Quarterly Operations Report
Second Quarter 2012

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

November 2012

Prepared for:

Naval Facilities Engineering Command Mid-Atlantic
9742 Maryland Avenue
Norfolk, VA 23511

Prepared by:

H&S Environmental, Inc.
160 East Main Street, Suite 2F
Westborough, Massachusetts 01581
(508) 366-7442

Scanned & eDoced

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11/8/12

Patrick Schauble, P.E.
Program Manager

Date

11/8/12

Jennifer Good, P.G.
Project Manager

Date

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Acronyms and Abbreviations

bgs	below ground surface
CTO	Contract Task Order
DAR	Division of Air Resources
DoD	Department of Defense
ECOR	ECOR Federal Services, LLC.
ELAP	Environmental Laboratory Accreditation Program
FMS	Flow Monitoring Station
GOCO	Government Owned Contractor Operated
H&S	H&S Environmental, Inc.
i.w.	inches of water column
LIPA	Long Island Power Authority
NAVFAC	Naval Facilities Engineering Command Mid-Atlantic
NELAC	National Environmental Accreditation Conference
NGC	Northrop Grumman Corporation
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
NYDOH	New York Department of Health
O&M	Operation and Maintenance
PCB	polychlorinated biphenyls
PCE	tetrachloroethene
PID	photoionization detector
scfm	standard cubic feet per minute
SVECS	soil vapor extraction containment system
SVEW	soil vapor extraction well
SVOC	semi-volatile organic compound
TCA	trichloroethane
TCE	trichloroethene
TCL	target compound list
TtEC	Tetra Tech EC, Inc.
VGAC	vapor–phase granular activated carbon
VOC	volatile organic compound

1.0 INTRODUCTION

H&S Environmental, Inc. (H&S) has prepared this Quarterly Operations Report for the Second Quarter 2012 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 United States 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. H&S assumed operational responsibility of the SVECS from ECOR Federal Services, LLC (ECOR) on 1 July 2011. This Second Quarter 2012 Operations Report details activities that occurred from April 2012 to May 2012. Data was collected and operational activities were performed by H&S in accordance with the *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."

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. The Navy's property totaled approximately 109.5 acres and was formerly a Government Owned Contractor-Operated (GOCO) facility that was operated by the Northrop Grumman Corporation (NGC) until September 1998. NWIRP Bethpage is bordered on the north, west, and south by property owned, or formerly owned, by NGC that covered approximately 605 acres, and on the east by a residential neighborhood. Site 1 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 1941. 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), semivolatile 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 offsite 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 $\mu g/m^3$ (micrograms per cubic meter) 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 Department of Health (NYDOH) for subslab soil vapor concentrations. Of these compounds, TCE is the primary VOC of concern. Mitigation of TCE contamination in accordance with NYDOH guidance is expected to mitigate 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 and has been designed for a four-year operational life; it is expected to operate continuously 24 hours/day, seven days/week, with the exception of maintenance and adjustment periods (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 400 standard cubic feet per minute (scfm) of soil vapor. Each intermediate depth SVEW requires a minimum vacuum of 4 inches of water column (i.w.) and each deep SVEW requires a minimum vacuum of 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-11D) 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 and removed by a portable pump into 55-gallon drums and then disposed of onsite to the County's sanitary sewer system when necessary. 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 Process Flow Diagram 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 (**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 target compound list (TCL) VOCs - including PCE, 1,1,1-TCA, and TCE - by modified method TO-15.

2.0 SVECS OPERATION AND MAINTENANCE

While designed to run completely automated, 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 were performed during this reporting period:

- From 1 May through 31 May, the SVECS was shut down for total of 88 hours while the Long Island Power Authority (LIPA) was upgrading their system and installing a new high voltage switch.

- From 1 June through 12 June, the SVECS was shut down for total of 48 hours while LIPA was upgrading their system and installing a new high voltage switch.

3.0 SVECS MONITORING

Several process vapor samples are collected on a monthly basis to monitor SVECS effectiveness. 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. In addition, vapor samples are collected from the 12 original SVEWs on a quarterly basis to determine the effectiveness of the remediation activities and monitor the capture of the contaminated soil vapor by the SVEWs.

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. Composite 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 and associated calculations approved by the NYSDEC DAR in February 2010. A copy of the NYSDEC approved calculations is presented in the Air Permit Equivalent included as **Appendix A**.

A summary of monthly vapor sampling results collected in April, May, and June 2012 (Second Quarter 2012) 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 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 rates presented in the Air Permit Equivalent in **Appendix A**. Raw analytical data is provided under a separate cover.

3.2 Quarterly Air Quality Monitoring

Composite 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 at maintaining hydraulic containment and capturing the contaminated soil vapors (TtEC 2010).

Quarterly vapor samples were collected on 11 May 2012 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 Second Quarter monitoring event are presented graphically as **Figure 5**. Raw analytical data is provided under a separate cover.

3.3 Air Quality Concentration Trends

Historical vapor analytical results through the Second Quarter 2012 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 B**. Concentration trends observed through the Second Quarter 2012 are discussed below. In general, unless otherwise indicated, concentrations of 1,1,1-TCA, PCE, and TCE exhibited similar trends at each given location.

- Combined Influent: Overall VOC concentrations in the combined influent remained relatively consistent throughout the Second Quarter 2012, with total VOC concentrations of 2,110 µg/L 2,017 µg/L, and 2,174 µg/L in April, May, and June, respectively. Combined influent concentrations had increased noticeably in August 2011 and then gradually leveled off. Overall concentrations remain well below initial concentrations observed in July 2010 when a total VOC concentration of 3,265 µg/L was observed.

- SV-101I: Concentrations observed in the Second Quarter 2012 were similar to those observed in the First Quarter 2012, when concentrations increased significantly from previous rounds. Peak concentrations were observed in the Second Quarter 2012 for TCE (4,300 µg/L) and 1,1,1-TCA (1,500 µg/L), and concentrations for all three COCs remain above initial concentrations observed in September 2010 (1,200 µg/L TCE, 36 µg/L PCE, and 450 µg/L 1,1,1-TCA).

- SV-101D: Concentrations increased substantially in the Third Quarter 2011 and then fell back to initially observed concentrations in the Fourth Quarter 2011. No COCs were detected in the First Quarter 2012. Concentrations again increased substantially in the Second Quarter 2012 (200 µg/L TCE, 79 µg/L PCE, and 3.1 µg/L 1,1,1-TCA), with peak concentrations of TCE observed (200 µg/L). No overall trend is discernible.

- SV-102I and SV-102D: No apparent trends were observed. Concentrations generally increased throughout 2011 but remained below initial concentrations observed in September 2010 (88 µg/L TCE, 6 µg/L PCE, and 3 µg/L 1,1,1-TCA at SV-102I and 110 µg/L TCE, 19 µg/L PCE, and 7 µg/L 1,1,1-TCA at SV-102D). Overall concentrations decreased in the First Quarter 2012, and increased slightly in the Second Quarter 2012 (26 µg/L TCE, 1.6 µg/L PCE, and 0.6 µg/L 1,1,1-TCA at SV-102I and 58 µg/L TCE, 6.5 µg/L PCE, and 1.2 µg/L 1,1,1-TCA at SV-102D). Concentrations observed during the Second Quarter 2012 remained well below initial concentrations.

- SV-103I and SV-103D: Concentrations increased substantially in the Third and Fourth Quarter 2011, reaching maximum concentrations (100 µg/L TCE, 590 µg/L PCE, and 6 µg/L 1,1,1-TCA at SV-103I and 290 µg/L TCE, 6,700 µg/L PCE, and 31 µg/L 1,1,1-TCA at SV-103D), with the most significant increases observed in PCE concentrations. Concentrations decreased in the First Quarter 2012 and remained similar in the Second Quarter 2012. Concentrations observed during the Second Quarter 2012 (47 µg/L TCE, 200 µg/L PCE, and 1.6 µg/L 1,1,1-TCA at SV-103I and 200 µg/L TCE, 3,200 µg/L PCE, and 6.9 µg/L 1,1,1-TCA at SV-103D) were well below peak concentrations but remained above initial concentrations observed in September 2010 (non-detectable levels at SV-103I and 7 µg/L TCE, 9 µg/L PCE, and non-detectable levels of 1,1,1-TCA at SV-103D).

- SV-104I: Concentrations increased in the Third Quarter 2011, though remained less than initial values observed in September 2010 (72 µg/L TCE, 96 µg/L PCE, and 4 µg/L 1,1,1-TCA). Concentrations decreased in the Fourth Quarter 2011 and continued to decrease throughout the first two quarters of 2012, reaching non-detectable levels in the Second Quarter 2012.

- SV-104D: Concentrations increased substantially throughout the latter half of 2011, reaching maximum concentrations in the Third and Fourth Quarter 2011 (1,600 µg/L TCE, 6,300 µg/L PCE, and 620 µg/L 1,1,1-TCA), with the most significant increase observed in PCE concentrations. Concentrations decreased somewhat in the First Quarter 2012 and remained fairly similar in the Second Quarter 2012 (1,400 µg/L TCE, 4,300 µg/L PCE, and 580 µg/L 1,1,1-TCA). Second Quarter 2012 concentrations remained significantly above initial values observed in September 2010, when all concentrations were below detectable levels.

- SV-105I and SV-105D: Concentrations increased substantially throughout the latter half of 2011, reaching maximum concentrations in the Fourth Quarter 2011 (200 µg/L TCE, 100 µg/L PCE, and 31µg/L 1,1,1-TCA at SV-105I and 7,000 µg/L TCE, 330 µg/L PCE, and 930 µg/L 1,1,1-TCA at SV-105D), with the most significant increases observed in TCE concentrations. Concentrations decreased somewhat in the First Quarter 2012 but remained fairly similar, having increased slightly in the Second Quarter 2012 (140 µg/L TCE, 43 µg/L PCE, and 13 µg/L 1,1,1-TCA at SV-105I and 4,500 µg/L TCE, 220 µg/L PCE, and 320 µg/L 1,1,1-TCA at SV-105D). With the exception of 1,1,1-TCA and PCE at SV-105D, concentrations remain above initial values observed in September 2010.

- SV-106I: No apparent trends were observed. TCE concentrations reached maximum levels in the Second and Fourth Quarter 2011 (210 µg/L TCE, 19 µg/L PCE, and 7 µg/L 1,1,1-TCA). Concentrations observed in the First Quarter 2012 fell below initial values observed in September 2010. Concentrations observed in the Second Quarter 2012 (110 µg/L TCE, 7.2 µg/L PCE, and 2.2 µg/L 1,1,1-TCA) remained similar, having increased slightly.

- SV-106D: No apparent trends were observed. Concentrations generally increased gradually throughout 2011, reaching peak concentrations in the Fourth Quarter 2011 (320 µg/L TCE, 66 µg/L PCE, and 29 µg/L 1,1,1-TCA). Concentrations in the First Quarter 2012 then fell to non-detectable levels. In the Second Quarter 2012, concentrations (180 µg/L TCE, 28 µg/L PCE, and 11 µg/L 1,1,1-TCA) returned near to initial values observed in September 2010.

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. The removal of VOCs by the SVECS indicates that progress is being made toward these goals. Influent vapor analytical data with concentrations of TCE consistently 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, and ongoing optimization activities should be performed in order to improve system performance.

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.

TABLES

Table 1
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Vapor Monitoring Results
April 2012

Compound	Concentation ($\mu g/m^3$)				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)
Acetone	0	0	0	15 J	0.0000	0.0000	0.0000	0.2341	0.0000
Bromomethane	0	76 J	38 J	29 J	0.0001	0.5932	0.0001	0.4527	0.0488
2-Butanone	0	4.4 J	2.2 J	0	0.0000	0.0343	0.0000	0.0000	0.0028
Carbon Disulfide	2.5 J	0	1.3 J	2.7 J	0.0000	0.0195	0.0000	0.0421	0.0016
Carbon Tetrachloride	3.4 J	4.0 J	3.7 J	0	0.0000	0.0578	0.0000	0.0000	0.0047
Chloroform	3.5 J	3.9 J	3.7 J	0	0.0000	0.0578	0.0000	0.0000	0.0047
Cumene	7.4	0	3.7	8.5	0.0000	0.0578	0.0000	0.1327	0.0047
Cyclohexane	2.0 J	2.5 J	2.3 J	0	0.0000	0.0351	0.0000	0.0000	0.0029
1,1-Dichloroethane	12	17	15	0	0.0000	0.2263	0.0000	0.0000	0.0186
1,1-Dichloroethene	12	4.2	8	0	0.0000	0.1264	0.0000	0.0000	0.0104
cis-1,2-Dichloroethene	210	220	215	0	0.0004	3.3560	0.0000	0.0000	0.2758
trans-1,2-Dichloroethene	2.1 J	2.6 J	2.4 J	0	0.0000	0.0367	0.0000	0.0000	0.0030
1,4-Dioxane	0	0	0	1.5 J	0.0000	0.0000	0.0000	0.0234	0.0000
Freon 11	3.7 J	4.4 J	4.1 J	0	0.0000	0.0632	0.0000	0.0000	0.0052
Freon 12	3.8	3.9 J	3.9 J	3.8 J	0.0000	0.0601	0.0000	0.0593	0.0049
Freon 113	72	76	74	0	0.0001	1.1551	0.0000	0.0000	0.0949
Heptane	1.6 J	1.9 J	1.8 J	0	0.0000	0.0273	0.0000	0.0000	0.0022
Hexane	7.9	8.9	8.4	0	0.0000	0.1311	0.0000	0.0000	0.0108
Methylene Chloride	13 J	9.0 J	11 J	8.0 J	0.0000	0.1717	0.0000	0.1249	0.0141
4-Methyl-2-pentanone	1.4 J	0	0.7 J	1.1 J	0.0000	0.0109	0.0000	0.0172	0.0009
Tetrachloroethene	550	620	585	0	0.0010	9.1314	0.0000	0.0000	0.7505
Tetrahydrofuran	3.1	3.1	3.1	0	0.0000	0.0484	0.0000	0.0000	0.0040
1,1,1-Trichloroethane	220	250	235	0	0.0004	3.6682	0.0000	0.0000	0.3015
Trichloroethene	830	930	880	1.3 J	0.0016	13.7361	0.0000	0.0203	1.1290
2,2,4-Trimethylpentane	7.6	9.0	8.3	0	0.0000	0.1296	0.0000	0.0000	0.0106
Vinyl Chloride	0.94 J	0	0.47 J	0	0.0000	0.0073	0.0000	0.0000	0.0006
Total VOCs	1970	2251	2110	71	0.0038	32.9413	0.0001	1.1067	2.7075

Notes:

All samples were analyzed for full list VOCs by modified method TO-15. Only detected analytes are presented above.

Average Monthly Vapor Temp (°F) =	100
Average Monthly Flowrate (cfm) =	505
Average Monthly Flowrate (scfm) =	476
Operational Hours for the month =	720

(1) Emissions (lbs/hr) = Concentration ($\mu g/m^3$)*(lb/454000000μg)*(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
May 2012

Compound	Concentation (mg/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)
Acetone	10 J	8.8 J	9.4 J	6.0 J	0.0000	0.1527	0.0000	0.0975	0.0114
Benzene	0.74 J	0.78 J	0.76 J	0	0.0000	0.0123	0.0000	0.0000	0.0009
2-Butanone	1.9 J	0	1.0 J	0	0.0000	0.0154	0.0000	0.0000	0.0012
Carbon Tetrachloride	2.0 J	2.4 J	2.2 J	0	0.0000	0.0357	0.0000	0.0000	0.0027
Chloroform	3.4	3.6 J	3.5 J	0	0.0000	0.0569	0.0000	0.0000	0.0043
Cumene	7.2	0	3.6	4.1	0.0000	0.0585	0.0000	0.0666	0.0044
Cyclohexane	1.8 J	1.9 J	1.9 J	0	0.0000	0.0300	0.0000	0.0000	0.0023
1,1-Dichloroethane	14	13	14	0	0.0000	0.2193	0.0000	0.0000	0.0164
1,2-Dichloroethane	0.77 J	0	0.39 J	0	0.0000	0.0063	0.0000	0.0000	0.0005
1,1-Dichloroethene	1.1 J	0	0.6 J	0	0.0000	0.0089	0.0000	0.0000	0.0007
cis-1,2-Dichloroethene	200	200	200	0	0.0004	3.2486	0.0000	0.0000	0.2433
trans-1,2-Dichloroethene	2.0 J	0	1.0 J	0	0.0000	0.0162	0.0000	0.0000	0.0012
Ethanol	1.9 J	0	1.0 J	0	0.0000	0.0154	0.0000	0.0000	0.0012
Ethylbenzene	1.3 J	1.3 J	1.3 J	0	0.0000	0.0211	0.0000	0.0000	0.0016
Freon 11	3.3 J	3.4 J	3.4 J	0	0.0000	0.0544	0.0000	0.0000	0.0041
Freon 12	2.5 J	2.5 J	2.5 J	2.5 J	0.0000	0.0406	0.0000	0.0406	0.0030
Freon 113	73	72	73	0	0.0001	1.1776	0.0000	0.0000	0.0882
Heptane	2.7 J	2.7 J	2.7 J	0	0.0000	0.0439	0.0000	0.0000	0.0033
Methylene Chloride	2.4 J	0.0	1.2 J	0	0.0000	0.0195	0.0000	0.0000	0.0015
Tetrachloroethene	600	650	625	0	0.0012	10.1518	0.0000	0.0000	0.7602
Tetrahydrofuran	1.9 J	1.8 J	1.9 J	0	0.0000	0.0300	0.0000	0.0000	0.0023
Toluene	3.1	3.2	3.2	0	0.0000	0.0512	0.0000	0.0000	0.0038
1,1,1-Trichloroethane	190	190	190	0	0.0004	3.0861	0.0000	0.0000	0.2311
Trichloroethene	800	840	820	0	0.0015	13.3192	0.0000	0.0000	0.9974
1,2,4-Trimethylbenzene	0.48 J	0	0.24 J	0	0.0000	0.0039	0.0000	0.0000	0.0003
2,2,4-Trimethylpentane	48	50	49	0	0.0001	0.7959	0.0000	0.0000	0.0596
m,p-Xylene	3.6	4.0	3.8	0	0.0000	0.0617	0.0000	0.0000	0.0046
o-Xylene	2.1 J	2.4 J	2.3 J	0	0.0000	0.0365	0.0000	0.0000	0.0027
Total VOCs	1981	2054	2017	13	0.0037	32.7698	0.0000	0.2047	2.4540

Notes:

All samples were analyzed for full list VOCs by modified method TO-15. Only detected analytes are presented above.

