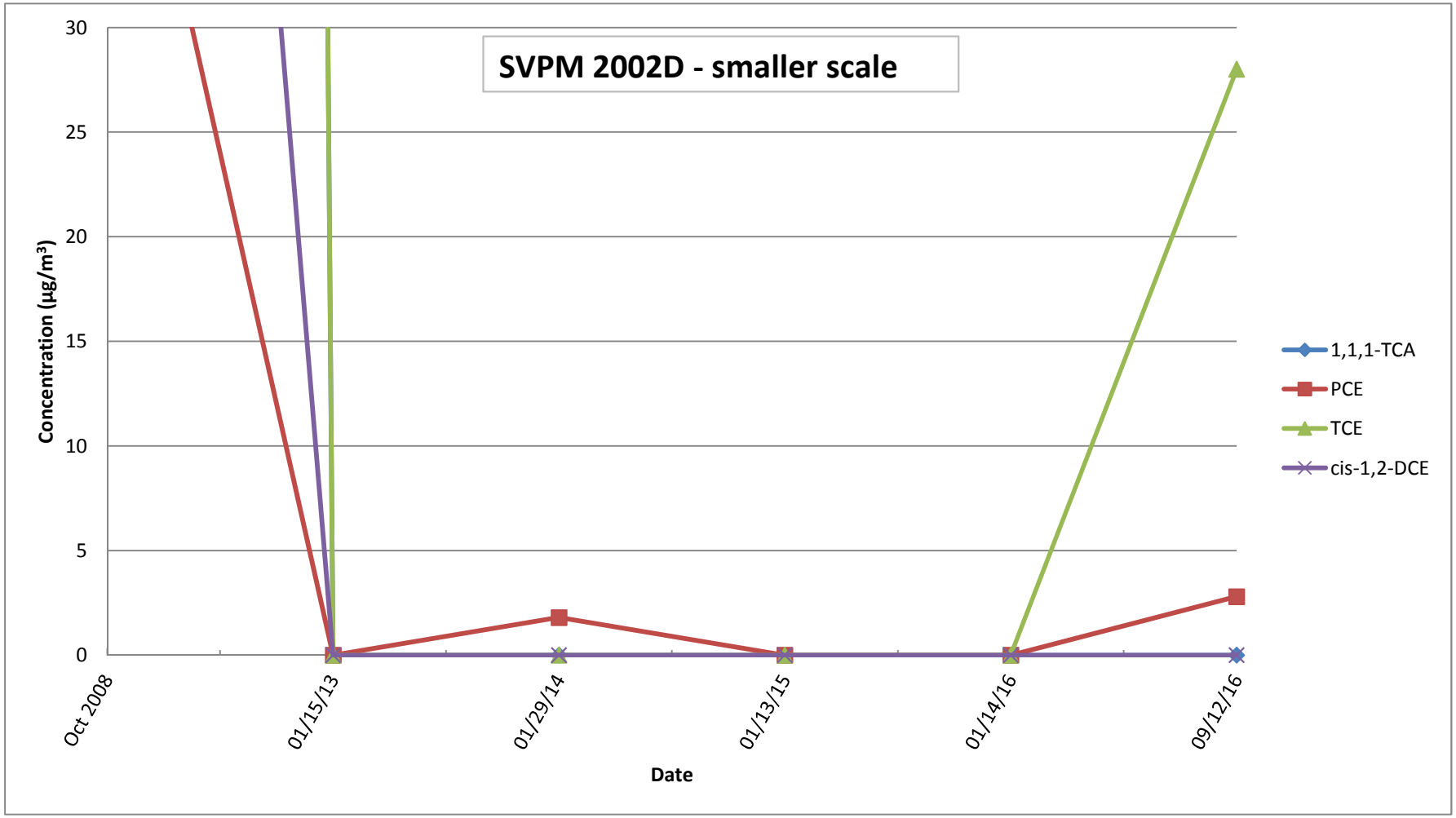

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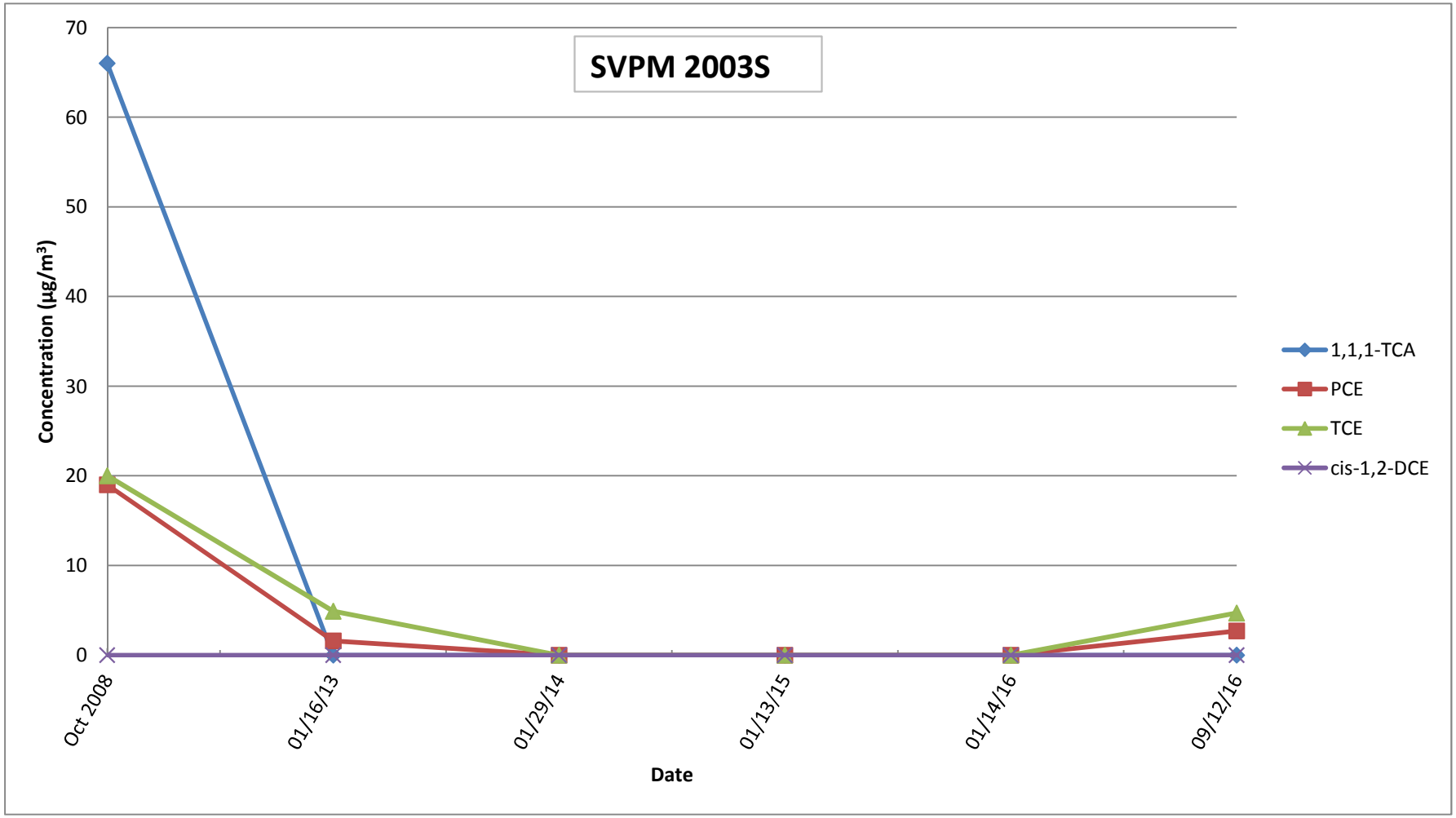

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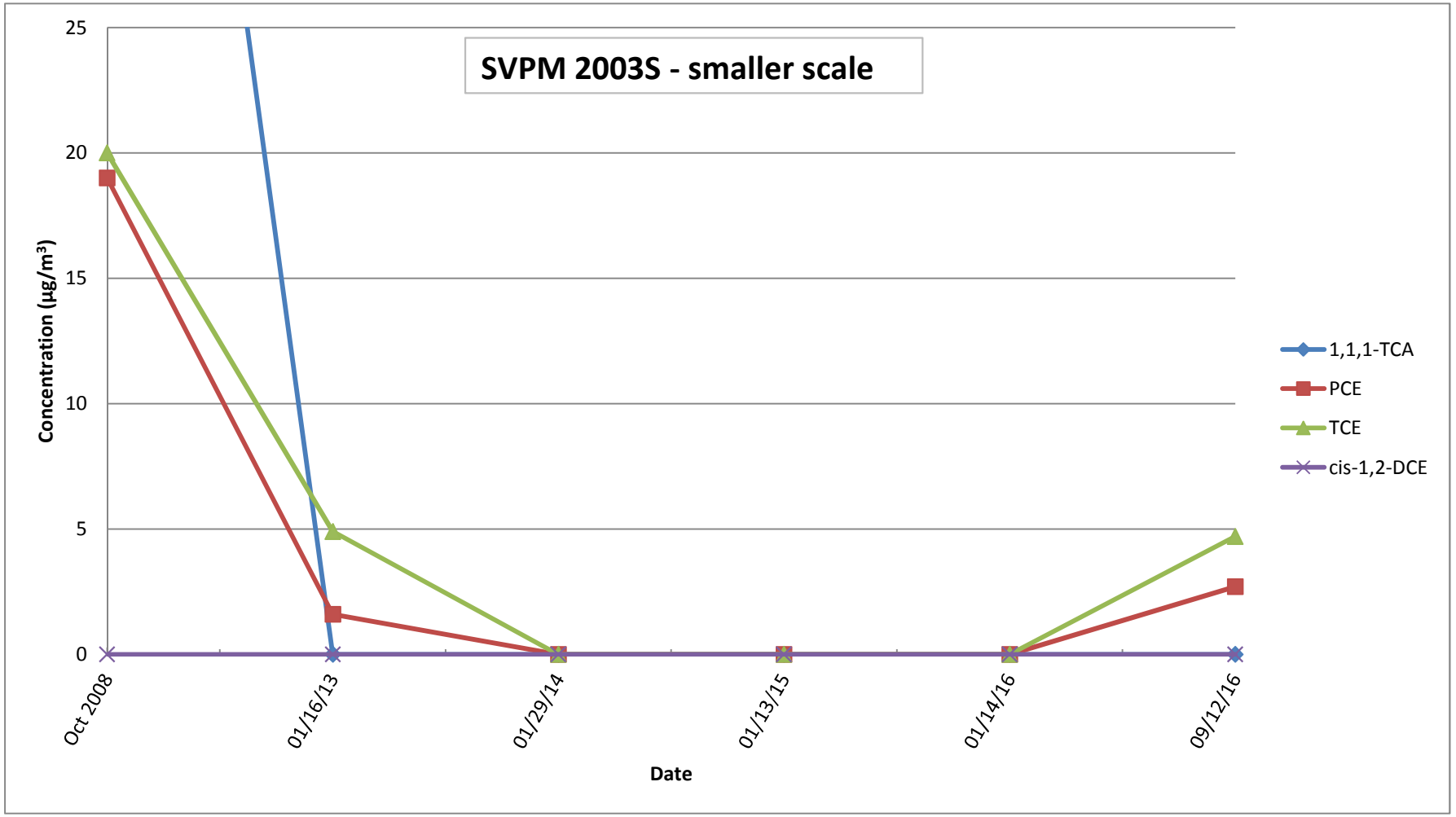