Average Monthly Vapor Temp (°F) =	100
Average Monthly Flowrate (cfm) =	526
Average Monthly Flowrate (scfm) =	495
Operational Hours for the month =	656

(1) Emissions (lbs/hr) = Concentration (mg/m^3)*(lb/454000000mg)*(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
June 2012

Compound	Concentation (mg/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)
Acetone	5.9 J	6.7 J	6.3 J	5.0 J	0.0000	0.1028	0.0000	0.0816	0.0079
Benzene	0	0.30 J	0.15 J	0	0.0000	0.0024	0.0000	0.0000	0.0002
Carbon Disulfide	1.6 J	1.6 J	1.6 J	1.6 J	0.0000	0.0261	0.0000	0.0261	0.0020
Carbon Tetrachloride	2.3 J	2.6 J	2.5 J	0	0.0000	0.0400	0.0000	0.0000	0.0031
Chloroform	4.2	4.7	4.5	0	0.0000	0.0726	0.0000	0.0000	0.0056
Chloromethane	0	2.7 J	1.4 J	2.1 J	0.0000	0.0220	0.0000	0.0343	0.0017
Cumene	2.9 J	0	1.5 J	4.1	0.0000	0.0237	0.0000	0.0669	0.0018
1,4-Dichlorobenzene	1.3 J	0	0.7 J	0	0.0000	0.0106	0.0000	0.0000	0.0008
1,1-Dichloroethane	15	18	17	1.5 J	0.0000	0.2691	0.0000	0.0245	0.0206
1,2-Dichloroethane	1.0 J	0.87 J	0.94 J	0	0.0000	0.0153	0.0000	0.0000	0.0012
1,1-Dichloroethene	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
cis-1,2-Dichloroethene	200	220	210	7.1	0.0004	3.4254	0.0000	0.1158	0.2628
trans-1,2-Dichloroethene	2.7 J	2.3 J	2.5 J	0	0.0000	0.0408	0.0000	0.0000	0.0031
Freon 11	5.3	5.2	5.3	3.5 J	0.0000	0.0856	0.0000	0.0571	0.0066
Freon 12	3.4 J	3.0 J	3.2 J	2.3 J	0.0000	0.0522	0.0000	0.0375	0.0040
Freon 113	89	91	90	0	0.0002	1.4680	0.0000	0.0000	0.1126
Hexane	0	0.83 J	0.42 J	0	0.0000	0.0068	0.0000	0.0000	0.0005
Methylene Chloride	2.9 J	0	1.5 J	0	0.0000	0.0237	0.0000	0.0000	0.0018
Tetrachloroethene	650	720	685	0	0.0013	11.1732	0.0000	0.0000	0.8571
Tetrahydrofuran	3.6	3.7	3.7	0	0.0000	0.0595	0.0000	0.0000	0.0046
Toluene	1.2 J	0	0.6 J	0	0.0000	0.0098	0.0000	0.0000	0.0008
1,2,4-Trichlorobenzene	4.6 J	0	2.3 J	0	0.0000	0.0375	0.0000	0.0000	0.0029
1,1,1-Trichloroethane	230	270	250	0	0.0005	4.0778	0.0000	0.0000	0.3128
Trichloroethene	810	930	870	0	0.0016	14.1908	0.0000	0.0000	1.0886
2,2,4-Trimethylpentane	13	14	14	0	0.0000	0.2202	0.0000	0.0000	0.0169
Total VOCs	2050	2298	2174	27	0.0040	35.4557	0.0001	0.4437	2.7199

Notes:

All samples were analyzed for full list VOCs by modified method TO-15. Only detected analytes are presented above.

Average Monthly Vapor Temp (°F) = 95
Average Monthly Flowrate (cfm) = 523
Average Monthly Flowrate (scfm) = 498
Operational Hours for the month = 672

(1) Emissions (lbs/hr) = Concentration (mg/m^3)*(lb/454000000mg)*(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
Second Quarter 2012 Vapor Analytical Results Summary

Sample ID	SVE 101I	SVE101D	SVE102I	SVE102D	SVE103I	SVE103D	SVE104I	SVE104D	SVE105I	SVE105D	SVE 106I	SVE 106D
Sample Date	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12	05/11/12
Analysis by TO-15 (µg/m^3)												
1,1,1-Trichloroethane	1500	3.1 J	0.60 J	1.2 J	1.6 J	6.9 J	ND	580	13	320	2.2 J	11
1,1-Dichloroethane	28	ND	ND	ND	0.75 J	1.5 J	ND	95	5.6	78	0.70 J	3.0
1,1-Dichloroethene	10	ND	ND	ND	ND	ND	ND	5.0 J	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	3.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9 J
1,2,4-Trimethylbenzene	3.2 J	2.7 J	1.5 J	2.3 J	3.3 J	2.4 J	ND	4.0 J	1.7 J	3.4 J	2.2 J	ND
1,2-Dibromoethane	ND	0.72 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	6.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3 J
1,3-Butadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.87 J	ND
2,2,4-Trimethylpentane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120	390
2-Butanone	ND	ND	ND	ND	5.2 J	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	0.24 J	ND	ND	ND	ND	ND	ND	ND
4-ethyltoluene	1.7 J	1.3 J	0.72 J	1.0 J	1.4 J	1.2 J	ND	1.7 J	0.53 J	ND	2.0 J	2.8 J
Acetone	10 J	14 J	9.9 J	6.0 J	27	11 J	6.5 J	12 J	4.7 J	15 J	9.5 J	13 J
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5 J
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.1 J	0.55 J	18
Chloroform	ND	0.91 J	1.4 J	19	1.1 J	1.6	ND	2.2 J	1.0 J	2.7 J	1.4 J	6.4
cis-1,2-Dichloroethene	7.4 J	ND	ND	ND	16	230	ND	2800 J	9.7	220	2.3 J	4.1
Cumene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4 J
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.9	7.0
Ethanol	5.3 J	3.2 J	ND	ND	5.9 J	ND	1.2 J	2.2 J	1.1 J	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.6	6.3
Freon 11	ND	1.7 J	2.0 J	5.8	1.2 J	ND	1.0 J	ND	0.87 J	ND	0.96 J	1.3 J
Freon 113	ND	ND	ND	ND	ND	ND	ND	980	5.5 J	43	6.5	15
Freon 12	ND	2.6 J	2.4 J	2.1 J	2.5 J	ND	2.1 J	ND	1.8 J	ND	2.2 J	2.3 J
Heptane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.6	18
m,p-Xylene	1.8 J	1.4 J	0.97 J	1.4 J	1.6 J	1.3 J	ND	1.1 J	1.0 J	1.9 J	15	21
Methylene Chloride	ND	1.4 J	1.0 J	ND	1.0 J	ND	ND	ND	ND	ND	2.0 J	ND
o-Xylene	ND	0.77 J	ND	ND	1.2 J	ND	ND	ND	ND	ND	5.9	24
n-Propylbenzene	ND	0.32 J	ND	ND	0.45 J	ND	ND	ND	ND	ND	0.48 J	0.45 J
Tetrachloroethene	46	79	1.6 J	6.5	200	3200	ND	4300	43	220	7.2	28
Tetrahydrofuran	ND	0.93 J	ND	0.74 J	2.9	ND	ND	ND	0.99 J	1.6 J	1.2 J	1.1 J
Toluene	ND	ND	ND	0.99 J	0.65 J	ND	ND	ND	ND	ND	3.4	11
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	31	ND	ND	ND	ND
Trichloroethene	4300	200	26	58	47	280	ND	1400	140	4500	110	180

Notes:
µg/m^3 = micrograms per cubic meter
All samples were analyzed for full list VOCs by modified method TO-15. Only detected analytes are presented above.

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE 101I							
Sample Date	09/16/10	12/08/10	03/30/11	06/28/11	09/06/11	10/14/11	03/20/12	05/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	450	850	300	1	0.7 J	0.7 J	1500	1500
1,1,2,2-Tetrachloroethane	ND	ND	ND	1 J	0.7 J	0.8 J	ND	ND
1,1,2-Trichloroethane	3	5	ND	1 J	0.6 J	0.6 J	4.0 J	ND
1,1-Dichloroethane	14	31	5	0.8 J	0.4 J	0.4 J	28	28
1,1-Dichloroethene	4	8	ND	0.7 J	0.4 J	0.5 J	7.6 J	10
1,2,3-Trichloropropane	ND	ND	ND	1 J	0.6 J	0.8 J	NR	NR
1,2,3-Trimethylbenzene	6	2	ND	0.6 J	ND	0.5 J	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	15	5	2	1	ND	0.7 J	ND	3.2 J
1,2-Dibromoethane	ND	ND	ND	ND	ND	0.8 J	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	0.6	ND	0.6 J	ND	ND
1,2-Dichloroethane	4	8	ND	0.9	0.5 J	0.5 J	6.9 J	6.4 J
1,2-Dichloropropane	ND	ND	ND	ND	0.6 J	0.6 J	ND	ND
1,3,5-Trimethylbenzene	4	ND	ND	0.6 J	ND	0.5 J	ND	ND
1,3-Butadiene	ND	ND	ND	0.7	0.4 J	0.4 J	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	3	1	ND	3	1	1	ND	ND
2-Hexanone	ND	ND	ND	ND	0.5 J	0.5 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	ND	0.4 J	ND	ND	ND
4-ethyltoluene	3	ND	ND	0.7 J	ND	ND	ND	1.7 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	9	5	9	22	16	8	22 J	10 J
alpha-Chlorotoluene	ND	ND	ND	ND	ND	0.5 J	ND	ND
Acrylonitrile	ND	ND	ND	ND	0.4 J	ND	NR	NR
Benzene	1	ND	ND	1	0.4 J	0.6 J	ND	ND
Benzyl Chloride	ND	ND	ND	ND	ND	ND	NR	NR
Bromodichloromethane	23	ND	ND	1	0.8 J	0.8 J	ND	ND
Bromoform	ND	ND	ND	ND	ND	1 J	ND	ND
Bromomethane	ND	ND	ND	0.8	0.6 J	0.5 J	ND	ND
Carbon Disulfide	ND	ND	ND	0.9	0.5 J	0.4 J	ND	ND
Carbon Tetrachloride	2	ND	ND	2	1 J	1 J	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	0.5 J	ND	ND
Chlorodibromomethane	ND	ND	ND	ND	ND	0.9 J	NR	NR
Chloroethane	ND	ND	ND	0.6	0.4 J	0.4 J	ND	ND
Chloroform	2	1	ND	1	0.8 J	0.6 J	ND	ND
Chloromethane	1	0.5	ND	1	1	1	7.1 J	ND
cis-1,2-Dichloroethene	9	15	3	0.7 J	ND	0.4 J	7.1 J	7.4 J
cis-1,3-Dichloropropene	ND	ND	ND	0.7 J	ND	ND	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	ND	0.9	0.7	0.3 J	ND	ND
Dichlorodifluoromethane	3	2	ND	3	2	3	ND	ND
Diisopropyl ether	ND	ND	ND	ND	ND	ND	NR	NR
Ethanol	5	4	2	10	7	3	6.9 J	5.3 J
Ethyl Acetate	ND	ND	ND	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	0.7 J	ND	ND	NR	NR
Ethylbenzene	3	ND	ND	1	ND	0.5 J	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	ND	ND
Freon 113	ND	ND	ND	2	2 J	1 J	ND	ND
Freon 114	ND	ND	ND	2	1 J	0.9 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	ND	ND
Heptane	ND	ND	ND	2	ND	0.5 J	ND	ND
Hexachlorobutadiene	ND	ND	ND	2 J	ND	1 J	ND	ND
Hexane	1	ND	ND	3	3	0.7	ND	ND
iso-Octane	2	ND	ND	4	ND	0.6 J	NR	NR
Isopropylbenzene	ND	ND	ND	0.8 J	ND	0.6 J	NR	NR
Isoproyl alcohol	ND	0.8	0.8	2	3	0.7	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	ND	1.8 J
Methyl Methacrylate	ND	ND	ND	0.6 J	ND	0.4 J	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	ND	1	1	0.4 J	ND	ND
Methylene Chloride	ND	1	4	8	17	2	2.3 J	ND
MIBK	ND	ND	ND	1	ND	0.4 J	NR	NR
Naphthalene	4	5	5	ND	ND	ND	NR	NR
n-Butane	0.8	0.7	ND	2	0.7	0.8	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	ND
p-Isopropyltoluene	ND	ND	ND	0.6 J	ND	ND	NR	NR
n-Propylbenzene	2	ND	ND	0.7 J	ND	ND	ND	ND
Propylene	ND	2	2	ND	ND	0.5	NR	NR
Styrene	ND	ND	ND	0.7 J	ND	ND	ND	ND
tert-Amyl methyl ether	ND	ND	ND	ND	ND	0.5 J	NR	NR
tert-Butyl Alcohol	ND	ND	ND	0.7	0.4 J	0.4 J	NR	NR
Tetrachloroethene	36	63	10	1	ND	2	48	46
Tetrahydrofuran	4	2	2	1	1	0.5 J	ND	ND
Toluene	3	ND	ND	3	0.4 J	0.8	ND	ND
Total Xylenes	13	ND	ND	4	ND	2 J	NR	NR
trans-1,2-Dichloroethene	ND	ND	ND	0.7 J	0.4 J	0.4 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1200	2400	560	1	0.6 J	0.5 J	4200	4300
Trichlorofluoromethane	2	1	ND	2	2	2	NR	NR
Vinyl Acetate	1	ND	ND	ND	0.7 J	ND	NR	NR
Vinyl Bromide	ND	ND	ND	1	0.6 J	0.6 J	NR	NR
Vinyl Chloride	ND	ND	ND	0.5 J	0.3 J	0.3 J	ND	ND

Notes:
µg/m³ = micrograms per cubic meter
NR = Not Recorded
NA = Data not available. Vapor samples could not be collected due to water in the extraction wells.

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE101D							
Sample Date	09/16/10	12/12/10	03/30/11	06/28/11	09/06/11	10/14/11	02/10/12	05/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	ND	ND	ND	3	3	0.8 J	ND	3.1 J
1,1,2,2-Tetrachloroethane	ND	ND	ND	3	0.9 J	1 J	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	2	0.6 J	0.7 J	ND	ND
1,1-Dichloroethane	ND	ND	ND	2	0.9 J	0.5 J	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	0.7 J	0.4 J	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	2	0.8 J	0.8 J	NR	NR
1,2,3-Trimethylbenzene	ND	ND	ND	4	1	1	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	2 J	ND	ND	ND	3.2 J
1,2,4-Trimethylbenzene	ND	ND	ND	10	3	3	ND	2.7 J
1,2-Dibromoethane	ND	ND	ND	3	ND	0.9 J	ND	0.72 J
1,2-Dichlorobenzene	ND	ND	ND	2 J	ND	0.7 J	ND	ND
1,2-Dichloroethane	ND	ND	ND	2	0.5 J	0.5 J	ND	ND
1,2-Dichloropropane	ND	ND	ND	2	0.6 J	0.5 J	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	3	0.9 J	1	ND	ND
1,3-Butadiene	ND	ND	ND	ND	0.4 J	0.5 J	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	1 J	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	1 J	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	1	ND	ND	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	ND	1	2	8	1	1	ND	ND
2-Hexanone	ND	ND	ND	2	0.7 J	0.5 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	ND	0.4 J	0.4 J	ND	ND
4-ethyltoluene	ND	ND	ND	3	0.8 J	1	ND	1.3 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	19	10	10	36	4	9	4.4 J	14 J
alpha-Chlorotoluene	ND	ND	ND	2 J	ND	0.5 J	ND	ND
Acrylonitrile	ND	ND	ND	ND	0.4 J	ND	NR	NR
Benzene	ND	1	ND	4	0.5 J	0.5 J	0.59 J	ND
Benzyl Chloride	ND	ND	ND	ND	ND	ND	NR	NR
Bromodichloromethane	ND	ND	ND	3	0.9 J	0.8 J	ND	ND
Bromoform	ND	ND	ND	3 J	ND	1 J	ND	ND
Bromomethane	ND	ND	ND	2	0.6 J	0.5 J	ND	ND
Carbon Disulfide	ND	ND	ND	2	0.8	0.5 J	ND	ND
Carbon Tetrachloride	ND	ND	ND	4	1 J	1	ND	ND
Chlorobenzene	ND	ND	ND	2	0.5 J	0.6 J	ND	ND
Chlorodibromomethane	ND	ND	ND	3	0.9 J	1 J	NR	NR
Chloroethane	ND	ND	ND	ND	0.4 J	0.4 J	ND	ND
Chloroform	ND	ND	ND	2	7	0.7 J	ND	0.91 J
Chloromethane	1	2	ND	3	0.4	1	ND	ND
cis-1,2-Dichloroethene	ND	3	ND	2	2	0.5 J	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	2	0.5 J	ND	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	ND	2	0.4 J	0.4 J	ND	ND
Dichlorodifluoromethane	2	3	ND	5	3	3	ND	ND
Diisopropyl ether	14	ND	ND	ND	ND	ND	NR	NR
Ethanol	7	5	11	29	1	3	2.4 J	3.2 J
Ethyl Acetate	12	ND	ND	ND	ND	0.5 J	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	1	0.5 J	ND	NR	NR
Ethylbenzene	ND	ND	ND	4	0.8 J	0.9	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	1.2 J	1.7 J
Freon 113	4	2	ND	4	7	1 J	ND	ND
Freon 114	ND	ND	ND	3	1 J	1 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	1.4 J	2.6 J
Heptane	ND	ND	ND	3	0.4 J	0.5 J	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	1 J	1 J	ND	ND
Hexane	30	2	2	18	2	0.8	ND	ND
Iso-Octane	ND	ND	ND	4	0.7 J	0.6 J	NR	NR
Isopropylbenzene	ND	ND	ND	2	0.5 J	0.6 J	NR	NR
Isoproyl alcohol	9	1	4	9	1	0.9	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	ND	1.4 J
Methyl Methacrylate	ND	ND	ND	2	0.4 J	3	NR	NR
Methyl-tert-Butyl-Ether	4	ND	ND	5	0.7	0.4 J	ND	ND
Methylene Chloride	150	7	4	84	8	2	0.54 J	1.4 J
MIBK	ND	ND	ND	4	0.5 J	0.5 J	NR	NR
Naphthalene	ND	ND	ND	3	0.8 J	0.9 J	NR	NR
n-Butane	ND	20	7	8	0.6	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	0.77 J
p-Isopropyltoluene	ND	ND	ND	2 J	0.6 J	ND	NR	NR
n-Propylbenzene	ND	ND	ND	2	0.7 J	0.8 J	ND	0.32 J
Propylene	ND	ND	ND	ND	ND	0.4	NR	NR
Styrene	ND	ND	ND	1	ND	ND	ND	ND
tert-Amyl methyl ether	ND	ND	ND	2	0.5 J	0.5 J	NR	NR
tert-Butyl Alcohol	ND	ND	ND	2	0.5 J	0.5 J	NR	NR
Tetrachloroethene	ND	4	ND	26	210	2	ND	79
Tetrahydrofuran	ND	ND	ND	7	1	1	ND	0.93 J
Toluene	ND	2	3	12	0.9	1	0.82 J	ND
Total Xylenes	ND	ND	ND	18	3	4	NR	NR
trans-1,2-Dichloroethene	ND	ND	ND	2	0.6 J	0.4 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	2	ND	ND	ND	ND
Trichloroethene	3	1	ND	3	120	1 J	ND	200
Trichlorofluoromethane	ND	2	ND	4	3	2	NR	NR
Vinyl Acetate	ND	1	ND	ND	0.6 J	ND	NR	NR
Vinyl Bromide	ND	ND	ND	2	0.6 J	0.6 J	NR	NR
Vinyl Chloride	ND	ND	ND	1	0.4 J	0.3 J	ND	ND

Notes:

µg/m³ = micrograms per cubic meter

NR = Not Recorded

NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE1021							
Sample Date	09/16/10	12/22/10	03/30/11	06/28/11	09/06/11	10/14/11	03/30/12	06/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	3	ND	NA	2	3	3	ND	0.68 J
1,1,2,2-Tetrachloroethane	ND	ND	NA	1 J	0.8 J	0.8 J	ND	ND
1,1,2-Trichloroethane	ND	ND	NA	1 J	0.6 J	0.6 J	ND	ND
1,1-Dichloroethane	ND	ND	NA	0.8 J	0.5 J	0.5 J	ND	ND
1,1-Dichloroethene	ND	ND	NA	0.7 J	0.4 J	0.4 J	ND	ND
1,2,3-Trichloropropane	ND	ND	NA	1 J	0.6 J	0.8 J	NR	NR
1,2,3-Trimethylbenzene	10	ND	NA	5	1	2	NR	NR
1,2,4-Trichlorobenzene	ND	ND	NA	1 J	ND	ND	ND	ND
1,2,4-Trimethylbenzene	35	1	NA	18	3	5	0.77 J	1.5 J
1,2-Dibromoethane	ND	ND	NA	1 J	ND	0.8 J	ND	ND
1,2-Dichlorobenzene	ND	ND	NA	0.8 J	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	NA	0.8	0.4 J	0.4 J	ND	ND
1,2-Dichloropropane	ND	ND	NA	0.9 J	0.6 J	0.6 J	ND	ND
1,3,5-Trimethylbenzene	7	ND	NA	4	0.8 J	1	ND	ND
1,3-Butadiene	ND	ND	NA	NA	0.3 J	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	NA	0.7 J	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	NA	0.6 J	ND	ND	ND	ND
1,4-Dioxane	ND	ND	NA	0.8	ND	0.4 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	ND	1	NA	4	1	2	ND	ND
2-Hexanone	ND	ND	NA	0.9	0.6 J	0.5 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	NA	0.6 J	ND	ND	ND	ND
4-ethyltoluene	5	ND	NA	4	0.8 J	1	0.64 J	0.72 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	6	5	NA	14	4	7	7.8	9.9 J
alpha-Chlorotoluene	ND	ND	NA	0.7 J	ND	ND	ND	ND
Acrylonitrile	ND	ND	NA	0.5	0.4 J	ND	NR	NR
Benzene	ND	ND	NA	1	0.4 J	0.5 J	ND	ND
Benzyl Chloride	ND	ND	NA	ND	ND	ND	NR	NR
Bromodichloromethane	ND	ND	NA	2	0.8 J	0.7 J	ND	ND
Bromoform	ND	ND	NA	1 J	ND	1 J	ND	ND
Bromomethane	ND	ND	NA	0.8	0.5 J	0.5 J	ND	ND
Carbon Disulfide	ND	ND	NA	0.7	0.5 J	0.4 J	ND	ND
Carbon Tetrachloride	ND	ND	NA	2	1 J	1 J	ND	ND
Chlorobenzene	ND	ND	NA	0.9	ND	0.5 J	ND	ND
Chlorodibromomethane	ND	ND	NA	1 J	ND	0.9 J	NR	NR
Chloroethane	ND	ND	NA	0.6	0.4 J	0.3 J	ND	ND
Chloroform	4	ND	NA	3	5	4	0.75 J	1.4 J
Chloromethane	ND	0.9	NA	1	0.4	0.4	ND	ND
cis-1,2-Dichloroethene	ND	ND	NA	0.7 J	0.5 J	0.5 J	ND	ND
cis-1,3-Dichloropropene	ND	ND	NA	0.7 J	ND	ND	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	NA	0.6 J	ND	0.4 J	ND	ND
Dichlorodifluoromethane	ND	2	NA	3	2	2	ND	ND
Diisopropyl ether	ND	ND	NA	NA	ND	ND	NR	NR
Ethanol	2	3	NA	8	2	4	3.0 J	ND
Ethyl Acetate	ND	ND	NA	NA	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	NA	0.7 J	ND	ND	NR	NR
Ethylbenzene	3	ND	NA	4	0.8 J	1	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	1.1 J	2.0 J
Freon 113	ND	ND	NA	2	1 J	1 J	ND	ND
Freon 114	ND	ND	NA	2	1 J	1 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	1.9 J	2.4 J
Heptane	ND	ND	NA	1	ND	0.5 J	ND	ND
Hexachlorobutadiene	ND	ND	NA	3	1 J	1 J	ND	ND
Hexane	ND	1	NA	1	0.8	0.8	ND	ND
iso-Octane	ND	ND	NA	1	0.6 J	0.6 J	NR	NR
Isopropylbenzene	ND	ND	NA	1	ND	0.6 J	NR	NR
Isoproyl alcohol	ND	0.6	NA	2	1	0.8	NR	NR
m,p-Xylene	NR	NR	NA	NR	NR	NR	0.63 J	0.97 J
Methyl Methacrylate	ND	ND	NA	0.6 J	ND	ND	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	NA	0.7	0.5 J	0.4 J	ND	ND
Methylene Chloride	ND	6	NA	4	3	3	1.3 J	1.0 J
MIBK	ND	ND	NA	0.8 J	ND	ND	NR	NR
Naphthalene	3	ND	NA	5	0.8 J	1	NR	NR
n-Butane	4	2	NA	1	0.4 J	ND	NR	NR
o-Xylene	NR	NR	NA	NR	NR	NR	ND	ND
p-Isopropyltoluene	ND	ND	NA	1 J	ND	ND	NR	NR
n-Propylbenzene	3	ND	NA	2	0.6 J	0.9 J	ND	ND
Propylene	ND	ND	NA	ND	ND	ND	NR	NR
Styrene	ND	ND	NA	0.7 J	ND	ND	ND	ND
tert-Amyl methyl ether	ND	ND	NA	0.7 J	ND	0.4 J	NR	NR
tert-Butyl Alcohol	ND	ND	NA	1	0.5 J	0.5 J	NR	NR
Tetrachloroethene	6	NR	NA	3	6	6	ND	1.6 J
Tetrahydrofuran	6	0.6	NA	5	1	1	ND	ND
Toluene	3	1	NA	4	0.8	1	0.66 J	ND
Total Xylenes	22	ND	NA	20	3	6	NR	NR
trans-1,2-Dichloroethene	ND	ND	NA	0.7 J	0.4 J	0.4 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	NA	0.7 J	ND	ND	ND	ND
Trichloroethene	68	3	NA	34	78	52	10	26
Trichlorofluoromethane	ND	1	NA	2	2	2	NR	NR
Vinyl Acetate	ND	ND	NA	ND	0.6 J	ND	NR	NR
Vinyl Bromide	ND	ND	NA	1	0.6 J	0.6 J	NR	NR
Vinyl Chloride	ND	ND	NA	0.5 J	0.4 J	0.3 J	ND	ND

Notes:

µg/m³ = micrograms per cubic meter

NR = Not Recorded

NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE10D							
Sample Date	09/16/10	12/08/10	03/30/11	06/29/11	09/09/11	12/14/11	03/19/12	06/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	2	2	2	8	8	8	2.4 J	2.2 J
1,1,2,2-Tetrachloroethane	ND	ND	ND	1 J	0.9 J	1 J	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	1 J	0.6 J	0.8 J	ND	ND
1,1-Dichloroethane	ND	ND	ND	1	0.6 J	0.7 J	ND	ND
1,1-Dichloroethene	ND	ND	ND	1	0.6 J	0.6 J	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	0.7 J	0.9 J	NR	NR
1,2,3-Trimethylbenzene	5	ND	ND	7	1	2	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	2 J	ND	0.8 J	ND	ND
1,2,4-Trimethylbenzene	18	2	2	22	4	6	ND	2.3 J
1,2-Dibromoethane	ND	ND	ND	1 J	ND	1 J	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	1 J	ND	0.8 J	ND	ND
1,2-Dichloroethane	ND	ND	ND	0.9	0.5 J	0.5 J	ND	ND
1,2-Dichloropropane	ND	ND	ND	1	0.6 J	0.6 J	ND	ND
1,3,5-Trimethylbenzene	4	ND	ND	4	ND	1	ND	ND
1,3-Butadiene	1	ND	ND	ND	0.3 J	0.4 J	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	0.8 J	ND	0.7 J	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	0.8 J	ND	0.6 J	ND	ND
1,4-Dioxane	ND	ND	ND	1	ND	0.6 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	4	0.9	0.7	5	1	1	ND	ND
2-Hexanone	ND	ND	ND	0.9 J	0.6 J	0.6 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	0.7 J	0.4 J	ND	ND	ND
4-ethyltoluene	3	ND	ND	4	1	1	0.36 J	1.0 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	10	8	6	12	4	4	8.4	6.0 J
alpha-Chlorotoluene	ND	ND	ND	0.9 J	ND	0.6 J	ND	ND
Acrylonitrile	ND	ND	ND	0.5	0.4 J	ND	NR	NR
Benzene	ND	ND	ND	1	0.5 J	0.9	ND	ND
Benzyl Chloride	ND	ND	ND	ND	ND	ND	NR	NR
Bromodichloromethane	ND	ND	ND	2	0.9 J	1 J	ND	ND
Bromoform	ND	ND	ND	2 J	ND	1 J	ND	ND
Bromomethane	ND	ND	ND	1	0.6 J	0.5 J	ND	ND
Carbon Disulfide	ND	ND	ND	0.9	0.5 J	0.5 J	ND	ND
Carbon Tetrachloride	ND	ND	ND	2	2	2	ND	ND
Chlorobenzene	ND	ND	ND	1 J	ND	0.7 J	ND	ND
Chlorodibromomethane	ND	ND	ND	2 J	0.9 J	1 J	NR	NR
Chloroethane	ND	ND	ND	0.7	0.4 J	0.4 J	ND	ND
Chloroform	11	2	3	9	14	17	19	19
Chloromethane	ND	1	0.6	1	0.4	0.4	ND	ND
cis-1,2-Dichloroethene	ND	0.9	ND	1	0.5 J	0.9	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	0.9 J	ND	0.6 J	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	ND	0.7 J	0.5 J	0.4 J	ND	ND
Dichlorodifluoromethane	2	3	2	4	3	3	ND	ND
Diisopropyl ether	ND	ND	ND	ND	ND	ND	NR	NR
Ethanol	5	3	4	3	1	1	ND	ND
Ethyl Acetate	ND	ND	ND	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	0.8 J	0.4 J	0.5 J	NR	NR
Ethylbenzene	3	ND	ND	4	ND	1	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	4.8	5.8
Freon 113	ND	ND	ND	3	2	2	ND	ND
Freon 114	ND	ND	ND	2	1 J	1 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	2.6 J	2.1 J
Heptane	ND	ND	ND	1	0.4 J	0.6 J	ND	ND
Hexachlorobutadiene	ND	ND	ND	3	1 J	2 J	ND	ND
Hexane	1	ND	ND	1	0.8	0.5 J	ND	ND
Iso-Octane	ND	ND	ND	1	1	0.7 J	NR	NR
Isopropylbenzene	ND	ND	ND	1	0.5 J	0.8 J	NR	NR
Isoproyl alcohol	1	ND	ND	2	1	1	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	ND	1.4 J
Methyl Methacrylate	ND	ND	ND	0.8 J	0.4 J	0.4 J	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	ND	0.9	0.5 J	0.4 J	ND	ND
Methylene Chloride	7	2	ND	4	2	0.9	1.0 J	ND
MIBK	ND	ND	ND	1	0.4 J	0.4 J	NR	NR
Naphthalene	3	ND	ND	6	3	2	NR	NR
n-Butane	ND	2	ND	2	2	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	ND
p-Isopropyltoluene	ND	ND	ND	1	ND	0.7 J	NR	NR
n-Propylbenzene	ND	ND	ND	3	0.7 J	1	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	NR	NR
Styrene	ND	ND	ND	0.8 J	ND	0.5 J	ND	ND
tert-Amyl methyl ether	ND	ND	ND	0.9 J	0.5 J	0.5 J	NR	NR
tert-Butyl Alcohol	ND	ND	ND	1	0.4 J	0.6	NR	NR
Tetrachloroethene	19	3	9	25	23	39	5.9	6.5
Tetrahydrofuran	36	7	3	6	1	1	0.54 J	0.74 J
Toluene	3	ND	ND	4	0.8	2	0.49 J	0.99 J
Total Xylenes	15	ND	ND	22	2 J	7	NR	NR
trans-1,2-Dichloroethene	ND	ND	ND	1	0.5 J	0.5 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	0.8 J	ND	0.5 J	ND	ND
Trichloroethene	110	12	31	84	81	87	34	30
Trichlorofluoromethane	5	2	6	9	12	13	NR	NR
Vinyl Acetate	ND	ND	ND	2	ND	ND	NR	NR
Vinyl Bromide	ND	ND	ND	1	0.6 J	0.6 J	NR	NR
Vinyl Chloride	ND	ND	ND	0.6	0.4 J	0.3 J	ND	ND

Notes:

µg/m³ = micrograms per cubic meter

NR = Not Recorded

NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE108							
Sample Date	09/14/10	12/06/10	03/30/11	06/28/11	09/06/11	12/14/11	03/16/12	05/31/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	ND	ND	ND	0.8 J	8	6	ND	1.4 J
1,1,2,2-Tetrachloroethane	ND	ND	ND	1 J	0.9 J	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	0.7 J	0.7 J	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	0.6 J	2	2	ND	0.75 J
1,1-Dichloroethene	ND	ND	ND	0.6 J	0.6 J	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	0.9 J	0.8 J	0.6 J	NR	NR
1,2,3-Trimethylbenzene	ND	ND	ND	4	1	2	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	1 J	ND	ND	ND	ND
1,2,4-Trimethylbenzene	2	ND	1	14	3	5	2.2 J	3.3 J
1,2-Dibromoethane	ND	ND	ND	0.9 J	0.8 J	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	0.7 J	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	0.7 J	0.5 J	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	0.7 J	0.6 J	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	2	0.9 J	1	ND	ND
1,3-Butadiene	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	1.1 J	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	0.5 J	0.6 J	0.4 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	2	ND	ND	4	1	1	4.7 J	5.2 J
2-Hexanone	ND	ND	ND	0.6 J	0.5 J	ND	ND	0.24 J
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	0.4 J	0.4 J	ND	ND	ND
4-ethyltoluene	ND	ND	ND	3	0.8 J	1	1.5 J	1.4 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	13	6	6	17	4	3	65	27
alpha-Chlorotoluene	ND	ND	ND	0.6 J	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	0.4 J	0.4 J	ND	NR	NR
Benzene	2	ND	ND	1	0.6 J	0.5 J	ND	ND
Benzyl Chloride	ND	ND	ND	ND	ND	ND	NR	NR
Bromodichloromethane	ND	ND	ND	1 J	0.8 J	ND	ND	ND
Bromoform	ND	ND	ND	1 J	1 J	ND	ND	ND
Bromomethane	ND	ND	ND	0.6 J	0.6 J	0.4 J	ND	ND
Carbon Disulfide	ND	ND	ND	0.6 J	0.6 J	0.5 J	ND	ND
Carbon Tetrachloride	ND	ND	ND	1	1 J	0.9 J	ND	ND
Chlorobenzene	ND	ND	ND	0.6 J	0.5 J	0.5 J	ND	ND
Chlorodibromomethane	ND	ND	ND	1 J	0.9 J	ND	NR	NR
Chloroethane	ND	ND	ND	0.5 J	0.5 J	0.3 J	ND	ND
Chloroform	ND	ND	ND	0.8 J	3	2	19	1.1 J
Chloromethane	1	1	1	1	0.4	0.4 J	ND	ND
cis-1,2-Dichloroethene	1	ND	1	0.5 J	16	12	18	16
cis-1,3-Dichloropropene	ND	ND	ND	0.5 J	ND	ND	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	1	ND	ND	0.8	0.5 J	ND	ND	ND
Dichlorodifluoromethane	3	2	2	3	2	2	ND	ND
Diisopropyl ether	3	ND	ND	ND	ND	ND	NR	NR
Ethanol	17	3	6	14	2	1	ND	5.9 J
Ethyl Acetate	3	ND	ND	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	0.6 J	0.5 J	ND	NR	NR
Ethylbenzene	1	ND	ND	3	0.8 J	1	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	ND	1.2 J
Freon 113	ND	ND	ND	2	2	1 J	ND	ND
Freon 114	ND	ND	ND	1 J	1 J	0.8 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	2.0 J	2.5 J
Heptane	2	ND	ND	1	0.5 J	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	2 J	1 J	1 J	ND	ND
Hexane	6	ND	ND	3	1	0.6 J	ND	ND
iso-Octane	2	ND	ND	1	0.7 J	0.5 J	NR	NR
Isopropylbenzene	ND	ND	ND	0.8 J	0.6 J	ND	NR	NR
isoproyl alcohol	4	ND	3	2	1	0.5 J	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	1.8 J	1.6 J
Methyl Methacrylate	ND	ND	ND	0.5 J	0.4 J	ND	NR	NR
Methyl-tert-Butyl-Ether	1	ND	ND	0.7 J	0.7 J	0.6 J	ND	ND
Methylene Chloride	29	ND	2	8	4	1	9.0	1.0 J
MIBK	ND	ND	ND	ND	0.5 J	ND	NR	NR
Naphthalene	ND	ND	ND	7	0.9 J	2	NR	NR
n-Butane	3	1	1	3	0.6	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	1.2 J
p-Isopropyltoluene	ND	ND	ND	0.9 J	0.6 J	ND	NR	NR
n-Propylbenzene	ND	ND	ND	2	0.7 J	0.9 J	ND	0.45 J
Propylene	ND	ND	ND	2	ND	ND	NR	NR
Styrene	ND	ND	ND	0.6 J	ND	ND	ND	ND
tert-Amyl methyl ether	ND	ND	ND	0.6 J	0.5 J	ND	NR	NR
tert-Butyl Alcohol	ND	ND	ND	0.8	0.7	0.9	NR	NR
Tetrachloroethene	ND	ND	2	1 J	420	590	140	200
Tetrahydrofuran	1	ND	ND	4	1	1	3.4 J	2.9
Toluene	6	ND	1	6	0.9	1	ND	0.65 J
Total Xylenes	6	ND	ND	15	3	5	NR	NR
trans-1,2-Dichloroethene	ND	ND	ND	0.6 J	1	1	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	0.5 J	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	0.8 J	100	97	25	37
Trichlorofluoromethane	2	ND	1	2	2	2	NR	NR
Vinyl Acetate	3	ND	ND	ND	ND	ND	NR	NR
Vinyl Bromide	ND	ND	ND	0.7 J	0.7 J	ND	NR	NR
Vinyl Chloride	ND	ND	ND	0.4 J	0.4 J	0.3 J	ND	ND

Notes:

µg/m³ = micrograms per cubic meter

NR = Not Recorded

NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE103D							
Sample Date	09/16/10	12/08/10	03/30/11	06/28/11	09/06/11	12/14/11	03/10/12	06/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	ND	12	ND	2.7	29	92	2.4 J	2.8 J
1,1,2,2-Tetrachloroethane	ND	ND	ND	2 J	2 J	12 J	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	1 J	2 J	10 J	ND	ND
1,1-Dichloroethane	ND	2	2	1 J	4	9	1.6 J	1.5 J
1,1-Dichloroethene	ND	ND	ND	1 J	2	6 J	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	2 J	2 J	11 J	NR	NR
1,2,3-Trimethylbenzene	5	ND	2	4	ND	7 J	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	9 J	ND	ND
1,2,4-Trimethylbenzene	8	2	7	12	ND	9 J	ND	2.4 J
1,2-Dibromoethane	ND	ND	ND	2 J	2 J	11 J	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	9 J	ND	ND
1,2-Dichloroethane	ND	ND	ND	1 J	1 J	6 J	ND	ND
1,2-Dichloropropane	ND	ND	ND	1 J	1 J	8 J	ND	ND
1,3,5-Trimethylbenzene	ND	ND	2	3	ND	8 J	ND	ND
1,3-Butadiene	ND	ND	ND	1	0.8 J	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	8 J	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	8 J	ND	ND
1,4-Dioxane	ND	ND	ND	0.9 J	1	6 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	4	1	4	5	2	6 J	ND	ND
2-Hexanone	ND	ND	ND	1 J	1 J	5 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	0.8 J	1 J	4 J	ND	ND
4-ethyltoluene	ND	ND	ND	3	ND	8 J	ND	1.2 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	10	6	21	19	9	10	13 J	11 J
alpha-Chlorotoluene	ND	ND	ND	ND	ND	8 J	ND	ND
Acrylonitrile	ND	ND	ND	0.5 J	0.8 J	ND	NR	NR
Benzene	ND	ND	12	1	1 J	6 J	ND	ND
Benzyl Chloride	ND	ND	ND	ND	ND	ND	NR	NR
Bromodichloromethane	ND	ND	ND	2 J	2 J	ND	ND	ND
Bromoform	ND	ND	ND	ND	2 J	14 J	ND	ND
Bromomethane	ND	ND	ND	1 J	1 J	6 J	ND	ND
Carbon Disulfide	ND	ND	ND	1 J	1 J	6 J	ND	ND
Carbon Tetrachloride	ND	ND	ND	2 J	2 J	12 J	ND	ND
Chlorobenzene	ND	ND	ND	1 J	1 J	8 J	ND	ND
Chlorodibromomethane	ND	ND	ND	2 J	2 J	14 J	NR	NR
Chloroethane	ND	ND	ND	0.9 J	1 J	5 J	ND	ND
Chloroform	ND	1	ND	1 J	6	29	3.6 J	1.6
Chloromethane	3	0.7	1	2	0.9	4 J	ND	ND
cis-1,2-Dichloroethene	ND	92	ND	1 J	360	160	290	230
cis-1,3-Dichloropropene	ND	ND	ND	ND	1 J	6 J	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	5	1 J	0.9 J	5 J	ND	ND
Dichlorodifluoromethane	6	2	2	4	3	10	ND	ND
Diisopropyl ether	5	ND	ND	ND	1 J	6 J	NR	NR
Ethanol	6	5	56	10	2	9	5.5 J	ND
Ethyl Acetate	5	ND	ND	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	1 J	1 J	5 J	NR	NR
Ethylbenzene	ND	ND	8	3	0.9 J	7 J	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	ND	ND
Freon 113	ND	10	10	3 J	12	20	ND	ND
Freon 114	ND	ND	ND	2 J	2 J	12 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	ND	ND
Heptane	ND	ND	8	1 J	1 J	5 J	ND	ND
Hexachlorobutadiene	ND	ND	ND	4 J	3 J	18 J	ND	ND
Hexane	3	1	20	2	3	6 J	ND	ND
Iso-Octane	ND	ND	ND	1 J	1 J	8 J	NR	NR
Isopropylbenzene	ND	ND	ND	1 J	1 J	8 J	NR	NR
Isoproyl alcohol	5	ND	5	2	2	5 J	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	ND	1.3 J
Methyl Methacrylate	ND	ND	ND	1 J	1 J	5 J	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	ND	1 J	2	6 J	ND	ND
Methylene Chloride	7	3	4	4	19	11	ND	ND
MIBK	ND	ND	ND	1 J	1 J	6 J	NR	NR
Naphthalene	ND	ND	ND	3	ND	5 J	NR	NR
n-Butane	2	2	67	2	2	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	ND
p-Isopropyltoluene	ND	ND	ND	1 J	ND	7 J	NR	NR
n-Propylbenzene	ND	ND	1	2	ND	6 J	ND	ND
Propylene	ND	ND	9	2	ND	ND	NR	NR
Styrene	ND	ND	ND	ND	ND	5 J	ND	ND
tert-Amyl methyl ether	ND	ND	ND	1 J	1 J	6 J	NR	NR
tert-Butyl Alcohol	3	ND	ND	1 J	0.9 J	5 J	NR	NR
Tetrachloroethene	9	1500	ND	3	1600	6700	3800	3200
Tetrahydrofuran	4	1	ND	6	2	6	2.0 J	ND
Toluene	4	2	40	4	0.9 J	6 J	ND	ND
Total Xylenes	ND	ND	34	16	3 J	21 J	NR	NR
trans-1,2-Dichloroethene	ND	1	ND	1 J	3	7 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	5 J	ND	ND
Trichloroethene	2	92	ND	2 J	230	140	180	200
Trichlorofluoromethane	6	1	3	3	3	11	NR	NR
Vinyl Acetate	4	ND	ND	ND	ND	ND	NR	NR
Vinyl Bromide	ND	ND	ND	2 J	1 J	8 J	NR	NR
Vinyl Chloride	ND	2	ND	0.8 J	4	5 J	ND	ND

Notes:
µg/m³ = micrograms per cubic meter
NR = Not Recorded
NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE1[illegible]							
Sample Date	09/16/10	12/06/10	03/30/11	06/28/11	09/06/11	10/14/11	01/18/12	05/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	6	NR	NA	1 J	4	3	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	NA	1 J	0.7 J	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	NA	1 J	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	NA	1 J	0.6 J	0.5 J	ND	ND
1,1-Dichloroethene	ND	ND	NA	1 J	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	NA	1 J	ND	ND	NR	NR
1,2,3-Trimethylbenzene	4	ND	NA	ND	ND	0.7 J	NR	NR
1,2,4-Trichlorobenzene	ND	ND	NA	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	12	1	NA	ND	ND	2	ND	ND
1,2-Dibromoethane	ND	ND	NA	2 J	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	NA	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	NA	1 J	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	NA	1 J	ND	ND	ND	ND
1,3,5-Trimethylbenzene	3	ND	NA	ND	ND	0.5 J	ND	ND
1,3-Butadiene	ND	ND	NA	1	0.4 J	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	NA	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	NA	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	NA	0.8 J	0.4 J	ND	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	3	0.6	NA	3	1	0.8	ND	ND
2-Hexanone	ND	ND	NA	0.9 J	ND	ND	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	NA	0.9	0.3 J	ND	ND	ND
4-ethyltoluene	2	ND	NA	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	11	3	NA	21	5	5	4.8 J	6.5 J
alpha-Chlorotoluene	ND	ND	NA	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	NA	0.6 J	0.3 J	ND	NR	NR
Benzene	1	ND	NA	1 J	0.4 J	0.4 J	ND	ND
Benzyl Chloride	ND	ND	NA	ND	ND	ND	NR	NR
Bromodichloromethane	ND	ND	NA	2 J	0.8 J	ND	ND	ND
Bromoform	ND	ND	NA	ND	ND	ND	ND	ND
Bromomethane	ND	ND	NA	1 J	0.4 J	ND	ND	ND
Carbon Disulfide	ND	ND	NA	1 J	0.5 J	0.5 J	ND	ND
Carbon Tetrachloride	ND	ND	NA	2 J	1 J	1 J	ND	ND
Chlorobenzene	ND	ND	NA	1 J	0.5 J	ND	ND	ND
Chlorodibromomethane	ND	ND	NA	2 J	ND	ND	NR	NR
Chloroethane	ND	ND	NA	0.9 J	0.3 J	ND	ND	ND
Chloroform	2	ND	NA	1 J	3	1	ND	ND
Chloromethane	ND	0.5	NA	2	0.5	0.8	ND	ND
cis-1,2-Dichloroethene	2	0.8	NA	0.9 J	2	3	0.90 J	ND
cis-1,3-Dichloropropene	ND	ND	NA	1 J	ND	ND	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	0.8	ND	NA	1 J	ND	ND	ND	ND
Dichlorodifluoromethane	2	2	NA	3	2	2	ND	ND
Diisopropyl ether	5	ND	NA	ND	ND	ND	NR	NR
Ethanol	19	1	NA	12	2	3	ND	1.2 J
Ethyl Acetate	5	ND	NA	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	NA	1 J	ND	ND	NR	NR
Ethylbenzene	2	ND	NA	1 J	0.6 J	0.6 J	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	1.2 J	1.0 J
Freon 113	ND	ND	NA	3 J	2	2	ND	ND
Freon 114	ND	ND	NA	2 J	0.9 J	0.7 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	2.4 J	2.1 J
Heptane	1	ND	NA	1 J	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	NA	2 J	ND	ND	ND	ND
Hexane	10	ND	NA	12	0.5 J	0.4 J	0.82 J	ND
iso-Octane	ND	ND	NA	1 J	0.5 J	0.5 J	NR	NR
Isopropylbenzene	ND	ND	NA	1 J	ND	ND	NR	NR
Isopropyl alcohol	6	ND	NA	7	0.7	0.5	NR	NR
m,p-Xylene	NR	NR	NA	NR	NR	NR	ND	ND
Methyl Methacrylate	ND	ND	NA	0.9 J	ND	ND	NR	NR
Methyl-tert-Butyl-Ether	1	ND	NA	4	ND	ND	ND	ND
Methylene Chloride	51	ND	NA	65	1	0.9	2.6	ND
MIBK	ND	ND	NA	1 J	ND	ND	NR	NR
Naphthalene	ND	ND	NA	ND	ND	0.7 J	NR	NR
n-Butane	2	0.6	NA	2	0.5 J	ND	NR	NR
o-Xylene	NR	NR	NA	NR	NR	NR	ND	ND
p-isopropyltoluene	ND	ND	NA	ND	ND	ND	NR	NR
n-Propylbenzene	1	ND	NA	ND	ND	ND	ND	ND
Propylene	ND	ND	NA	ND	ND	0.4	NR	NR
Styrene	ND	ND	NA	ND	ND	ND	ND	ND
tert-Amyl methyl ether	ND	ND	NA	1 J	ND	ND	NR	NR
tert-Butyl Alcohol	ND	ND	NA	0.9 J	0.3 J	0.3 J	NR	NR
Tetrachloroethene	96	16	NA	2 J	54	33	12	ND
Tetrahydrofuran	4	1	NA	1	1	0.8	0.58 J	ND
Toluene	7	ND	NA	2	1	0.6 J	0.59 J	ND
Total Xylenes	12	ND	NA	3 J	3	2 J	NR	NR
trans-1,2-Dichloroethene	ND	ND	NA	1 J	0.5 J	0.4 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	NA	ND	ND	ND	ND	ND
Trichloroethene	73	12	NA	2 J	44	35	8.6	ND
Trichlorofluoromethane	2	ND	NA	3	2	2	NR	NR
Vinyl Acetate	2	ND	NA	ND	ND	0.5 J	NR	NR
Vinyl Bromide	ND	ND	NA	1 J	0.5 J	ND	NR	NR
Vinyl Chloride	ND	ND	NA	0.7 J	0.3 J	0.3 J	ND	ND

Notes:
µg/m³ = micrograms per cubic meter
NR = Not Recorded
NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE104D							
Sample Date	09/16/10	12/22/10	03/30/11	06/28/11	09/06/11	10/14/11	02/10/12	06/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	ND	270	ND	370	620	440	520	580
1,1,2,2-Tetrachloroethane	ND	ND	ND	1 J	ND	9 J	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	2 J	7 J	7 J	ND	ND
1,1-Dichloroethane	ND	66	ND	56	110	77	87	95
1,1-Dichloroethene	ND	ND	ND	3	7 J	7 J	3.0 J	5.0 J
1,2,3-Trichloropropane	ND	ND	ND	2 J	7 J	7 J	NR	NR
1,2,3-Trimethylbenzene	ND	ND	ND	7	ND	6 J	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	3	ND	ND	21	ND	7 J	ND	4.0 J
1,2-Dibromoethane	ND	ND	ND	2 J	ND	9 J	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	1 J	ND	7 J	ND	ND
1,2-Dichloroethane	ND	ND	ND	1 J	5 J	5 J	ND	ND
1,2-Dichloropropane	ND	ND	ND	2 J	6 J	5 J	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	4	ND	5 J	ND	ND
1,3-Butadiene	ND	ND	ND	ND	3 J	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	1 J	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	2	9	4 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	ND	ND	ND	7	5 J	3 J	ND	ND
2-Hexanone	ND	ND	ND	1 J	8	ND	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	1 J	4 J	ND	ND	ND
4-ethyltoluene	ND	ND	ND	4	ND	5 J	ND	1.7 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	10	ND	6	26	10	8	46	12 J
alpha-Chlorotoluene	ND	ND	ND	1 J	ND	5 J	ND	ND
Acrylonitrile	ND	ND	ND	0.8 J	4	ND	NR	NR
Benzene	ND	ND	ND	2	4 J	4 J	ND	ND
Benzyl Chloride	ND	ND	ND	1 J	ND	ND	NR	NR
Bromodichloromethane	ND	ND	ND	2 J	8 J	7 J	ND	ND
Bromoform	ND	ND	ND	3 J	ND	11 J	ND	ND
Bromomethane	ND	ND	ND	1 J	6 J	5 J	ND	ND
Carbon Disulfide	ND	ND	ND	1	5 J	4 J	ND	ND
Carbon Tetrachloride	ND	ND	ND	3	9 J	8 J	ND	ND
Chlorobenzene	ND	ND	ND	1 J	ND	5 J	ND	ND
Chlorodibromomethane	ND	ND	ND	2 J	9 J	10 J	NR	NR
Chloroethane	ND	ND	ND	1 J	4 J	4 J	ND	ND
Chloroform	ND	ND	ND	3	10	9 J	ND	2.2 J
Chloromethane	0.9	ND	ND	2	3 J	3 J	ND	ND
cis-1,2-Dichloroethene	ND	1200	ND	1000	3600	2100	2200	2800 J
cis-1,3-Dichloropropene	ND	ND	ND	1 J	ND	ND	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	ND	2	4 J	ND	ND	ND
Dichlorodifluoromethane	2	ND	ND	4	9 J	8 J	ND	ND
Diisopropyl ether	ND	ND	ND	ND	ND	ND	NR	NR
Ethanol	4	4	6	20	10	ND	11 J	2.2 J
Ethyl Acetate	ND	ND	ND	ND	6 J	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	1 J	4 J	ND	NR	NR
Ethylbenzene	ND	ND	ND	4	ND	5 J	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	ND	ND
Freon 113	ND	560	560	280	260	550	720	980
Freon 114	ND	ND	ND	2 J	10 J	9 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	ND	ND
Heptane	ND	ND	ND	2	5 J	5 J	ND	ND
Hexachlorobutadiene	ND	ND	ND	5	ND	14 J	ND	ND
Hexane	2	ND	2	7	5 J	4 J	ND	ND
iso-Octane	ND	ND	ND	3	7 J	6 J	NR	NR
Isopropylbenzene	ND	ND	ND	2 J	ND	6 J	NR	NR
Isoproyl alcohol	1	ND	ND	7	6	4 J	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	ND	1.1 J
Methyl Methacrylate	ND	ND	ND	1 J	4 J	ND	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	ND	3	4 J	4 J	ND	ND
Methylene Chloride	6	ND	14	28	9	6 J	ND	ND
MIBK	ND	ND	ND	1 J	5 J	ND	NR	NR
Naphthalene	ND	ND	ND	7	ND	5 J	NR	NR
n-Butane	ND	ND	3	5	4 J	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	ND
p-Isopropyltoluene	ND	ND	ND	2 J	ND	ND	NR	NR
n-Propylbenzene	ND	ND	ND	3	ND	ND	ND	ND
Propylene	ND	ND	ND	ND	ND	3 J	NR	NR
Styrene	ND	ND	ND	1 J	ND	ND	ND	ND
tert-Amyl methyl ether	ND	ND	ND	1 J	5 J	4 J	NR	NR
tert-Butyl Alcohol	ND	ND	ND	2	4 J	3 J	NR	NR
Tetrachloroethene	ND	2400	ND	1400	5800	6300	3800	4300
Tetrahydrofuran	ND	ND	ND	7	4 J	3 J	2.8 J	ND
Toluene	ND	ND	ND	8	4 J	4 J	ND	ND
Total Xylenes	ND	ND	ND	20	ND	14 J	NR	NR
trans-1,2-Dichloroethene	ND	13	ND	14	25	22	26	31
trans-1,3-Dichloropropene	ND	ND	ND	1 J	ND	ND	ND	ND
Trichloroethene	ND	470	ND	420	1600	1900	1800	1400
Trichlorofluoromethane	ND	ND	ND	3	9 J	7 J	NR	NR
Vinyl Acetate	ND	ND	ND	ND	5 J	4 J	NR	NR
Vinyl Bromide	ND	ND	ND	2 J	6 J	ND	NR	NR
Vinyl Chloride	ND	ND	ND	2	5	5 J	ND	ND

Notes:
µg/m³ = micrograms per cubic meter
NR = Not Recorded
NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE10SI							
Sample Date	09/16/10	12/08/10	03/30/11	06/28/11	09/06/11	10/14/11	01/10/12	05/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	ND	24	1	1 J	22	25	31	13
1,1,2,2-Tetrachloroethane	ND	ND	ND	0.8 J	1 J	0.9 J	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	0.7 J	0.8 J	0.9 J	ND	ND
1,1-Dichloroethane	ND	6	ND	0.6 J	5	7	4.2	5.6
1,1-Dichloroethene	ND	ND	ND	0.6 J	0.6 J	0.5 J	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	0.7 J	0.8 J	0.9 J	NR	NR
1,2,3-Trimethylbenzene	14	ND	1	0.7 J	1	2	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	1 J	ND	ND
1,2,4-Trimethylbenzene	44	3	4	1	3	7	1.4 J	1.7 J
1,2-Dibromoethane	ND	ND	ND	0.9 J	ND	0.8 J	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	0.9 J	ND	0.8 J	ND	ND
1,2-Dichloroethane	ND	ND	ND	0.7 J	0.6 J	0.5 J	ND	ND
1,2-Dichloropropane	ND	ND	ND	0.7 J	0.5 J	0.6 J	ND	ND
1,3,5-Trimethylbenzene	10	ND	1	2	0.9 J	1	0.48 J	ND
1,3-Butadiene	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.7 J	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.7 J	ND	ND
1,4-Dioxane	ND	ND	ND	0.7 J	0.7 J	0.6 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	4	1	6	6	2	1	3.6 J	ND
2-Hexanone	ND	ND	ND	0.7 J	0.6 J	0.4 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	0.4 J	ND	ND	ND	ND
4-ethyltoluene	7	ND	ND	3	0.8 J	1	0.94 J	0.53 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	11	3	15	27	9	4	25	4.7 J
alpha-Chlorotoluene	ND	ND	ND	0.5 J	ND	0.7 J	ND	ND
Acrylonitrile	ND	ND	ND	0.3 J	0.4 J	ND	NR	NR
Benzene	ND	ND	4	1	0.6 J	0.6 J	ND	ND
Benzyl Chloride	ND	ND	ND	ND	ND	ND	NR	NR
Bromodichloromethane	ND	ND	ND	1 J	1 J	0.9 J	ND	ND
Bromoform	ND	ND	ND	1 J	1 J	1 J	ND	ND
Bromomethane	ND	ND	ND	0.8	0.6 J	0.5 J	ND	ND
Carbon Disulfide	ND	ND	ND	0.9	0.6 J	0.6 J	ND	ND
Carbon Tetrachloride	ND	ND	ND	1	1 J	1	ND	ND
Chlorobenzene	ND	ND	ND	0.6 J	0.5 J	0.6 J	ND	ND
Chlorodibromomethane	ND	ND	ND	1 J	0.9 J	1 J	NR	NR
Chloroethane	ND	ND	ND	0.7	0.4 J	0.4 J	ND	ND
Chloroform	ND	2	ND	0.9 J	4	3	0.78 J	1.0 J
Chloromethane	0.9	ND	ND	3	0.5	0.4	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	1	10	16	8.1	9.7
cis-1,3-Dichloropropene	ND	13	ND	0.5 J	ND	0.5 J	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	3	0.7 J	0.6 J	0.5 J	ND	ND
Dichlorodifluoromethane	2	2	2	3	2	3	ND	ND
Diisopropyl ether	ND	ND	ND	ND	0.6 J	ND	NR	NR
Ethanol	5	1	37	19	3	2	15	1.1 J
Ethyl Acetate	ND	ND	2	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	0.5 J	0.5 J	0.4 J	NR	NR
Ethylbenzene	4	ND	3	3	0.9	1	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	1.1 J	0.87 J
Freon 113	ND	2	ND	2	3	3	1.8 J	5.5 J
Freon 114	ND	ND	ND	1 J	1 J	1 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	2.3 J	1.8 J
Heptane	ND	ND	3	3	0.5 J	0.5 J	ND	ND
Hexachlorobutadiene	ND	ND	ND	2 J	1 J	2 J	ND	ND
Hexane	2	ND	11	2	1	0.5 J	ND	ND
iso-Octane	ND	ND	4	1	0.7 J	0.7 J	NR	NR
Isopropylbenzene	ND	ND	ND	0.8 J	0.6 J	0.8 J	NR	NR
Isoproyl alcohol	ND	ND	6	9	2	7	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	0.91 J	1.0 J
Methyl Methacrylate	ND	ND	ND	0.6 J	0.5 J	0.4 J	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	1	0.7 J	0.7 J	0.4 J	ND	ND
Methylene Chloride	6	0.8	48	7	5	1	0.94 J	ND
MIBK	ND	ND	ND	0.8 J	0.6 J	0.5 J	NR	NR
Naphthalene	3	ND	1	6	0.8 J	8	NR	NR
n-Butane	0.5	ND	23	2	0.6	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	0.49 J	ND
p-Isopropyltoluene	ND	ND	ND	0.9 J	0.6 J	0.7 J	NR	NR
n-Propylbenzene	4	ND	ND	2	0.7 J	1	ND	ND
Propylene	ND	ND	ND	ND	ND	ND	NR	NR
Styrene	ND	ND	ND	0.5 J	ND	0.5 J	ND	ND
tert-Amyl methyl ether	ND	ND	ND	0.5 J	0.5 J	0.5 J	NR	NR
tert-Butyl Alcohol	1	ND	ND	4	0.6 J	0.4 J	NR	NR
Tetrachloroethene	ND	55	5	2	95	100	31	43
Tetrahydrofuran	5	2	ND	4	2	2	1.0 J	0.99 J
Toluene	4	ND	14	5	2	1	0.60 J	ND
Total Xylenes	28	ND	11	17	4	6	NR	NR
trans-1,2-Dichloroethene	ND	ND	ND	0.5 J	1	1	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	0.5 J	ND	0.5 J	ND	ND
Trichloroethene	ND	120	7	2	170	200	110	140
Trichlorofluoromethane	1	1	2	2	2	2	NR	NR
Vinyl Acetate	ND	ND	ND	3	ND	ND	NR	NR
Vinyl Bromide	ND	ND	ND	0.7 J	ND	0.6 J	NR	NR
Vinyl Chloride	ND	ND	ND	0.4 J	0.4 J	0.3 J	ND	ND