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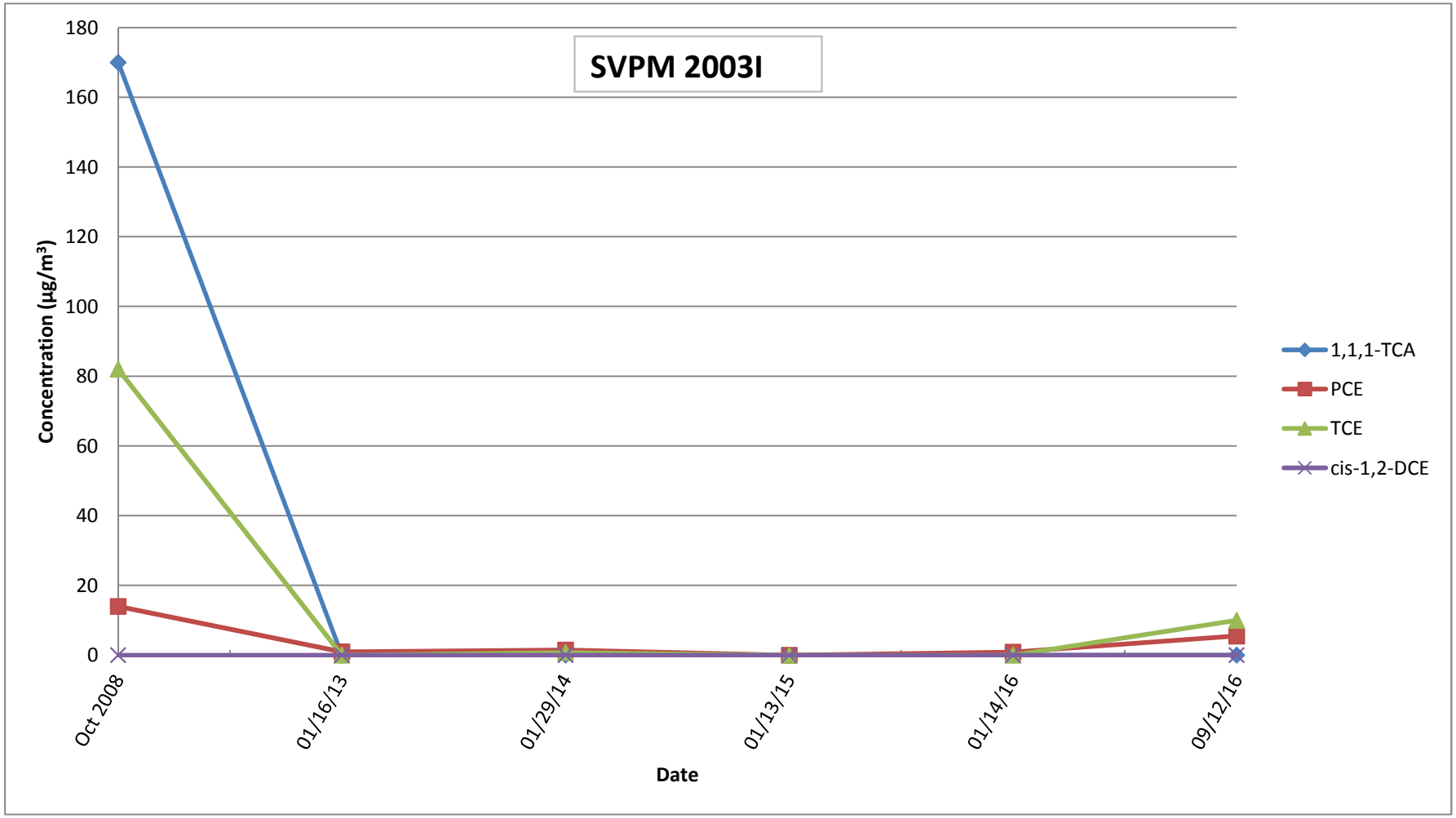

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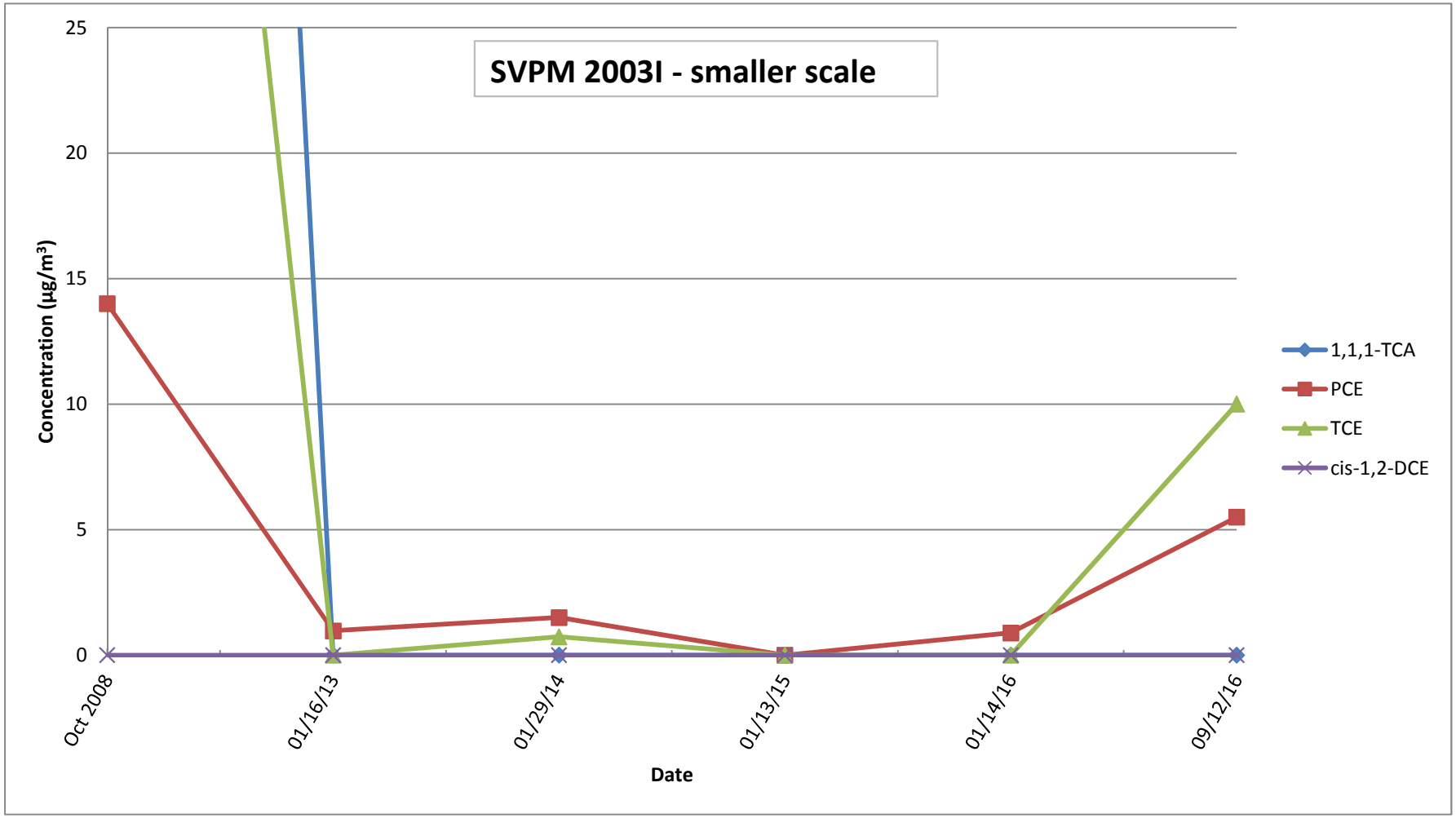