Notes:
µg/m³ = micrograms per cubic meter
NR = Not Recorded
NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE105D							
Sample Date	09/15/10	12/09/10	03/30/11	06/28/11	09/06/11	12/01/11	02/10/12	05/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	1000	320	ND	1 J	490	930	350	320
1,1,2,2-Tetrachloroethane	ND	ND	ND	0.9 J	8 J	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	0.8 J	6 J	ND	ND	ND
1,1-Dichloroethane	250	ND	ND	0.6 J	74	150	69	78
1,1-Dichloroethene	2	4	4	0.6 J	6 J	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	0.9 J	7 J	ND	NR	NR
1,2,3-Trimethylbenzene	8	ND	ND	3	ND	ND	NR	NR
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	30	4	2	8	ND	ND	ND	3.4 J
1,2-Dibromoethane	ND	ND	ND	1 J	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	4	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	4	5 J	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	0.7 J	5 J	ND	ND	ND
1,3,5-Trimethylbenzene	6	ND	ND	2	ND	ND	ND	ND
1,3-Butadiene	ND	ND	ND	0.4	3 J	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	0.6 J	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	0.7 J	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	0.8	ND	ND	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	ND
2-Butanone	7	2	2	4	6 J	ND	ND	ND
2-Hexanone	ND	ND	ND	0.7 J	7 J	ND	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	0.5 J	3 J	ND	ND	ND
4-ethyltoluene	5	ND	ND	2	ND	ND	ND	ND
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	35	5	11	22	10	5	ND	15 J
alpha-Chlorotoluene	ND	ND	ND	0.7 J	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	0.4 J	4 J	ND	NR	NR
Benzene	ND	1	3	1	4 J	ND	ND	ND
Benzyl Chloride	ND	ND	ND	ND	ND	ND	NR	NR
Bromodichloromethane	6	ND	ND	1 J	8 J	ND	ND	ND
Bromoform	ND	ND	ND	1 J	ND	ND	ND	ND
Bromomethane	ND	ND	ND	0.6 J	6 J	ND	ND	ND
Carbon Disulfide	ND	ND	ND	0.8	4 J	ND	ND	ND
Carbon Tetrachloride	3	6	ND	1	10 J	ND	4.0 J	8.1 J
Chlorobenzene	ND	ND	ND	1	ND	ND	ND	ND
Chlorodibromomethane	ND	ND	ND	1 J	9 J	ND	NR	NR
Chloroethane	1	1	ND	0.5 J	4 J	ND	ND	ND
Chloroform	ND	4	ND	0.8 J	10 J	3 J	ND	2.7 J
Chloromethane	1	ND	ND	2	3 J	ND	ND	ND
cis-1,2-Dichloroethene	300	ND	ND	0.7 J	150	380	190	220
cis-1,3-Dichloropropene	ND	ND	ND	0.6 J	ND	ND	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	1	0.8	ND	ND	ND	ND
Dichlorodifluoromethane	2	5	2	3	9 J	3 J	ND	ND
Diisopropyl ether	2	ND	ND	ND	ND	ND	NR	NR
Ethanol	8	2	26	12	10	10	5.2 J	ND
Ethyl Acetate	2	ND	ND	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	0.6 J	4 J	ND	NR	NR
Ethylbenzene	4	ND	2	3	ND	ND	ND	ND
Freon 11	NR	NR	NR	NR	NR	NR	ND	ND
Freon 113	81	89	ND	2	62	40	18 J	43
Freon 114	ND	ND	ND	1 J	10 J	ND	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	ND	ND
Heptane	ND	ND	1	0.9	5 J	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	2 J	ND	ND	ND	ND
Hexane	5	2	5	2	4 J	ND	ND	ND
iso-Octane	ND	ND	2	1	7 J	ND	NR	NR
Isopropylbenzene	ND	ND	ND	0.8 J	ND	ND	NR	NR
Isoproyl alcohol	2	ND	2	2	6	ND	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	ND	1.9 J
Methyl Methacrylate	ND	ND	ND	0.7 J	4 J	ND	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	ND	0.7 J	4 J	ND	ND	ND
Methylene Chloride	16	5	2	6	8	3 J	8.4 J	ND
MIBK	ND	ND	ND	0.8 J	5 J	ND	NR	NR
Naphthalene	9	ND	ND	4	ND	ND	NR	NR
n-Butane	ND	2	13	2	4 J	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	ND
p-Isopropyltoluene	ND	ND	ND	0.8 J	ND	ND	NR	NR
n-Propylbenzene	3	ND	ND	1	ND	ND	ND	ND
Propylene	2	ND	1	ND	ND	ND	NR	NR
Styrene	ND	ND	ND	0.7 J	ND	ND	ND	ND
tert-Amyl methyl ether	ND	ND	ND	0.6 J	5 J	ND	NR	NR
tert-Butyl Alcohol	3	ND	ND	0.9	4 J	ND	NR	NR
Tetrachloroethene	270	420	ND	2	240	330	140	220
Tetrahydrofuran	6	3	2	3	5 J	2 J	ND	1.6 J
Toluene	3	2	8	14	4 J	ND	ND	ND
Total Xylenes	22	ND	10	20	ND	ND	NR	NR
trans-1,2-Dichloroethene	3	ND	ND	0.6 J	7 J	3 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	0.5 J	ND	ND	ND	ND
Trichloroethene	1100	1400	1	2	3500	7000	3800	4500
Trichlorofluoromethane	ND	3	1	2	9 J	ND	NR	NR
Vinyl Acetate	2	ND	ND	ND	4 J	ND	NR	NR
Vinyl Bromide	ND	ND	ND	0.8 J	6 J	ND	NR	NR
Vinyl Chloride	ND	ND	ND	0.4 J	4 J	ND	ND	ND

Notes:
µg/m³ = micrograms per cubic meter
NR = Not Recorded
NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE 106							
Sample Date	09/15/10	12/08/10	03/30/11	06/28/11	09/06/11	10/14/11	03/20/12	05/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	4	ND	NA	6	3	7	1.9 J	2.2 J
1,1,2,2-Tetrachloroethane	ND	ND	NA	1 J	0.8 J	1 J	ND	ND
1,1,2-Trichloroethane	ND	ND	NA	0.7 J	0.6 J	0.8 J	ND	ND
1,1-Dichloroethane	1	ND	NA	1	0.5 J	1	0.62 J	0.70 J
1,1-Dichloroethene	ND	ND	NA	0.6 J	2	0.6 J	ND	ND
1,2,3-Trichloropropane	ND	ND	NA	0.9 J	0.6 J	0.9 J	NR	NR
1,2,3-Trimethylbenzene	9	ND	NA	9	1	2	NR	NR
1,2,4-Trichlorobenzene	2	ND	NA	2	ND	0.8 J	ND	ND
1,2,4-Trimethylbenzene	29	ND	NA	29	3	6	1.1 J	2.2 J
1,2-Dibromoethane	ND	ND	NA	1 J	ND	1 J	ND	ND
1,2-Dichlorobenzene	1	ND	NA	0.7 J	ND	0.9 J	ND	ND
1,2-Dichloroethane	0.8	ND	NA	0.6 J	0.5 J	0.6 J	ND	ND
1,2-Dichloropropane	ND	ND	NA	0.7 J	ND	0.7 J	ND	ND
1,3,5-Trimethylbenzene	6	ND	NA	5	0.9 J	1	ND	ND
1,3-Butadiene	1	ND	NA	ND	2	0.6	ND	0.87 J
1,3-Dichlorobenzene	ND	ND	NA	ND	ND	0.7 J	ND	ND
1,4-Dichlorobenzene	ND	ND	NA	0.7 J	2	0.7 J	ND	ND
1,4-Dioxane	ND	ND	NA	0.7	0.5 J	0.6 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	120
2-Butanone	4	ND	NA	7	0.5 J	2	0.70 J	ND
2-Hexanone	ND	ND	NA	1	0.6 J	0.5 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	NA	0.4 J	0.5 J	0.4 J	ND	ND
4-ethyltoluene	5	ND	NA	5	1	1	0.37 J	2.0 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	5	5	NA	22	11	9	5.6 J	9.5 J
alpha-Chlorotoluene	ND	ND	NA	0.6 J	ND	0.7 J	ND	ND
Acrylonitrile	0.4	ND	NA	0.4 J	0.4 J	ND	NR	NR
Benzene	0.8	ND	NA	0.9	0.9	0.6 J	ND	ND
Benzyl Chloride	1	ND	NA	0.7 J	ND	ND	NR	NR
Bromodichloromethane	ND	ND	NA	0.8 J	0.5 J	1 J	ND	ND
Bromoform	ND	ND	NA	1 J	0.3 J	2 J	ND	ND
Bromomethane	0.9	ND	NA	0.6 J	2	0.6 J	ND	ND
Carbon Disulfide	0.8	ND	NA	0.8	0.5 J	0.6	ND	ND
Carbon Tetrachloride	2	ND	NA	1	ND	3	0.91 J	0.55 J
Chlorobenzene	ND	ND	NA	0.7 J	0.3 J	0.7 J	ND	ND
Chlorodibromomethane	ND	ND	NA	1 J	1	1 J	NR	NR
Chloroethane	0.6	ND	NA	0.7	0.8	0.5 J	ND	ND
Chloroform	1	ND	NA	2	0.4 J	2	ND	1.4 J
Chloromethane	0.8	0.8	NA	2	ND	0.4	ND	ND
cis-1,2-Dichloroethene	4	ND	NA	6	0.5 J	4	1.6 J	2.3 J
cis-1,3-Dichloropropene	ND	ND	NA	0.6 J	ND	0.5 J	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	ND
Cyclohexane	ND	ND	NA	0.6 J	ND	0.4 J	ND	2.9
Dichlorodifluoromethane	3	2	NA	3	0.8 J	3	ND	ND
Diisopropyl ether	ND	ND	NA	ND	ND	ND	NR	NR
Ethanol	3	2	NA	15	9	1	1.6 J	ND
Ethyl Acetate	ND	ND	NA	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	NA	0.6 J	0.4 J	0.5 J	NR	NR
Ethylbenzene	3	ND	NA	4	2	1	ND	3.6
Freon 11	NR	NR	NR	NR	NR	NR	1.2 J	0.96 J
Freon 113	4	ND	NA	5	4	12	12	6.5
Freon 114	2	ND	NA	1 J	0.9 J	1 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	2.1 J	2.2 J
Heptane	ND	ND	NA	0.8 J	0.7 J	0.5 J	ND	7.6
Hexachlorobutadiene	2	ND	NA	2 J	1 J	2 J	ND	ND
Hexane	0.8	ND	NA	1	1	1	ND	ND
iso-Octane	1	ND	NA	19	0.9 J	0.8 J	NR	NR
Isopropylbenzene	1	ND	NA	1	0.5 J	0.7 J	NR	NR
Isoproyl alcohol	1	ND	NA	13	1	1	NR	NR
m,p-Xylene	NR	NR	NA	NR	NR	NR	0.80 J	15
Methyl Methacrylate	ND	ND	NA	0.5 J	ND	0.5 J	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	NA	0.7 J	0.5 J	0.7	ND	ND
Methylene Chloride	2	0.8	NA	6	2	5	0.71 J	2.0 J
MIBK	ND	ND	NA	0.8 J	0.4 J	0.5 J	NR	NR
Naphthalene	6	ND	NA	26	1	2	NR	NR
n-Butane	0.8	0.5	NA	1	0.5 J	ND	NR	NR
o-Xylene	NR	NR	NA	NR	NR	NR	ND	5.9
p-Isopropyltoluene	2	ND	NA	1	ND	0.8 J	NR	NR
n-Propylbenzene	3	ND	NA	3	0.7 J	0.9 J	ND	0.48 J
Propylene	ND	ND	NA	ND	ND	ND	NR	NR
Styrene	ND	ND	NA	0.7 J	ND	0.5 J	ND	ND
tert-Amyl methyl ether	ND	ND	NA	0.6 J	0.4 J	0.6 J	NR	NR
tert-Butyl Alcohol	0.9	ND	NA	2	1 J	0.8	NR	NR
Tetrachloroethene	15	ND	NA	15	7	19	4.3 J	7.2
Tetrahydrofuran	6	ND	NA	8	2	2	0.87 J	1.2 J
Toluene	2	ND	NA	5	3	1	0.44 J	3.4
Total Xylenes	17	ND	NA	22	8	6	NR	NR
trans-1,2-Dichloroethene	0.9	ND	NA	0.8	0.5 J	0.7 J	ND	ND
trans-1,3-Dichloropropene	ND	ND	NA	0.6 J	ND	ND	ND	ND
Trichloroethene	140	10	NA	210	92	190	69	110
Trichlorofluoromethane	2	1	NA	2	2	2	NR	NR
Vinyl Acetate	1	ND	NA	3	ND	ND	NR	NR
Vinyl Bromide	0.9	ND	NA	0.7 J	0.5 J	0.7 J	NR	NR
Vinyl Chloride	0.5	ND	NA	0.4 J	0.3 J	0.4 J	ND	ND

Notes:
µg/m³ = micrograms per cubic meter
NR = Not Recorded
NA = Data not available. Vapor sampl

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 Individual Wells
Through Second Quarter 2012

Sample ID	SVE 206D							
Sample Date	09/15/10	12/06/10	03/30/11	06/28/11	09/06/11	10/14/11	01/10/12	05/11/12
Analysis by TO-15 (µg/m³)								
1,1,1-Trichloroethane	30	12	9	30	23	28	480	31
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	0.9 J	1 J	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	0.7 J	0.9 J	ND	ND
1,1-Dichloroethane	5	2	5	4	3	3	ND	3.0
1,1-Dichloroethene	ND	ND	ND	0.5 J	0.7 J	0.8	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	0.7 J	1 J	NR	NR
1,2,3-Trimethylbenzene	8	ND	ND	6	ND	2	NR	NR
1,2,4-Trichlorobenzene	NR	ND	ND	1 J	ND	0.9 J	ND	1.9 J
1,2,4-Trimethylbenzene	17	2	2	23	ND	4	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	1 J	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	1 J	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	0.6 J	0.7 J	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	0.6 J	0.8 J	ND	ND
1,3,5-Trimethylbenzene	6	ND	ND	4	ND	1	ND	2.3 J
1,3-Butadiene	ND	ND	ND	ND	0.3 J	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	0.8 J	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	0.8 J	ND	ND
1,4-Dioxane	ND	ND	ND	0.5 J	0.7 J	0.7 J	ND	ND
2,2,4-Trimethylpentane	NR	NR	NR	NR	NR	NR	ND	390
2-Butanone	8	2	0.8	5	1	2	ND	ND
2-Hexanone	ND	ND	ND	ND	0.5 J	0.8 J	ND	ND
2-Propanol	NR	NR	NR	NR	NR	NR	ND	ND
3-Chloro-1-propene	ND	ND	ND	ND	0.4 J	0.4 J	ND	ND
4-ethyltoluene	6	ND	ND	4	ND	1	ND	2.8 J
4-Methyl-2-pentanone	NR	NR	NR	NR	NR	NR	ND	ND
Acetone	25	9	5	11	6	6	4.8 J	13 J
alpha-Chlorotoluene	ND	ND	ND	ND	ND	0.9 J	ND	ND
Acrylonitrile	ND	ND	ND	0.4 J	0.4 J	ND	NR	NR
Benzene	ND	ND	ND	2	0.5 J	0.6 J	0.58 J	1.5 J
Benzyl Chloride	ND	ND	ND	ND	ND	0.6 J	NR	NR
Bromodichloromethane	ND	ND	ND	ND	0.9 J	1 J	ND	ND
Bromoform	ND	ND	ND	ND	ND	2 J	ND	ND
Bromomethane	ND	ND	ND	ND	0.6 J	0.7 J	ND	ND
Carbon Disulfide	ND	ND	ND	0.6 J	0.6 J	0.6	ND	ND
Carbon Tetrachloride	8	26	17	9	6	18	ND	18
Chlorobenzene	ND	ND	ND	ND	0.5 J	0.8 J	ND	ND
Chlorodibromomethane	ND	ND	ND	ND	1 J	1 J	NR	NR
Chloroethane	ND	ND	ND	0.4 J	0.4 J	0.4 J	ND	ND
Chloroform	ND	2	2	5	5	5	ND	6.4
Chloromethane	3	1	0.5	0.7	0.5	0.6	1.2 J	ND
cis-1,2-Dichloroethene	13	2	11	11	5	4	ND	4.1
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.7 J	ND	ND
Cumene	NR	NR	NR	NR	NR	NR	ND	1.4 J
Cyclohexane	ND	ND	ND	1	0.4 J	0.4 J	ND	7.0
Dichlorodifluoromethane	6	3	3	4	2	3	ND	ND
Diisopropyl ether	ND	ND	ND	ND	ND	1 J	NR	NR
Ethanol	8	3	2	17	4	ND	2.3 J	ND
Ethyl Acetate	ND	ND	ND	ND	ND	ND	NR	NR
Ethyl tert-butyl ether	ND	ND	ND	ND	0.6 J	0.6 J	NR	NR
Ethylbenzene	5	ND	ND	5	ND	1	ND	6.3
Freon 11	NR	NR	NR	NR	NR	NR	1.2 J	1.3 J
Freon 113	ND	18	30	16	25	25	ND	15
Freon 114	ND	ND	ND	ND	1 J	1 J	ND	ND
Freon 12	NR	NR	NR	NR	NR	NR	1.1 J	2.3 J
Heptane	ND	ND	ND	1	0.4 J	0.6 J	0.82 J	18
Hexachlorobutadiene	ND	ND	ND	ND	1 J	2 J	ND	ND
Hexane	3	ND	ND	3	2	0.6 J	ND	ND
iso-Octane	ND	ND	ND	130	0.7 J	0.8 J	NR	NR
Isopropylbenzene	ND	ND	ND	0.8 J	0.5 J	0.8 J	NR	NR
Isoproyl alcohol	5	ND	2	3	2	ND	NR	NR
m,p-Xylene	NR	NR	NR	NR	NR	NR	ND	21
Methyl Methacrylate	ND	ND	ND	ND	0.4 J	0.4 J	NR	NR
Methyl-tert-Butyl-Ether	ND	ND	ND	ND	1	0.5 J	ND	ND
Methylene Chloride	4	2	4	5	17	1	3.9	ND
MIBK	ND	ND	ND	0.5 J	0.4 J	0.6 J	NR	NR
Naphthalene	8	ND	ND	25	ND	3	NR	NR
n-Butane	ND	1	0.9	6	0.9	ND	NR	NR
o-Xylene	NR	NR	NR	NR	NR	NR	ND	24
p-Isopropyltoluene	ND	ND	ND	0.7 J	ND	0.9 J	NR	NR
n-Propylbenzene	ND	ND	ND	2	ND	0.9 J	ND	0.45 J
Propylene	ND	ND	ND	ND	ND	MD	NR	NR
Styrene	ND	ND	ND	ND	ND	0.6 J	ND	ND
tert-Amyl methyl ether	ND	ND	ND	ND	0.5 J	0.6 J	NR	NR
tert-Butyl Alcohol	4	ND	ND	0.6 J	0.5 J	ND	NR	NR
Tetrachloroethene	ND	13	19	41	8	66	ND	28
Tetrahydrofuran	8	2	1	7	2	2	ND	1.1 J
Toluene	5	2	2	11	0.5 J	3	0.81 J	11
Total Xylenes	21	ND	ND	25	ND	6	NR	NR
trans-1,2-Dichloroethene	ND	ND	ND	0.6 J	0.8	0.9	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	0.6 J	ND	ND
Trichloroethene	350	130	170	210	260	320	ND	160
Trichlorofluoromethane	6	2	2	3	2	3	NR	NR
Vinyl Acetate	4	ND	ND	ND	ND	ND	NR	NR
Vinyl Bromide	ND	ND	ND	ND	0.6 J	0.9	NR	NR
Vinyl Chloride	ND	ND	ND	ND	0.4 J	0.5 J	ND	ND