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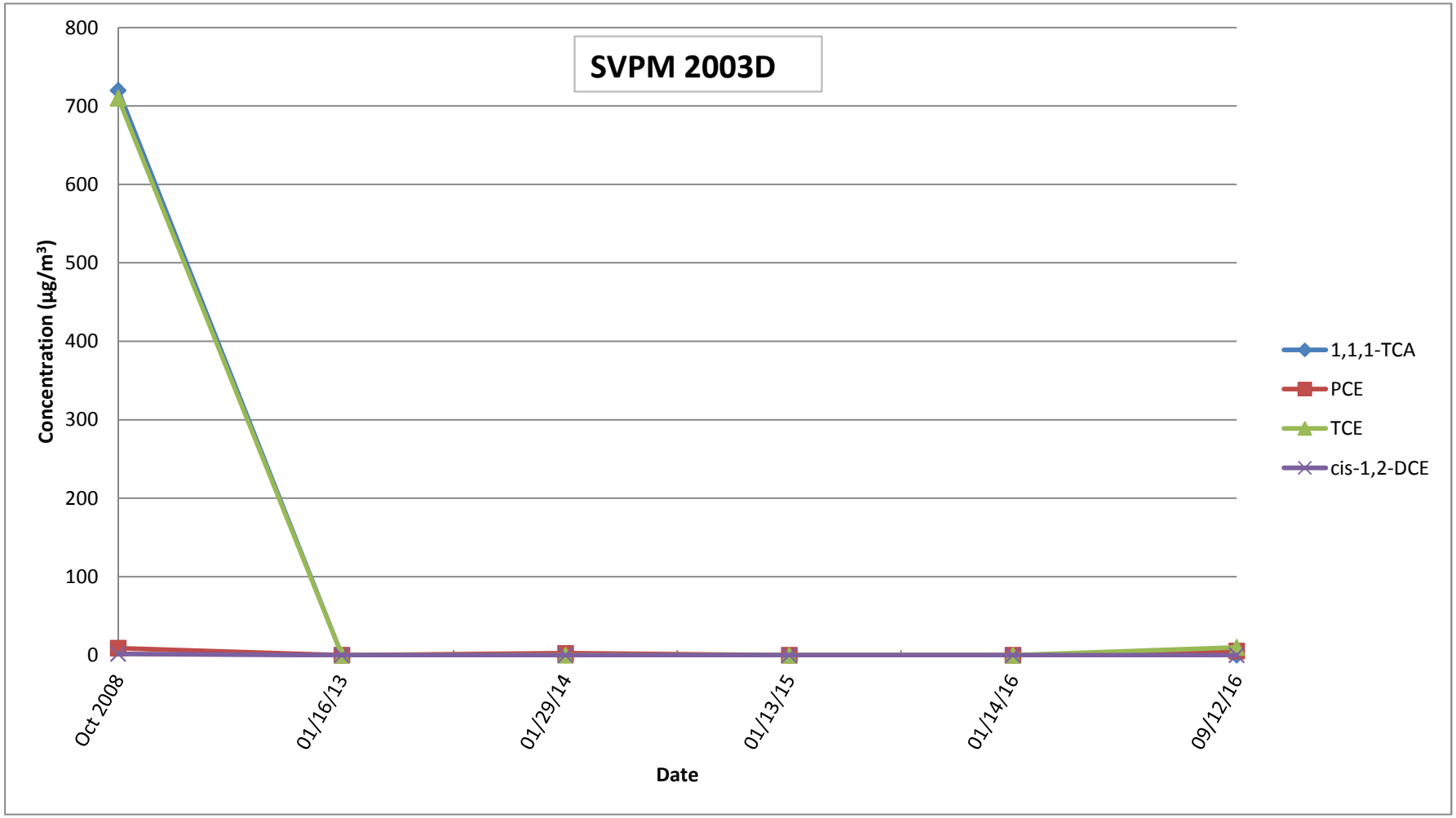

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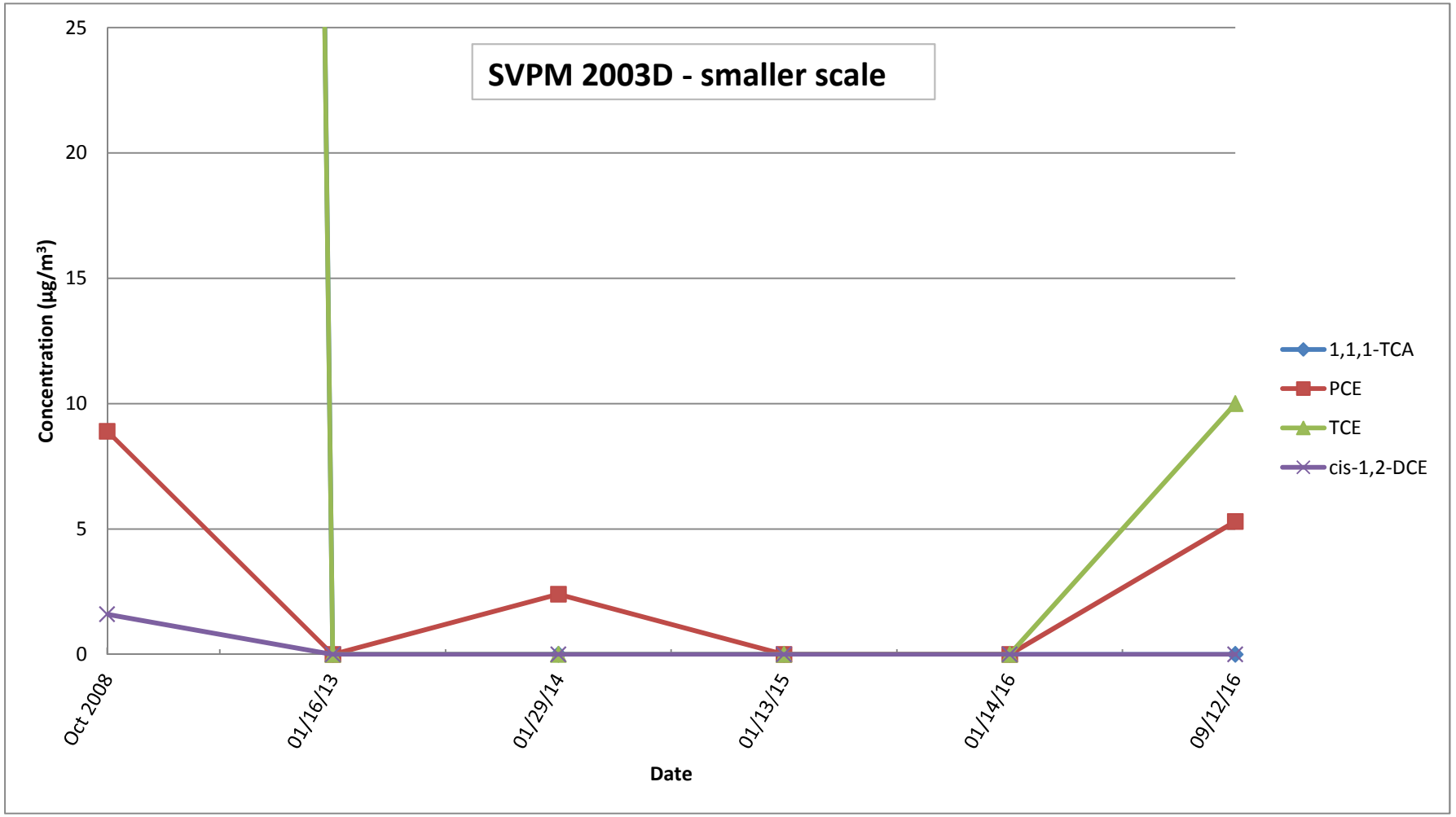

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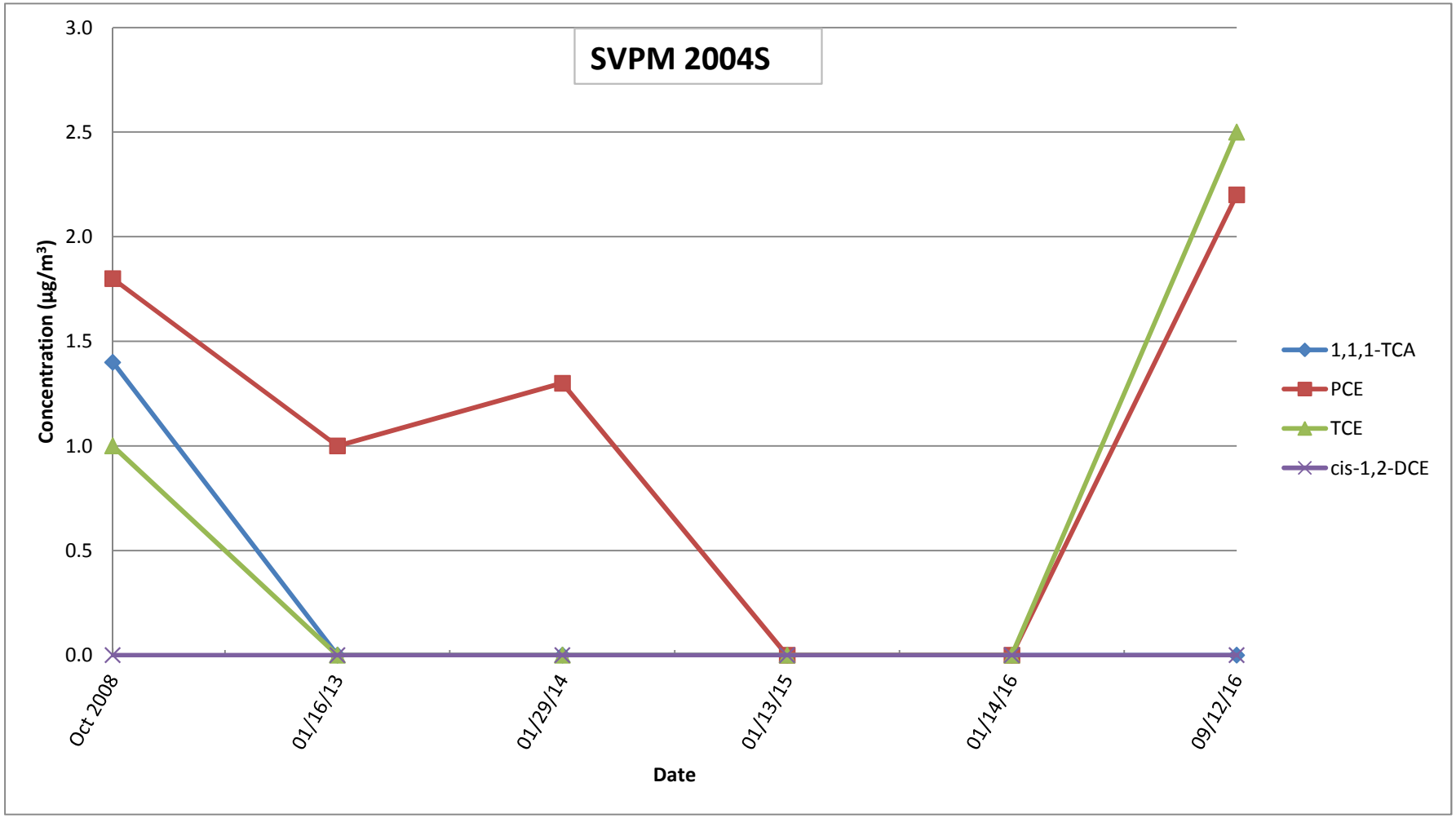