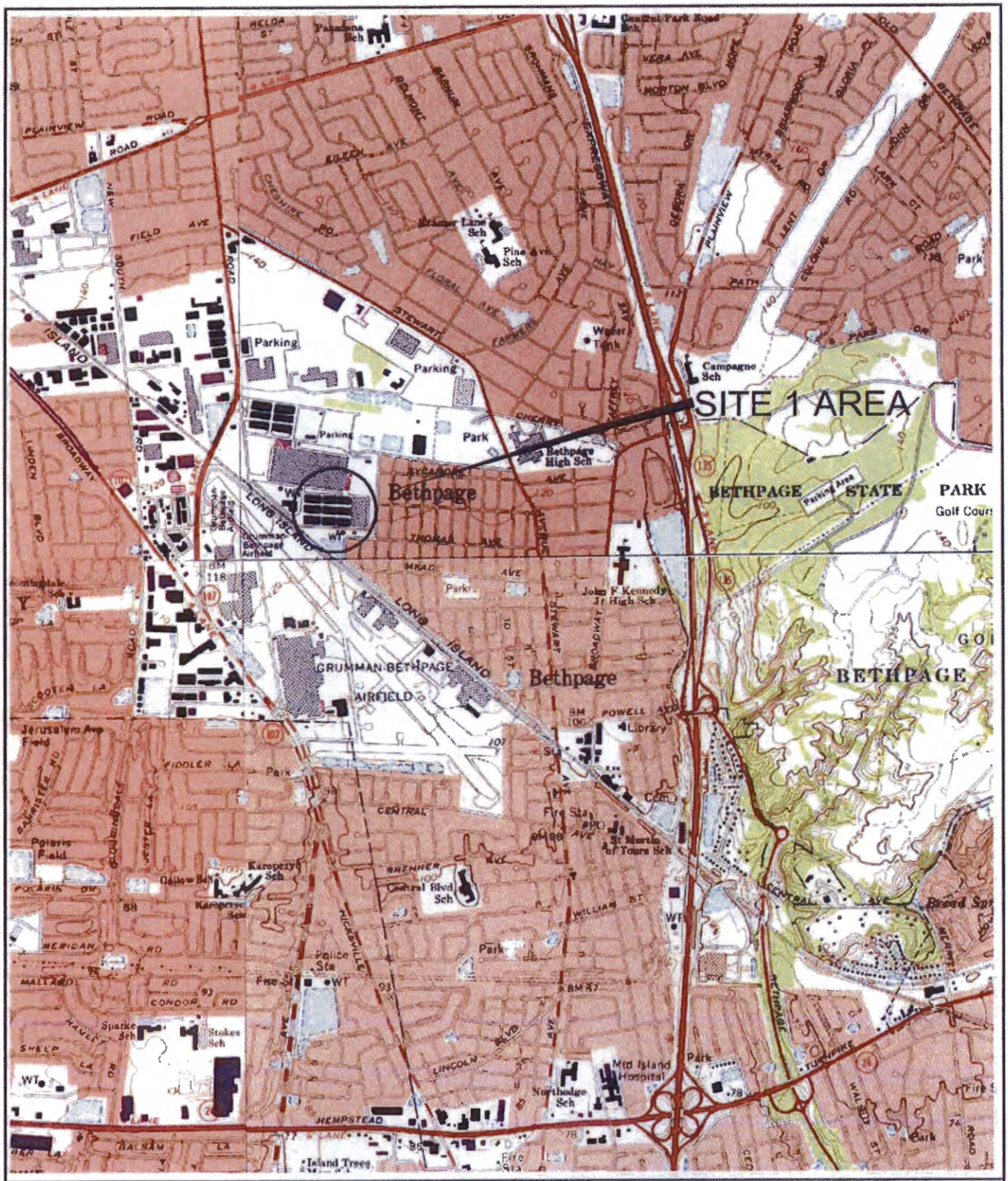
Notes:

µg/m³ = micrograms per cubic meter

NR = Not Recorded

NA = Data not available. Vapor sampl

FIGURES



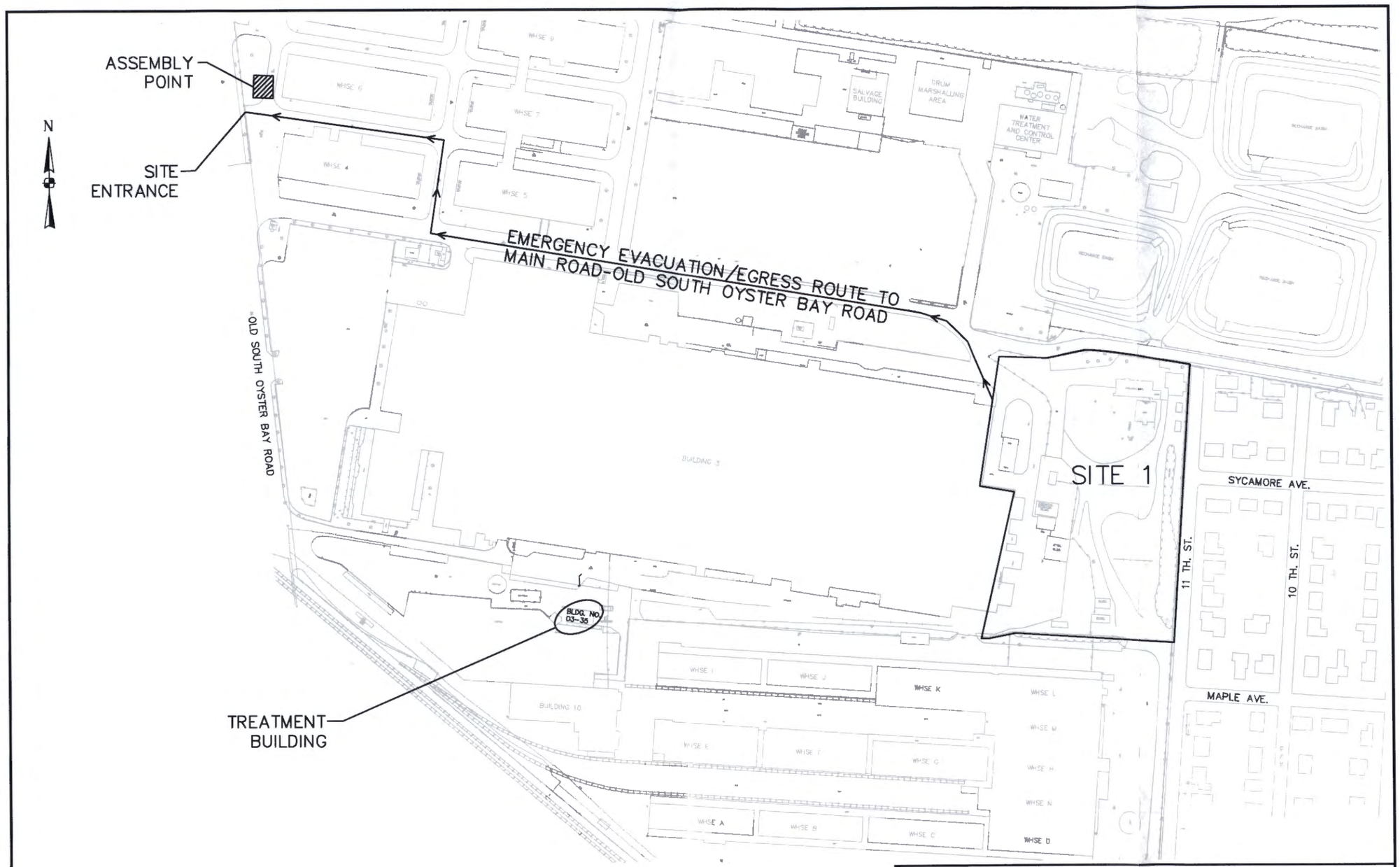
Source: U.S.G.S. Topographic Maps (7.5 Minute)
Amityville, Freeport, Hicksville, Huntington, NY Quadrangles

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

H&S Environmental, Inc.

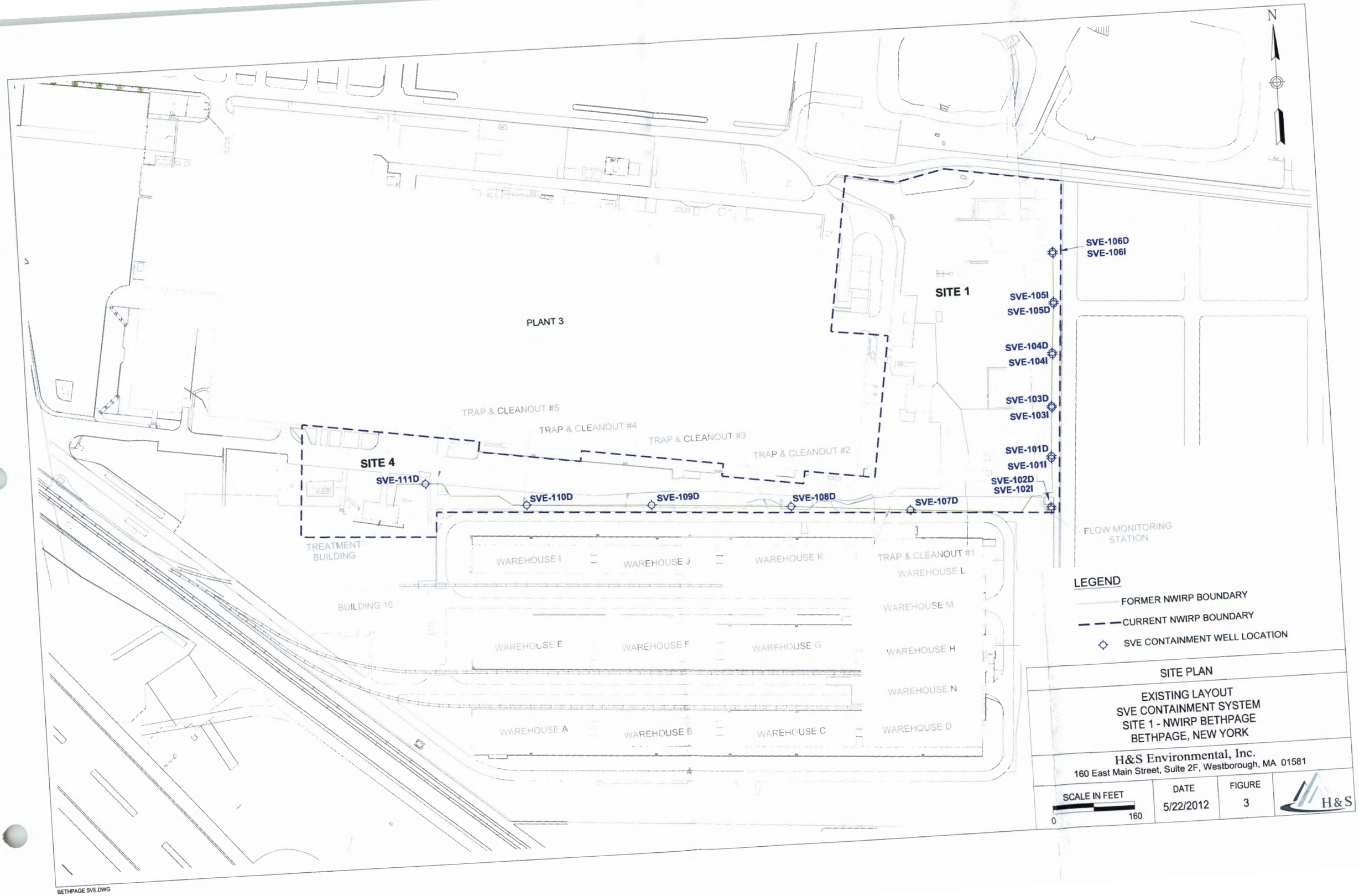


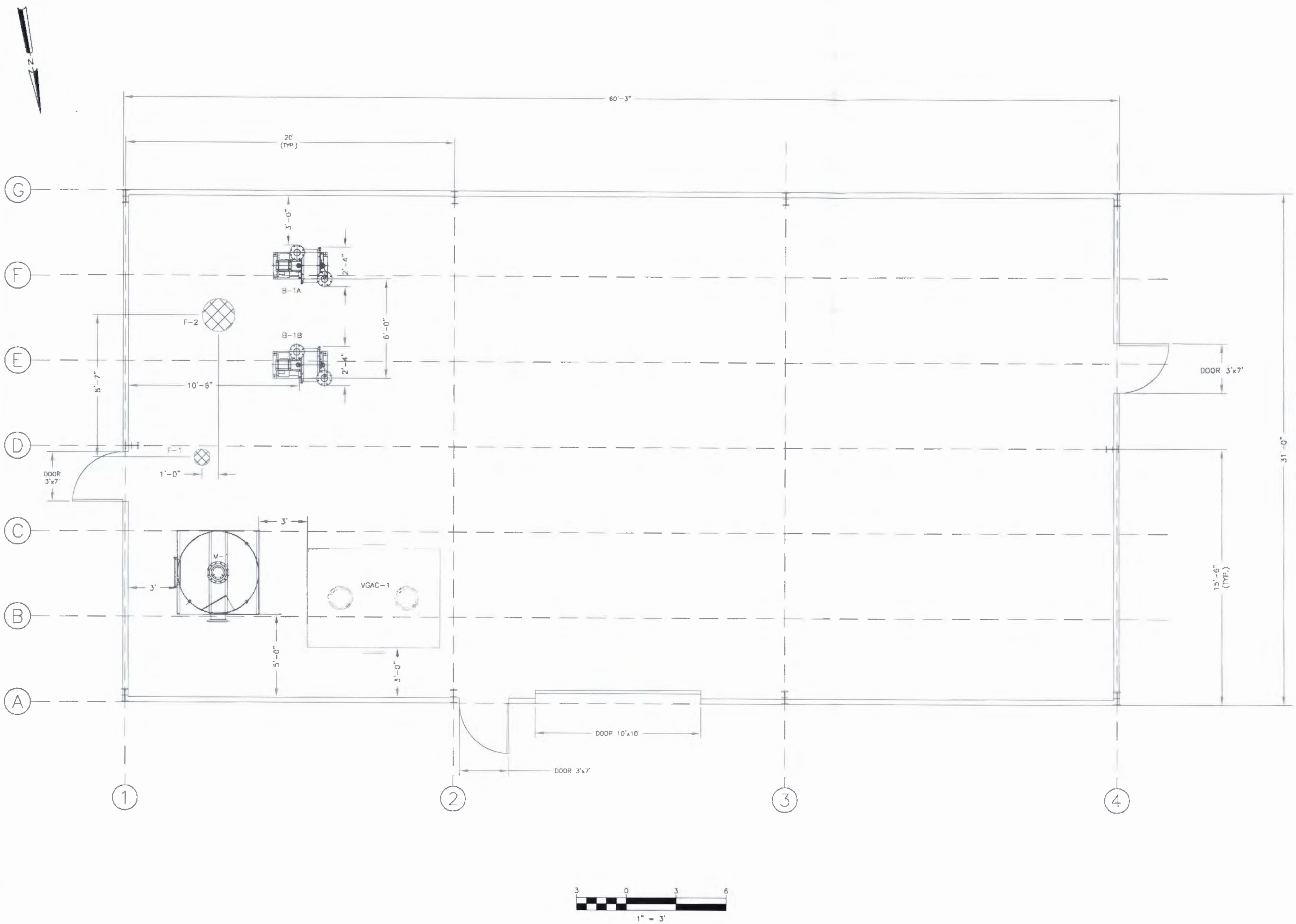
Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic

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

Figure 2
Site 1 Area and Vicinity

H&S Environmental, Inc.


N
SVE-106D
SVE-106I
SITE 1
SVE-105I
SVE-105D
PLANT 3
SVE-104D
SVE-104I
SVE-103D
SVE-103I
TRAP & CLEANOUT #5
TRAP & CLEANOUT #4
TRAP & CLEANOUT #3
TRAP & CLEANOUT #2
SVE-101D
SVE-101I
SVE-102D
SVE-102I
SITE 4
SVE-111D
SVE-110D
SVE-109D
SVE-108D
SVE-107D
FLOW MONITORING STATION
TREATMENT BUILDING
WAREHOUSE I
WAREHOUSE J
WAREHOUSE K
TRAP & CLEANOUT #1
WAREHOUSE L
BUILDING 10
WAREHOUSE M
WAREHOUSE E
WAREHOUSE F
WAREHOUSE G
WAREHOUSE H
WAREHOUSE N
WAREHOUSE A
WAREHOUSE B
WAREHOUSE C
WAREHOUSE D
LEGEND
FORMER NWIRP BOUNDARY
CURRENT NWIRP BOUNDARY
SVE CONTAINMENT WELL LOCATION
SITE PLAN
EXISTING LAYOUT
SVE CONTAINMENT SYSTEM
SITE 1 - NWIRP BETHPAGE
BETHPAGE, NEW YORK
H&S Environmental, Inc.
160 East Main Street, Suite 2F, Westborough, MA 01581
SCALE IN FEET
0
160
DATE
5/22/2012
FIGURE
3
H&S
BETHPAGE SVE.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

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

TETRA TECH ENGINEERING CORPORATION PC

DSGN: BK DR: BMV CHK: SP
SUPV: CH ENG:
SUBMITTED BY: (FIRM MEMBER) (TITLE) (DATE)
SOUTHWESTDIV DM: HD:
FPE: HD:
DIR:
OFFICER IN CHARGE
APPROVED DATE

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 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
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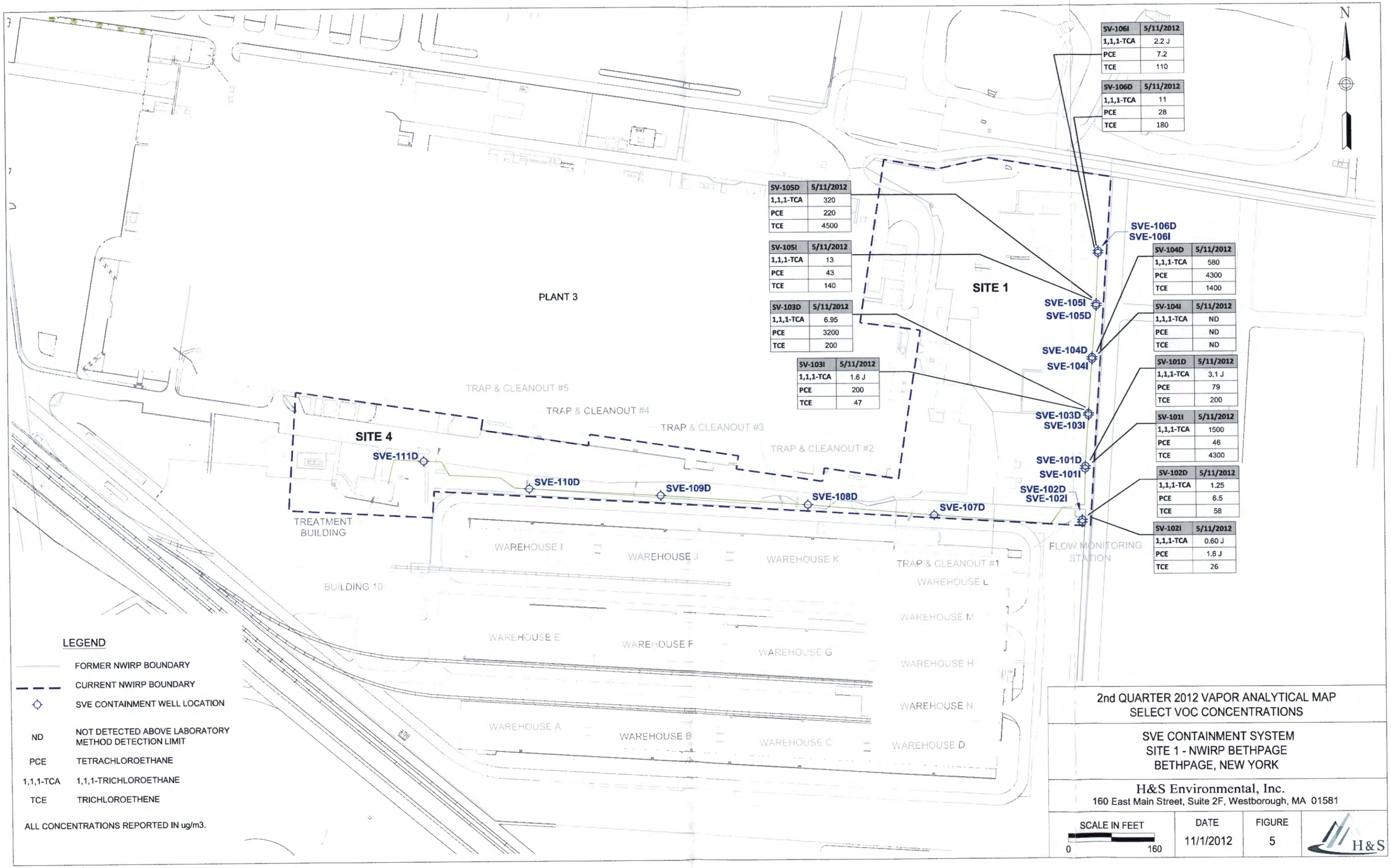
DIS. SH. NO. 1-3



SV-106I	5/11/2012
1,1,1-TCA	2.2 J
PCE	7.2
TCE	110

SV-106D	5/11/2012
1,1,1-TCA	11
PCE	28
TCE	180

SV-105D	5/11/2012
1,1,1-TCA	320
PCE	220
TCE	4500

SV-105I	5/11/2012
1,1,1-TCA	13
PCE	43
TCE	140

SV-103D	5/11/2012
1,1,1-TCA	6.95
PCE	3200
TCE	200

SV-103I	5/11/2012
1,1,1-TCA	1.6 J
PCE	200
TCE	47

SV-104D	5/11/2012
1,1,1-TCA	580
PCE	4300
TCE	1400

SV-104I	5/11/2012
1,1,1-TCA	ND
PCE	ND
TCE	ND

SV-101D	5/11/2012
1,1,1-TCA	3.1 J
PCE	79
TCE	200

SV-101I	5/11/2012
1,1,1-TCA	1500
PCE	46
TCE	4300

SV-102D	5/11/2012
1,1,1-TCA	1.25
PCE	6.5
TCE	58

SV-102I	5/11/2012
1,1,1-TCA	0.60 J
PCE	1.6 J
TCE	26

LEGEND

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

ALL CONCENTRATIONS REPORTED IN ug/m3.

2nd QUARTER 2012 VAPOR ANALYTICAL MAP SELECT VOC CONCENTRATIONS

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

H&S Environmental, Inc.
160 East Main Street, Suite 2F, Westborough, MA 01581

SCALE IN FEET	DATE	FIGURE
0 — 160	11/1/2012	5

BETHPAGE 2012-VOC.DWG

APPENDIX A

NYSDEC AIR PERMIT
EQUIVALENT APPROVAL

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 vapor 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

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - -

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		

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
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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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New York State Department of Environmental Conservation
Air Permit Application

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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

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - - -

Section IV - Emission Unit Information (continued)

Process Information

❑ Continuation Sheet(s)

EMISSION UNIT 1-OOEU1 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)

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - - -

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
-													
-													
-													
-													

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

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

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

New York State Department of Environmental Conservation
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Section IV - Emission Unit Information

Emission Unit Emissions Summary (continuation)

EMISSION UNIT: 1-00EU1

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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Air Permit Application

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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 ___/___/___

Reduction Date ___/___/___ Method

CAS No.	Contaminant Name	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
-	- -			
-	- -			
-	- -			

DEC ID
- - - - - - - - - -

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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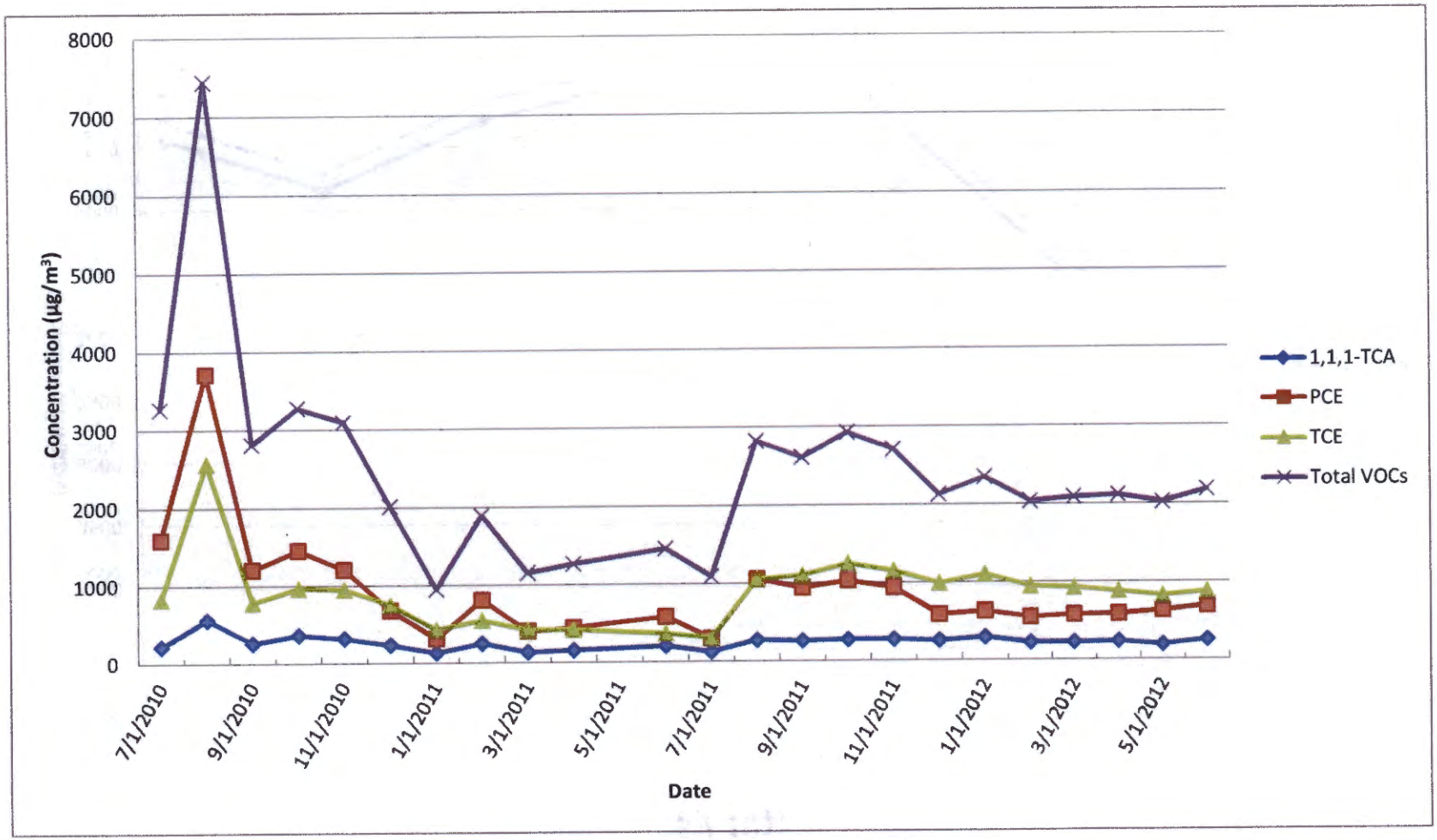
APPENDIX B

VAPOR CONCENTRATION TREND GRAPHS

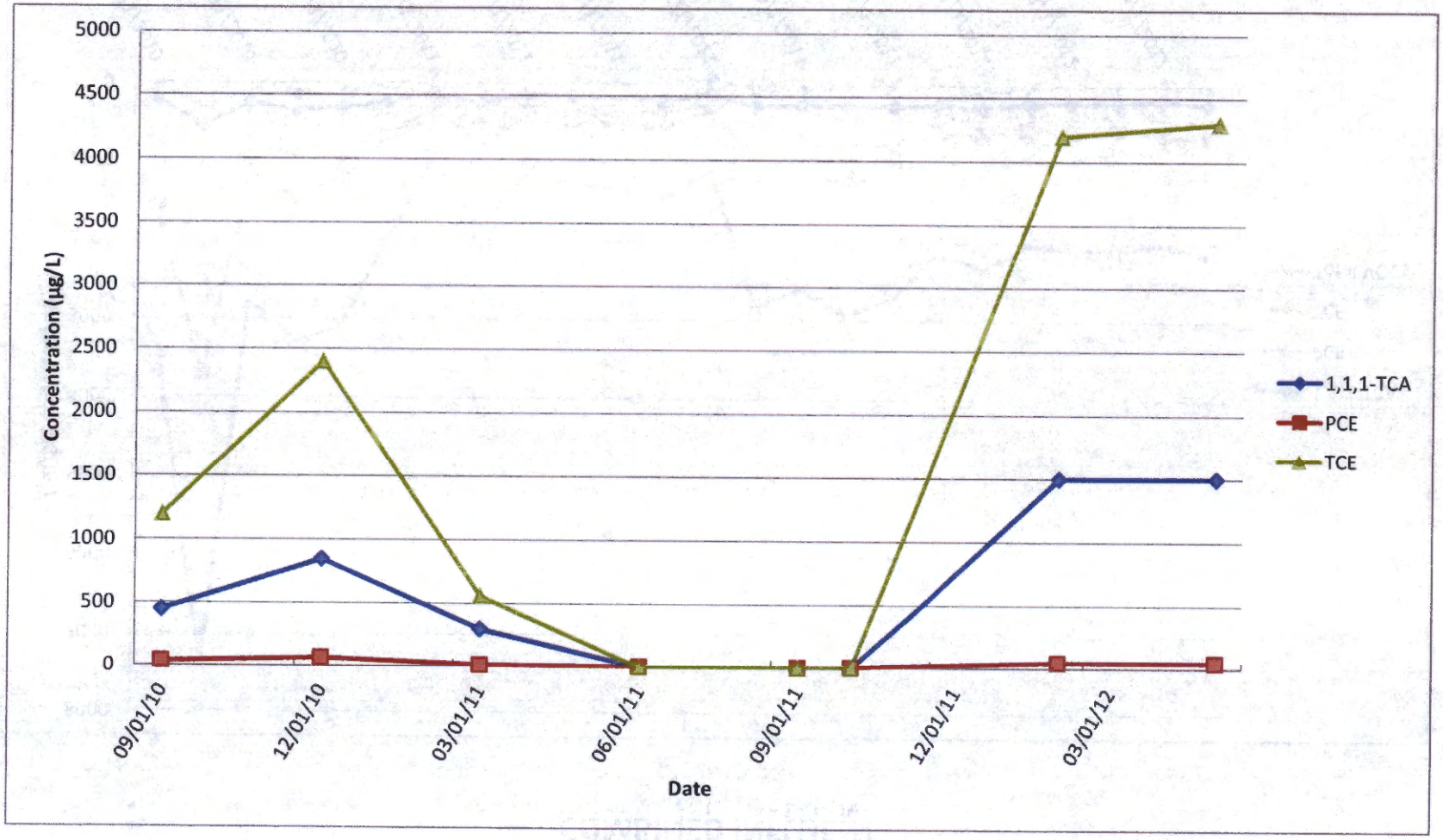
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Vapor Concentration Trends of Select and Total VOCs

COMBINED INFLUENT



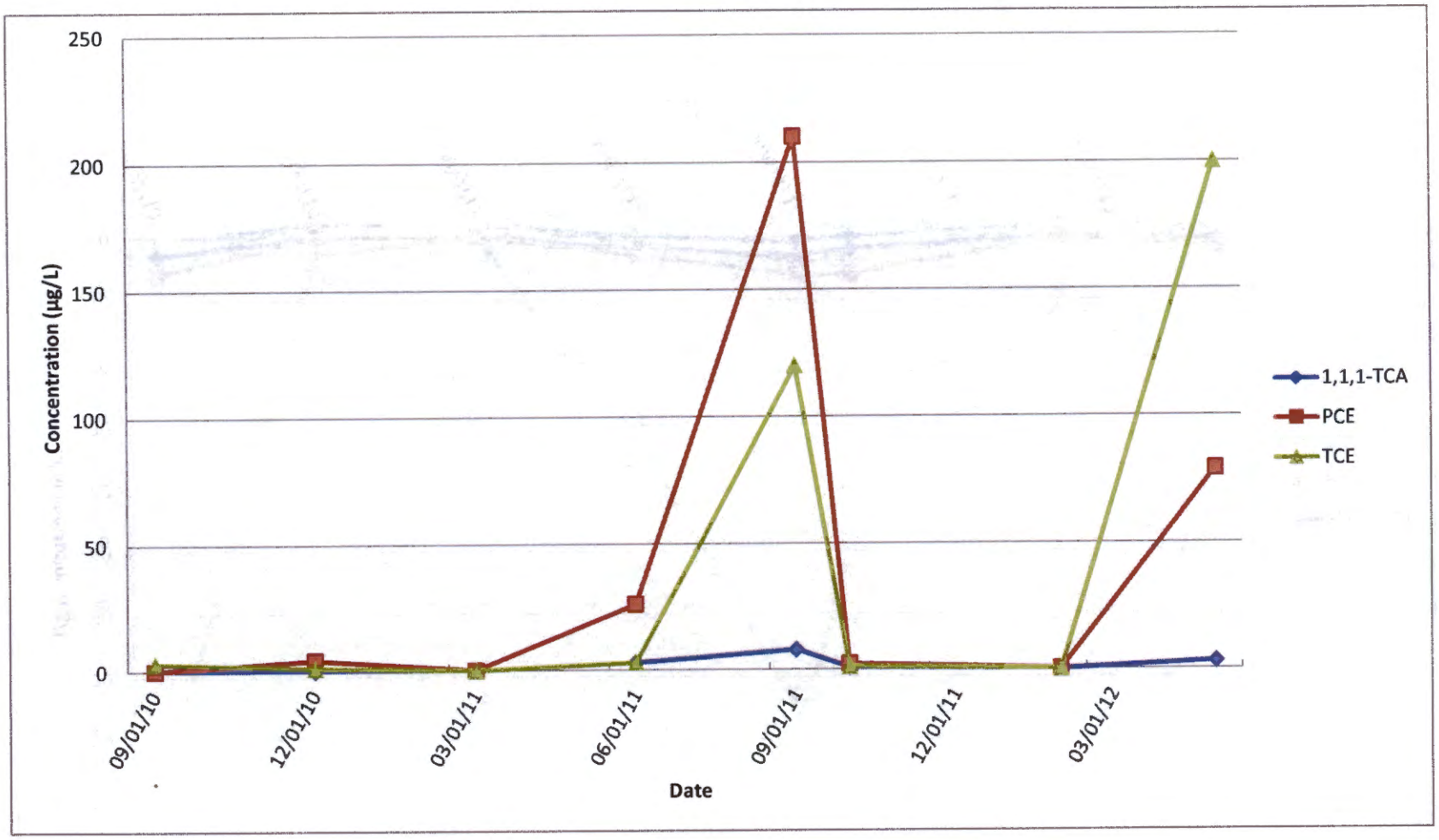
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-101I



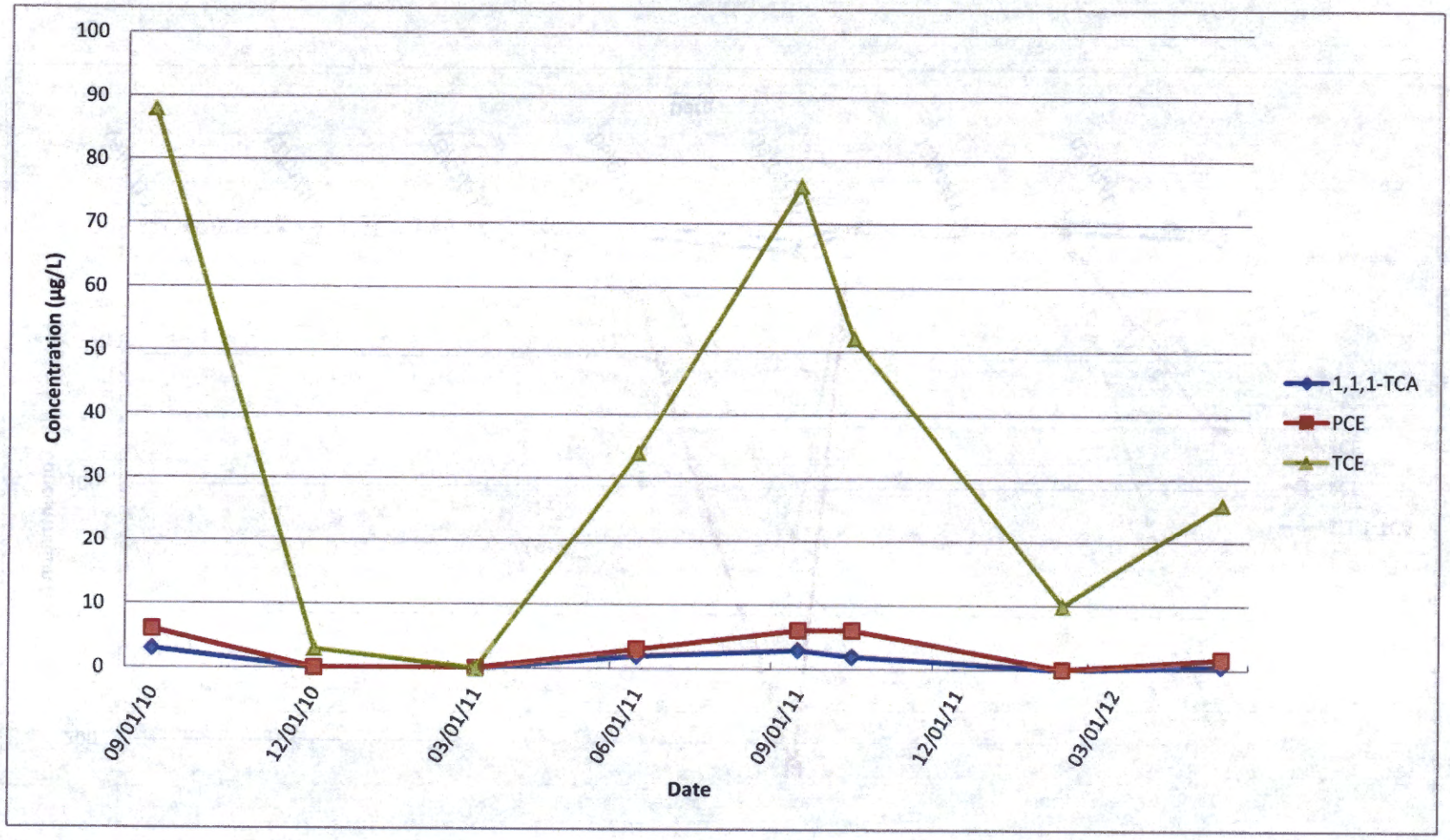
Soil Vapor Extracti[illegible]ntainment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-101D