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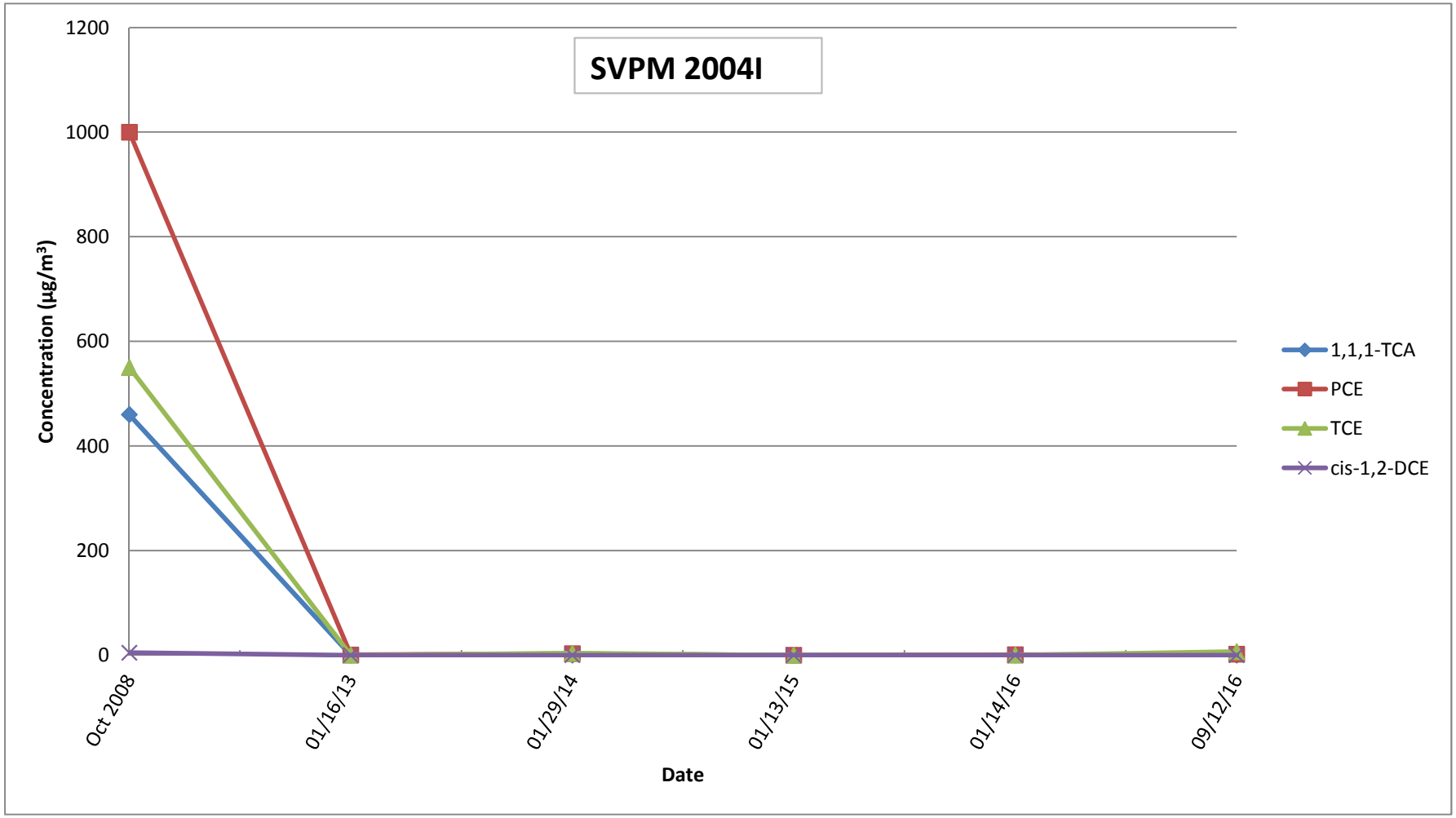

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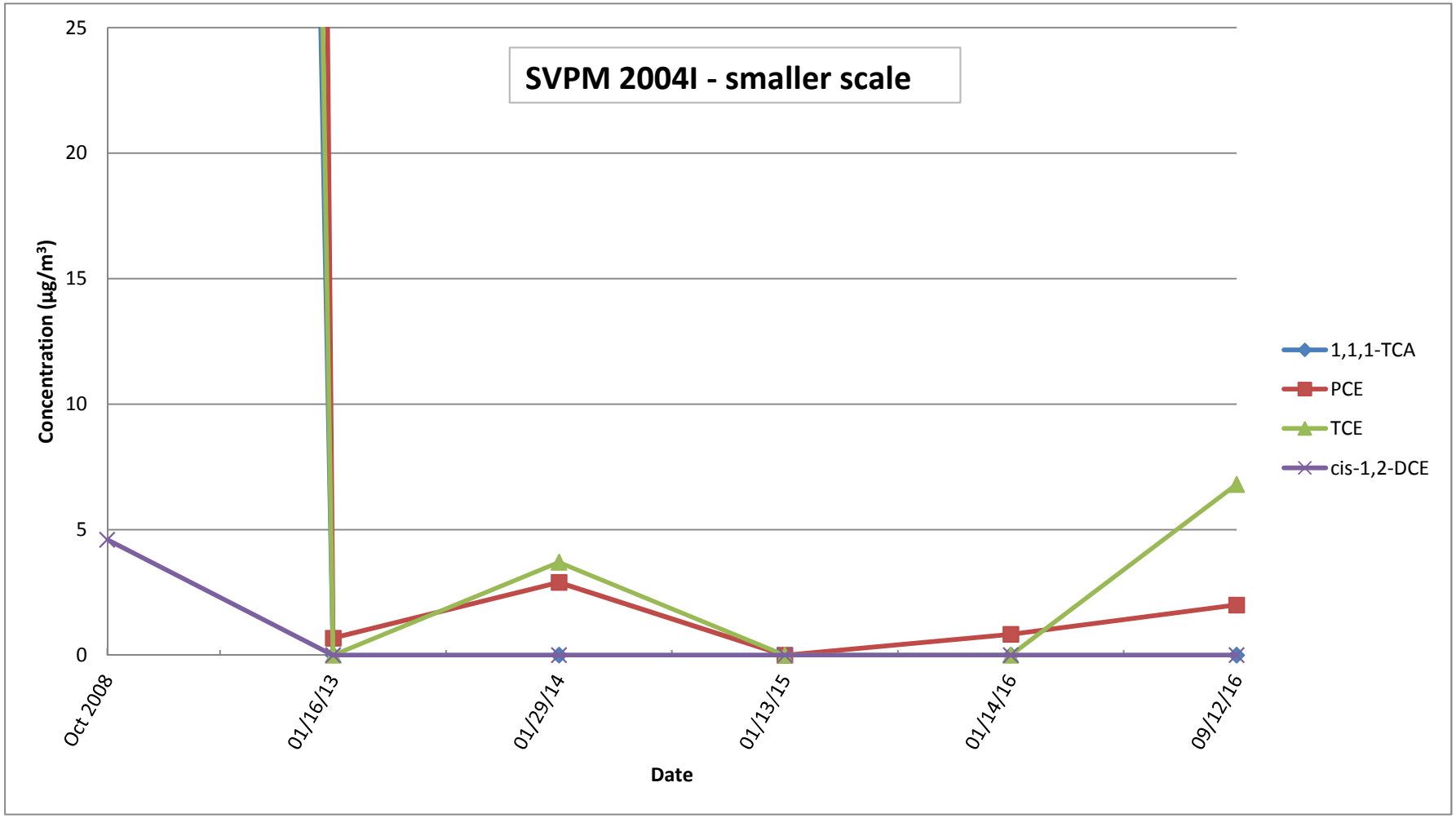

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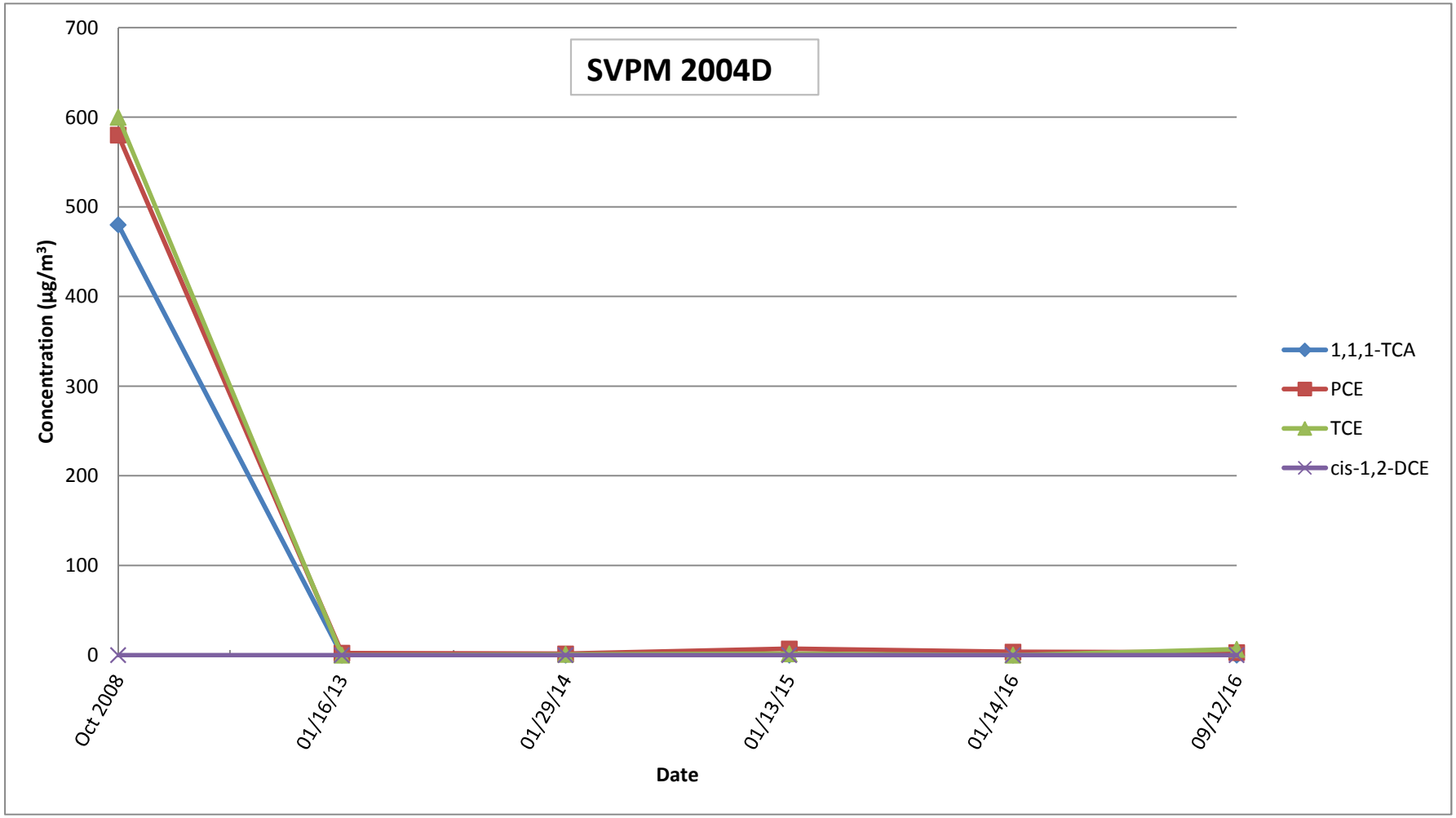

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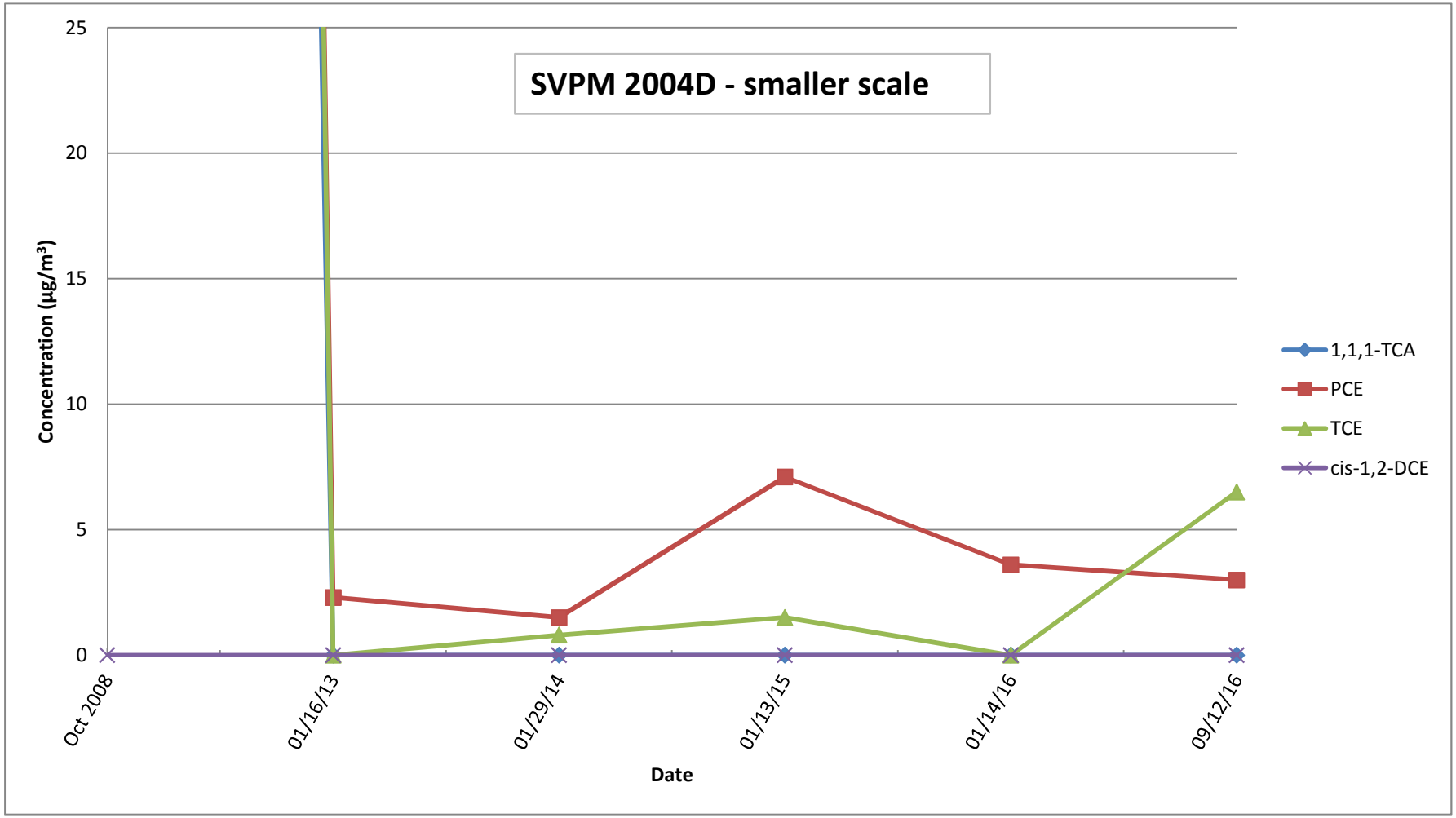

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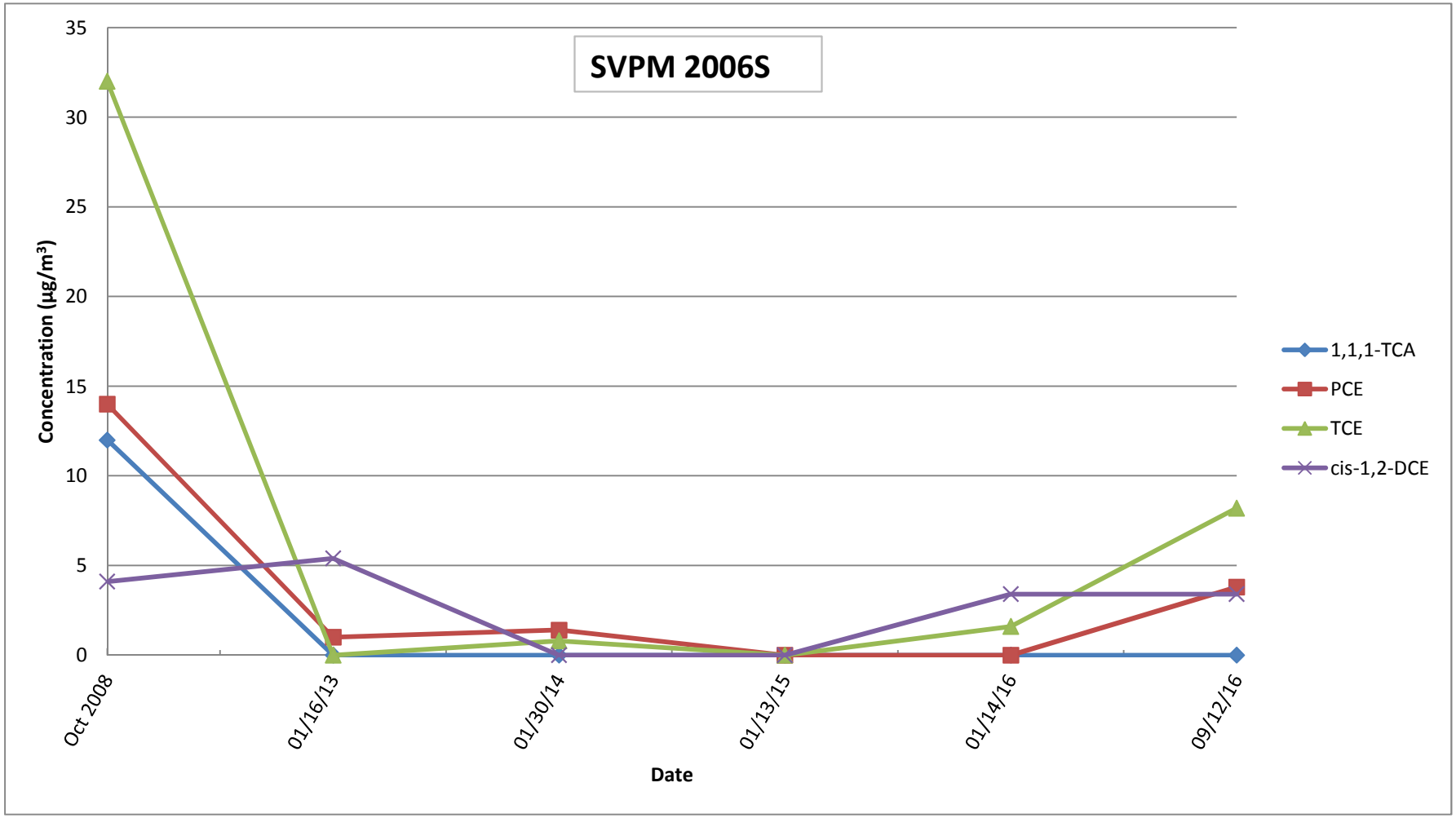

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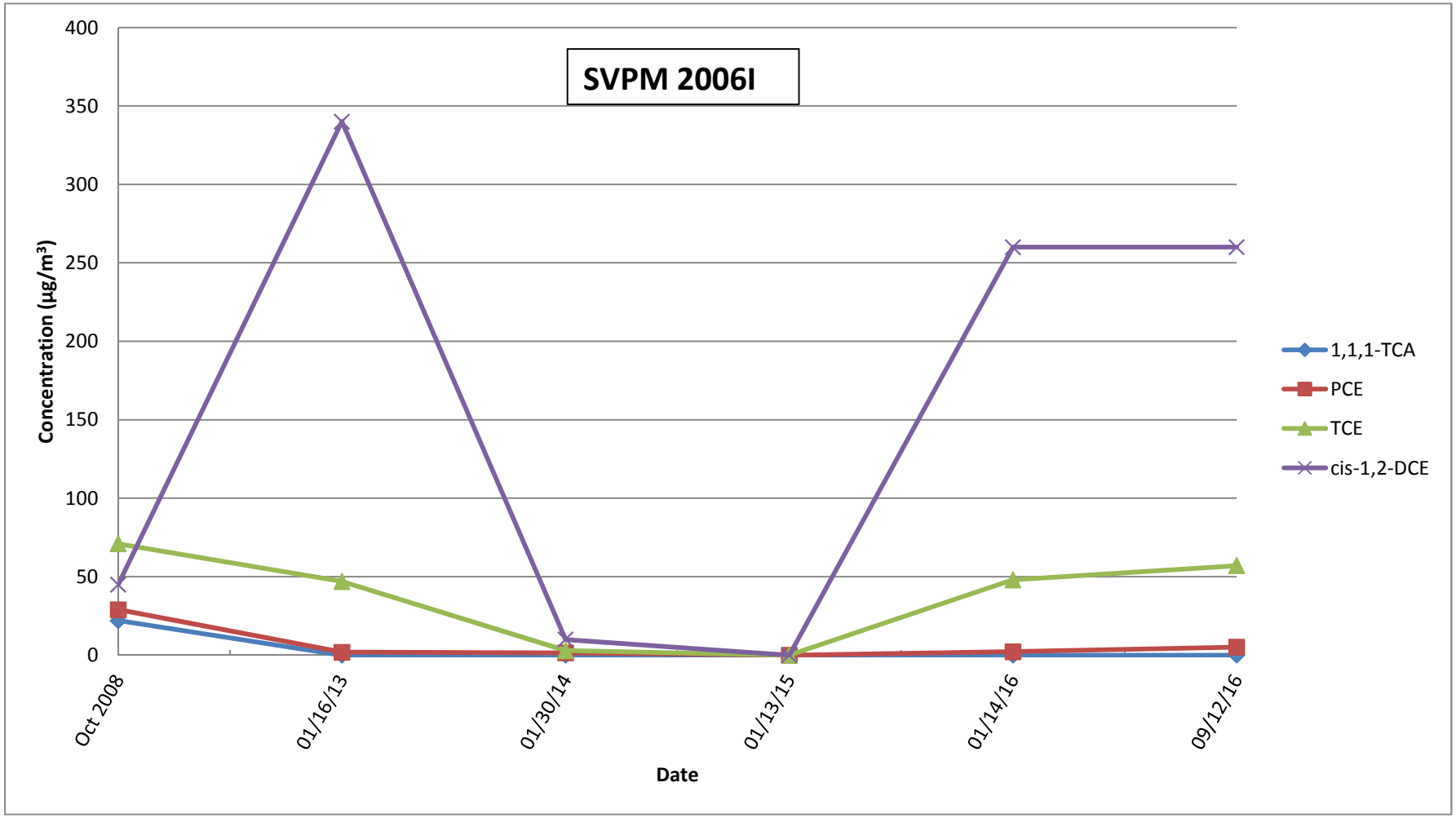

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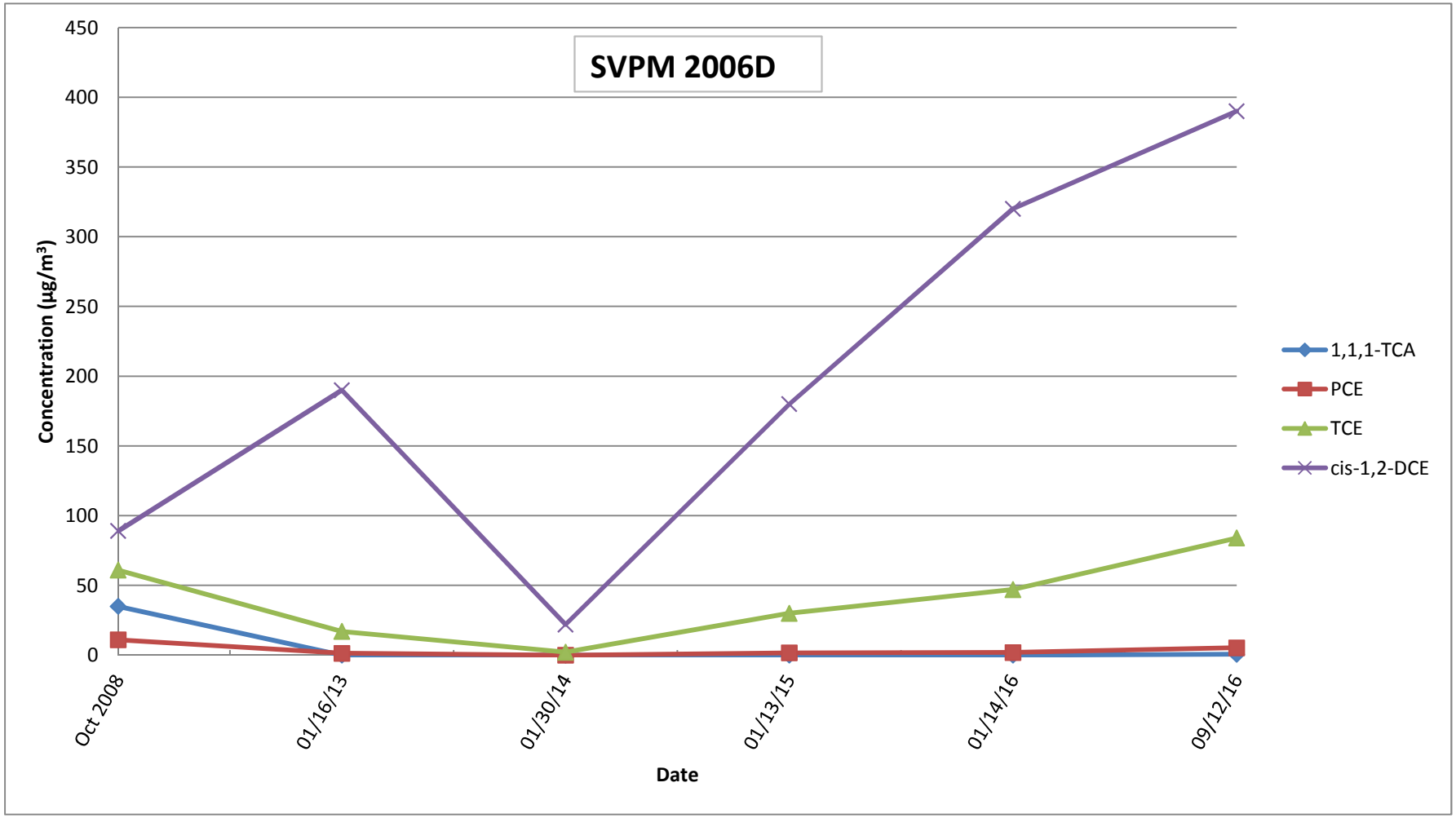

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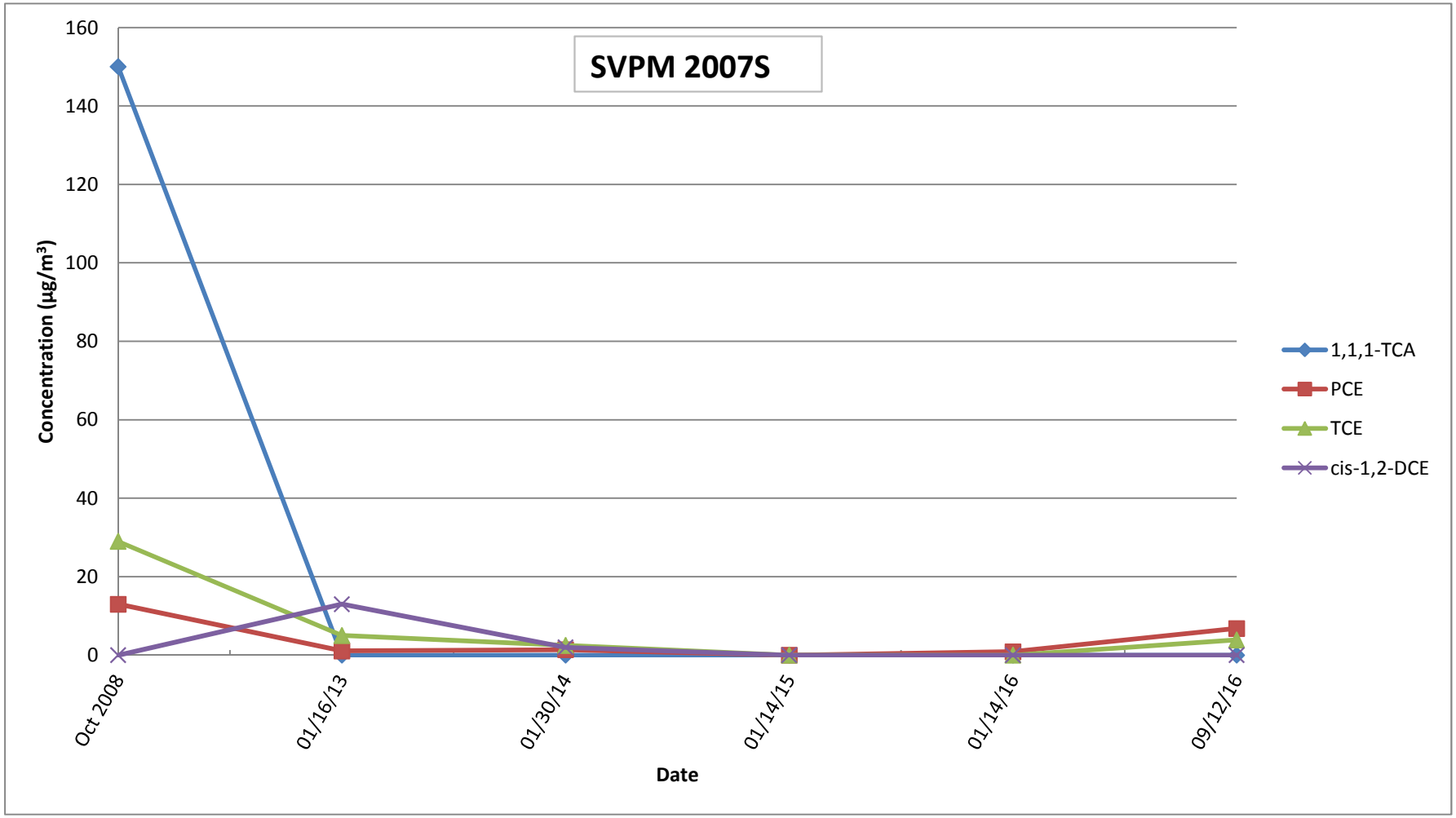

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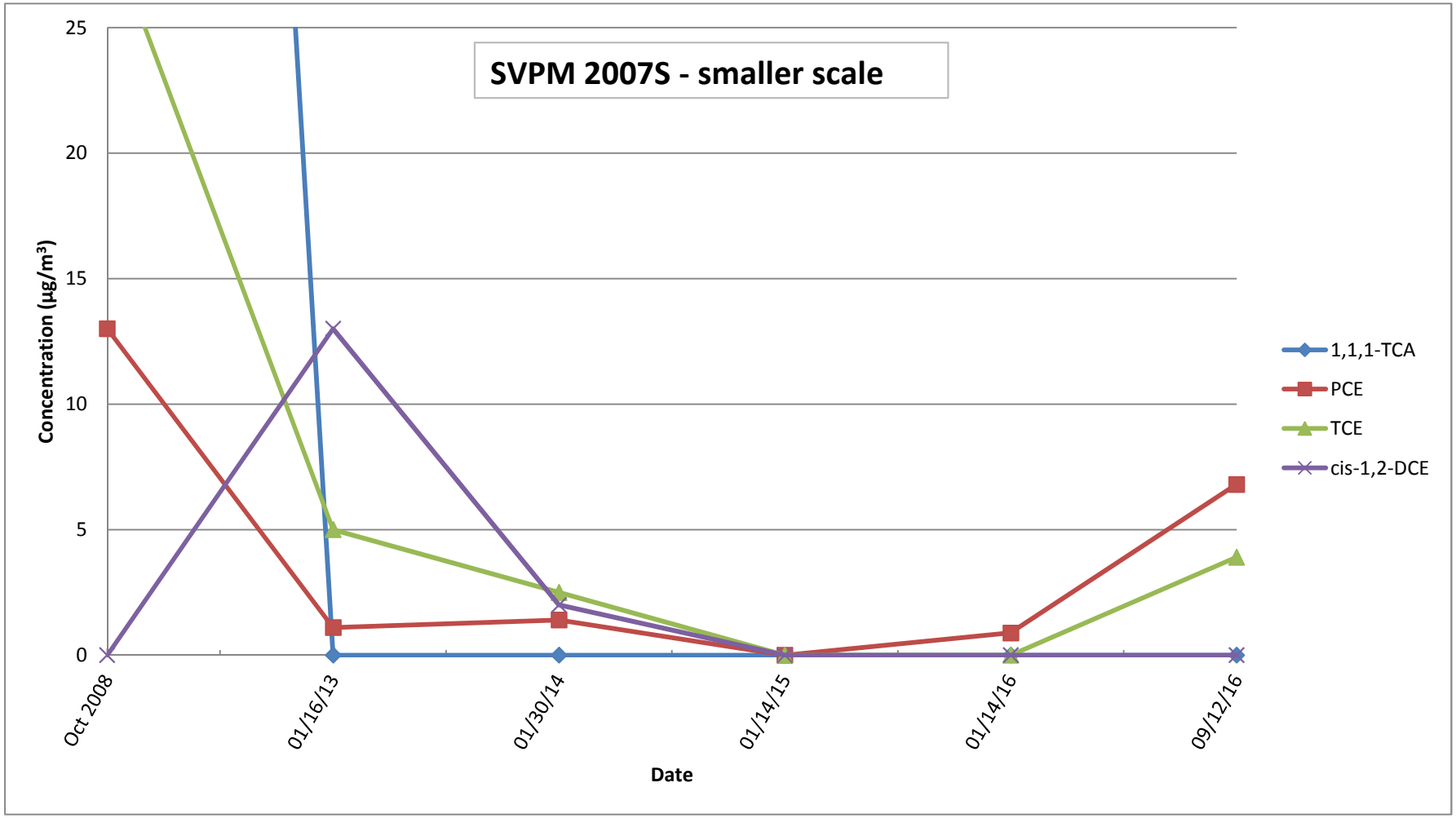

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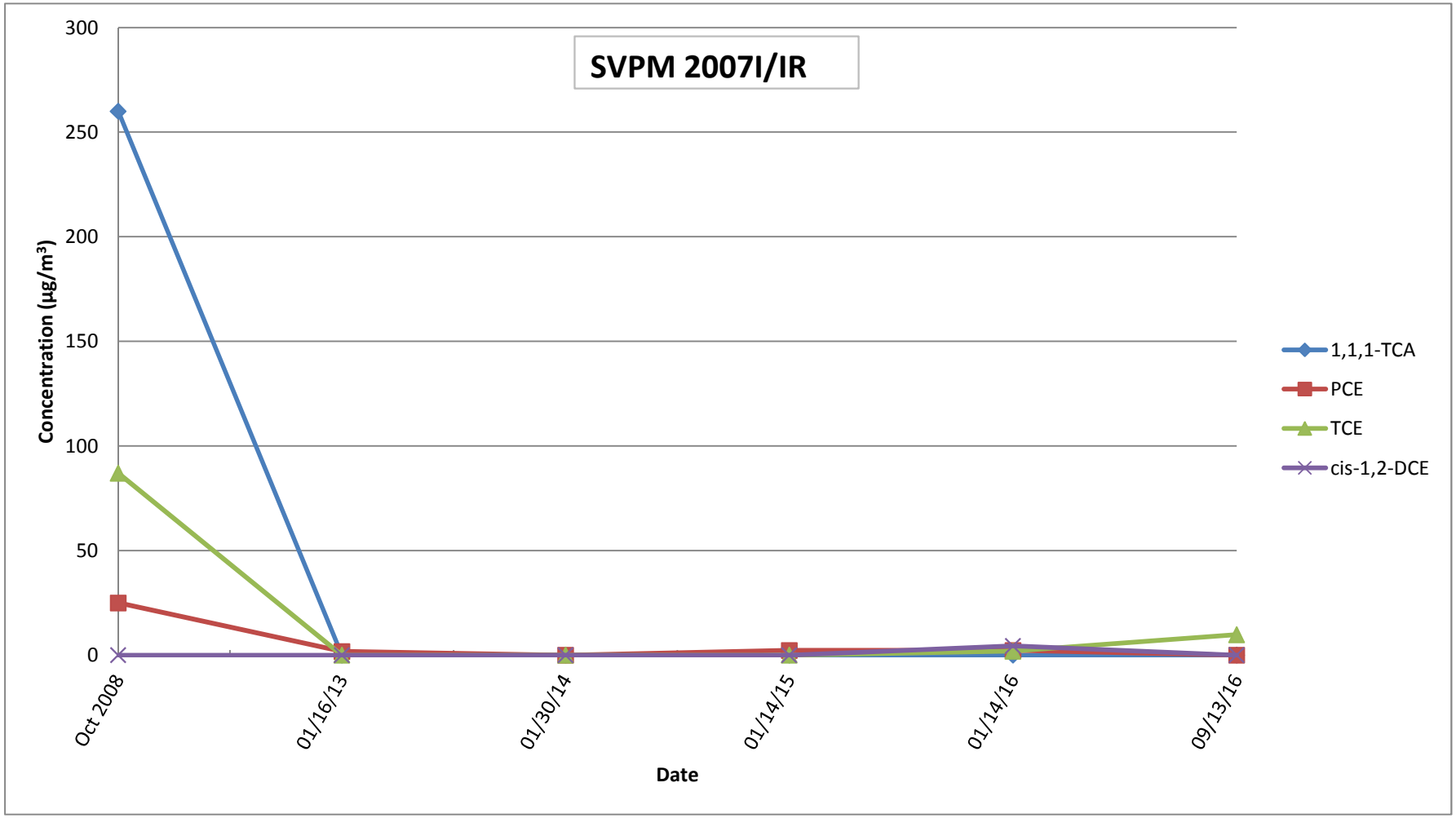

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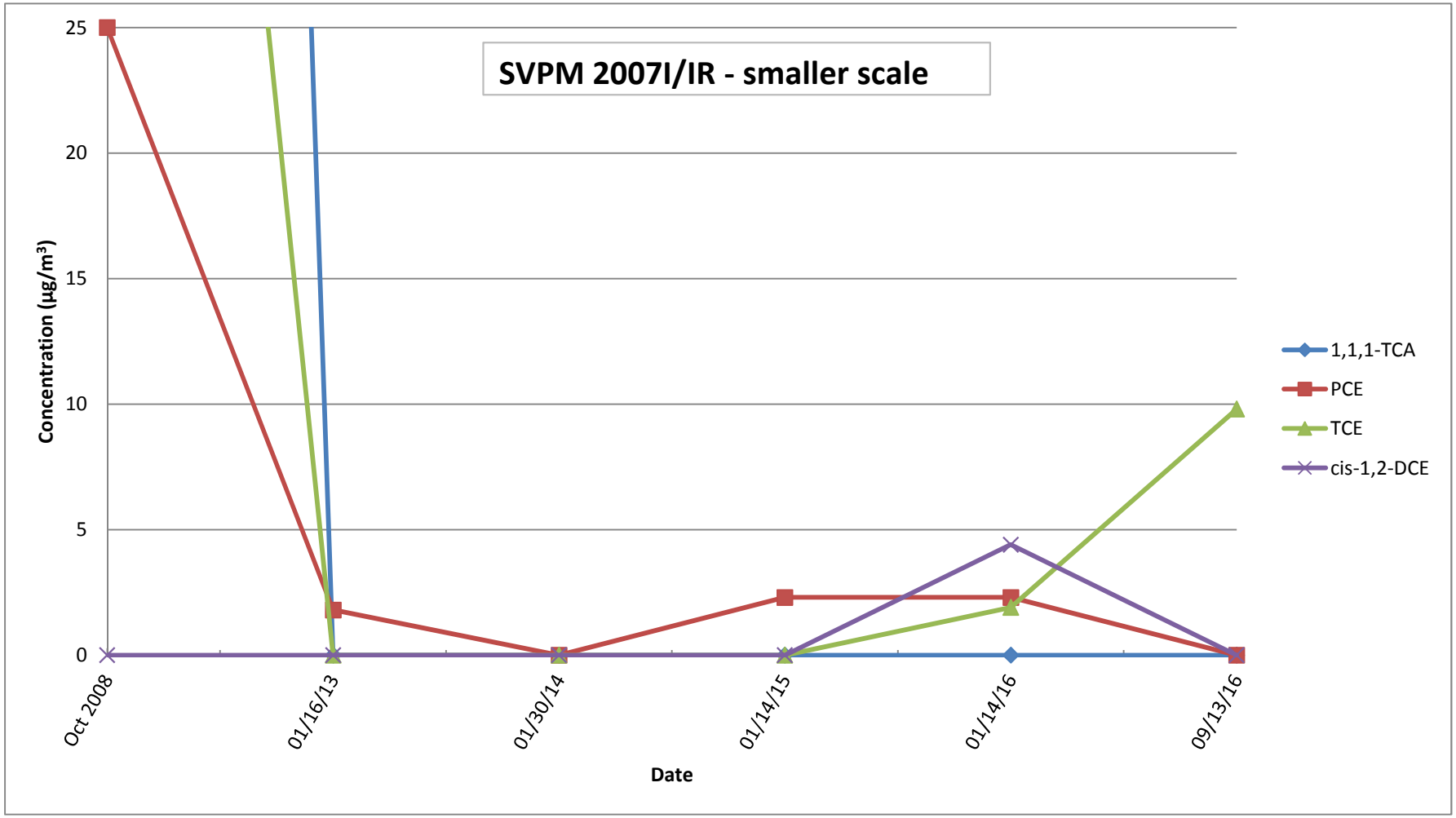

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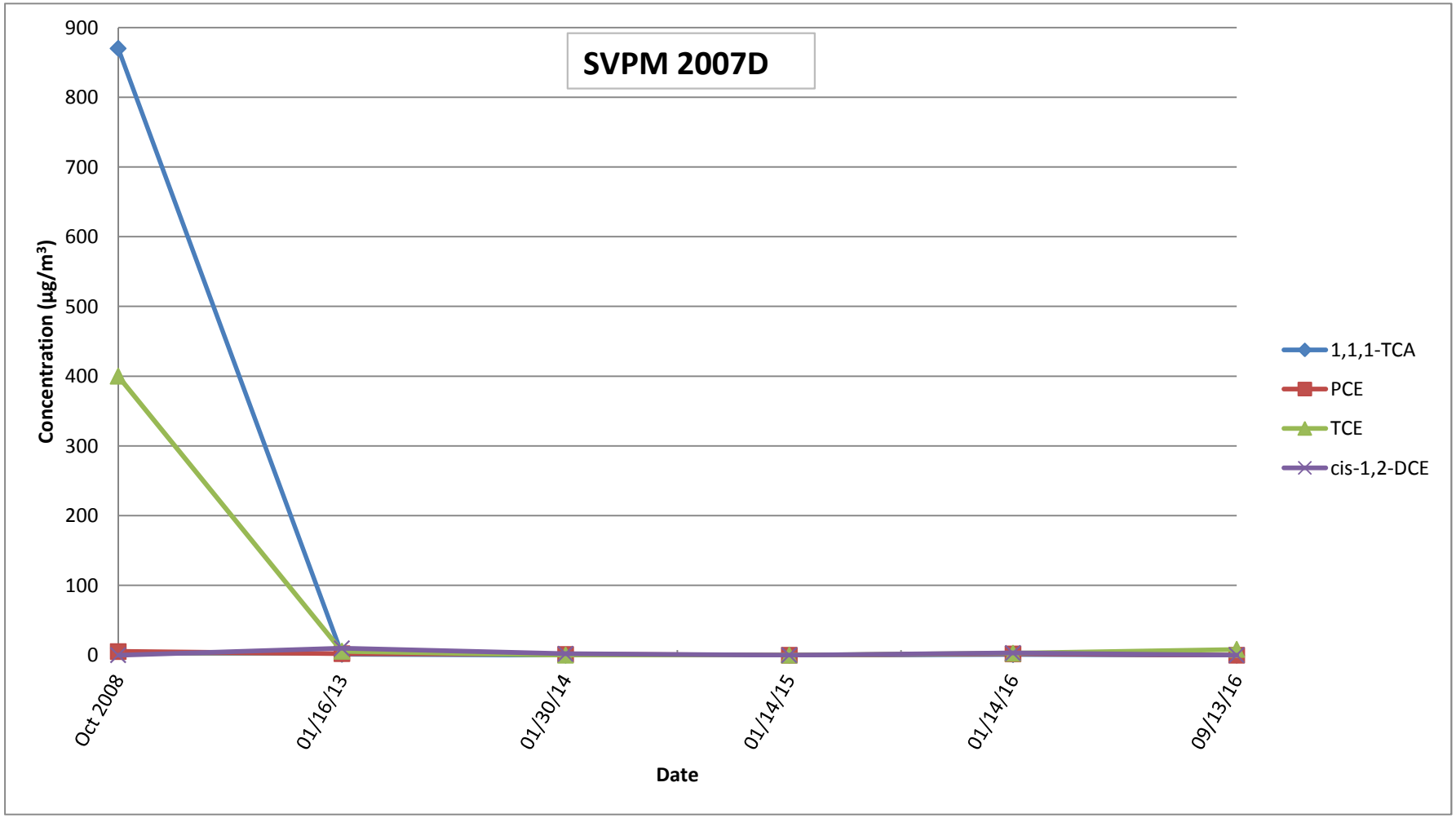

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