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

SV102I



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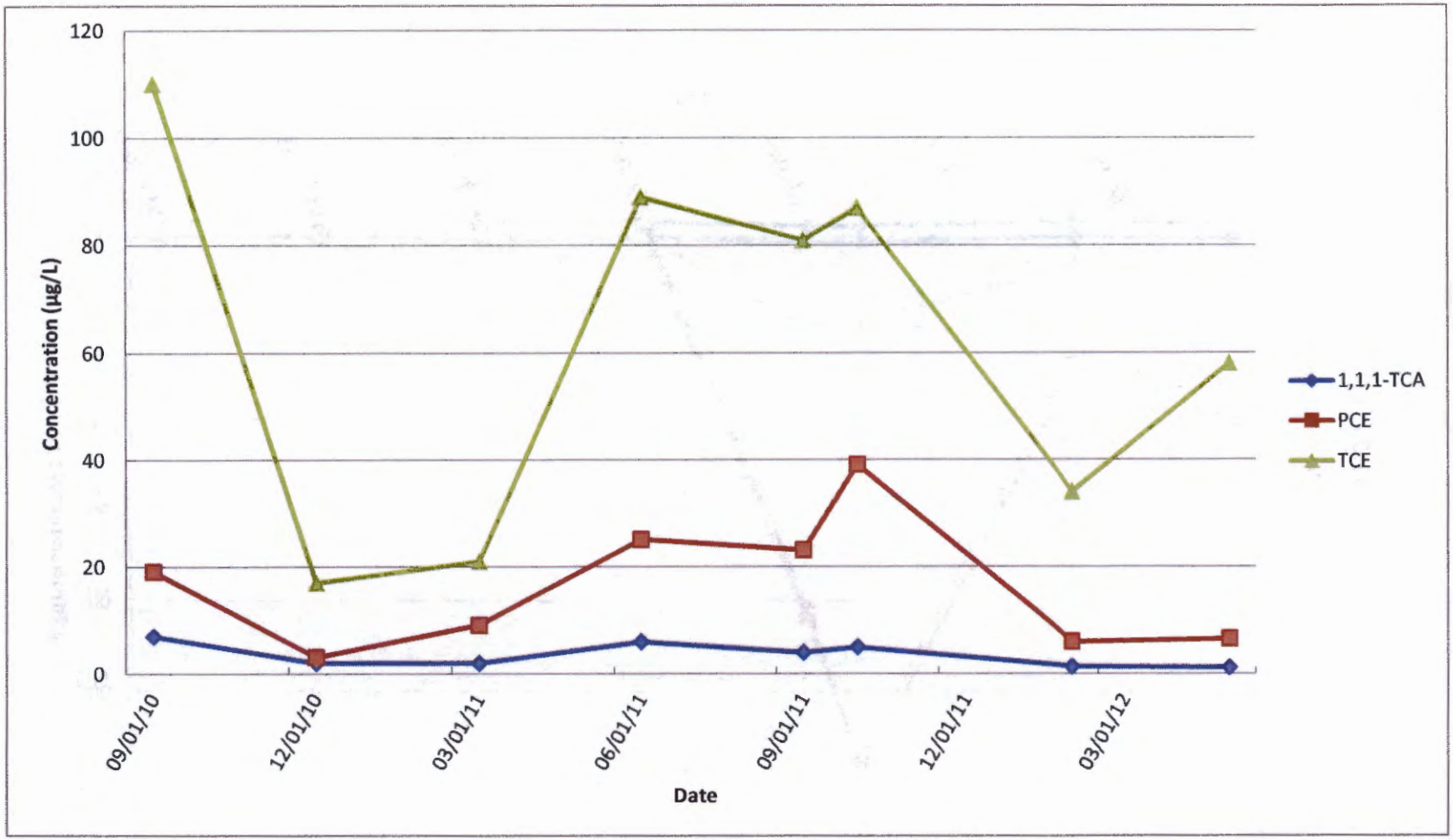
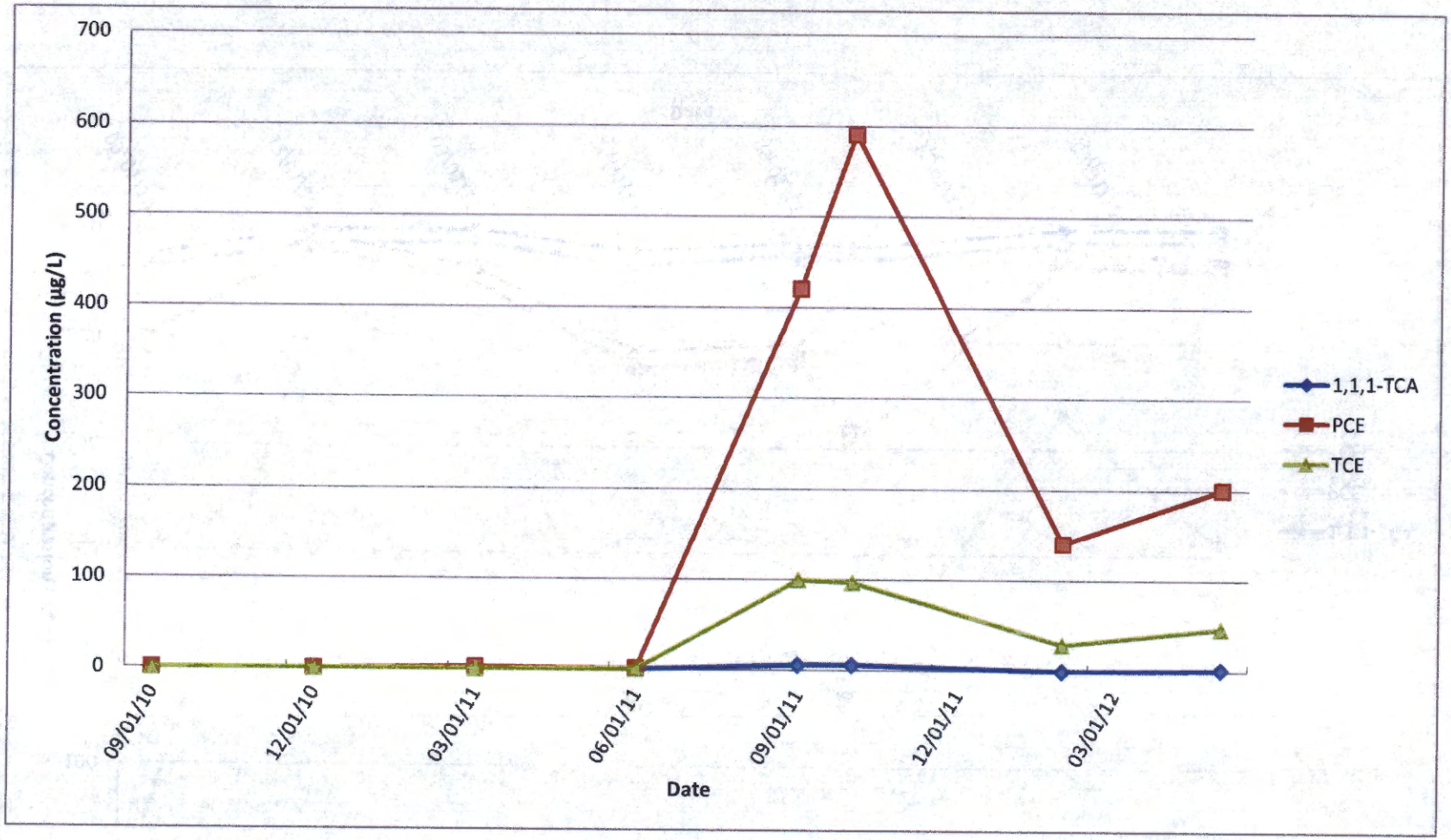
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-102D



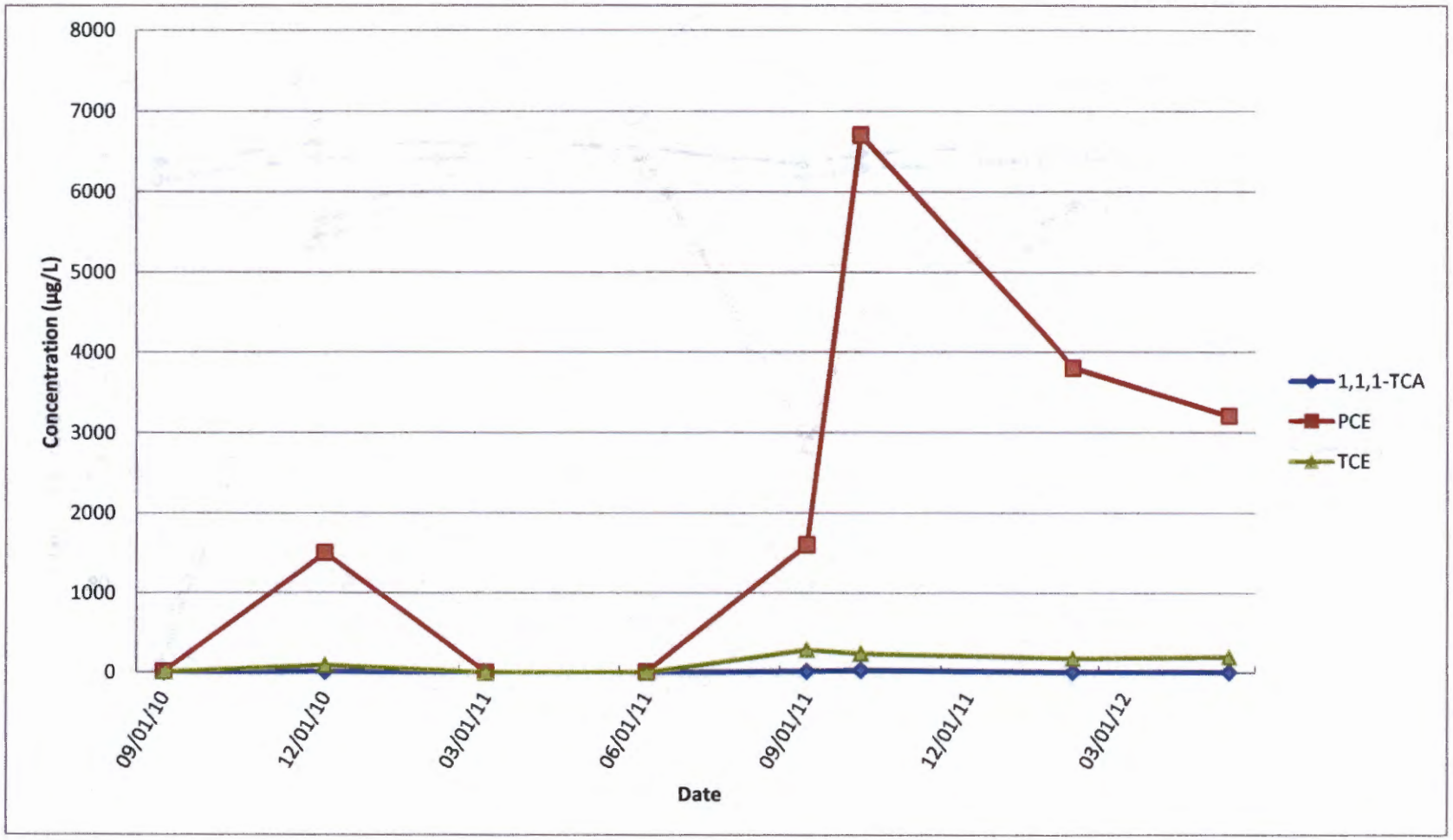
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-103I



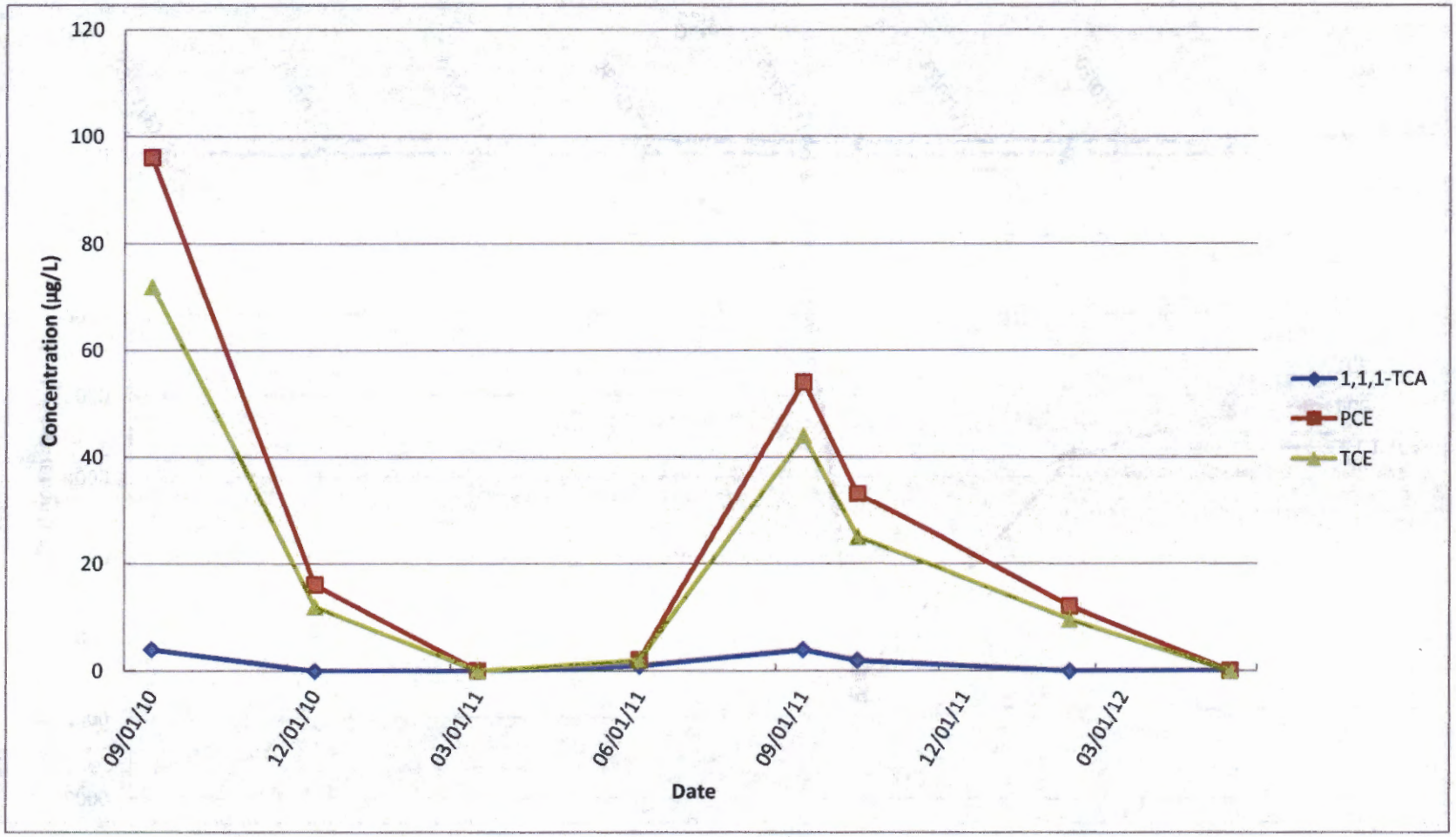
Soil Vapor Extracti ntainment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV103D



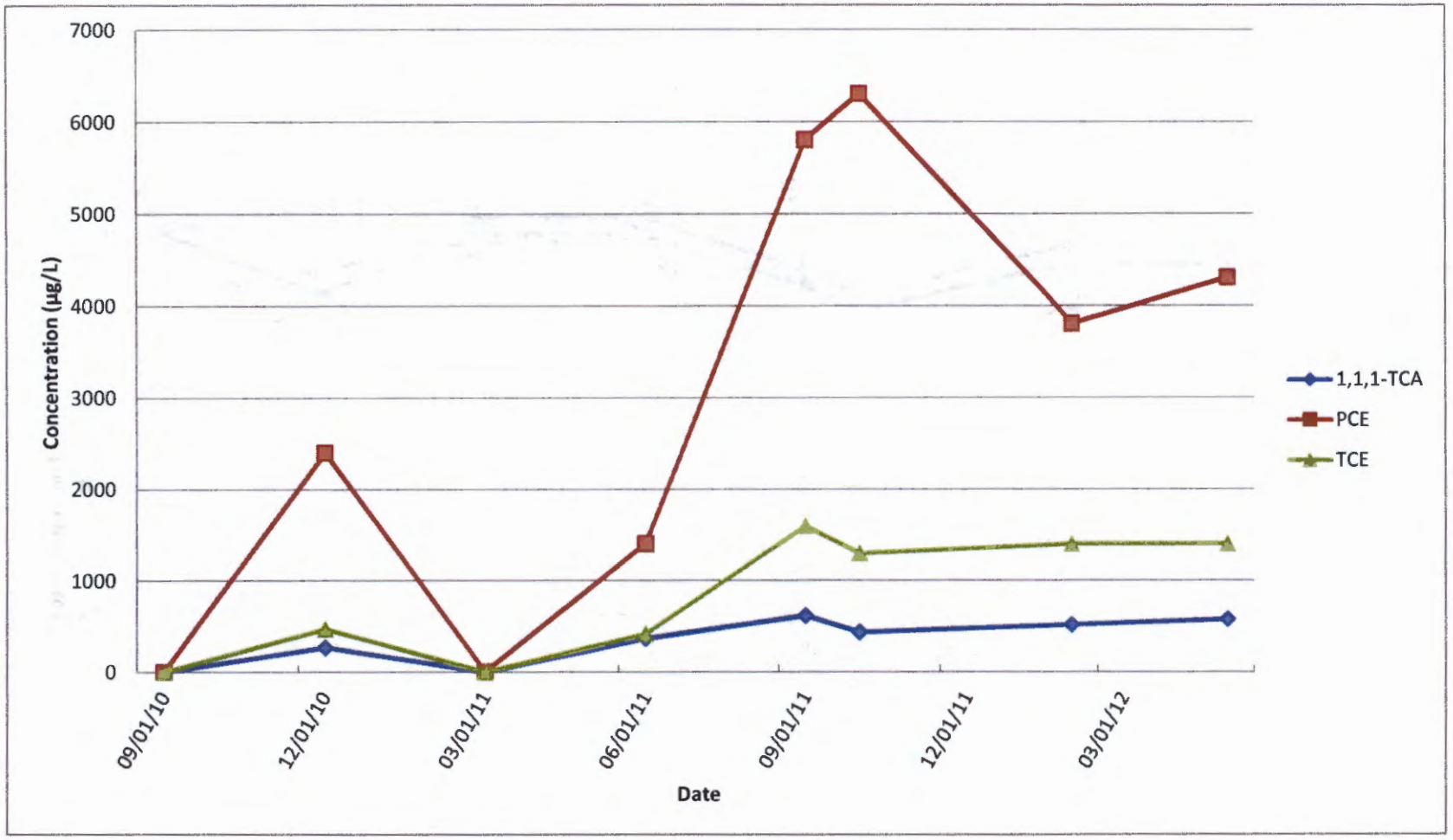
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV104I



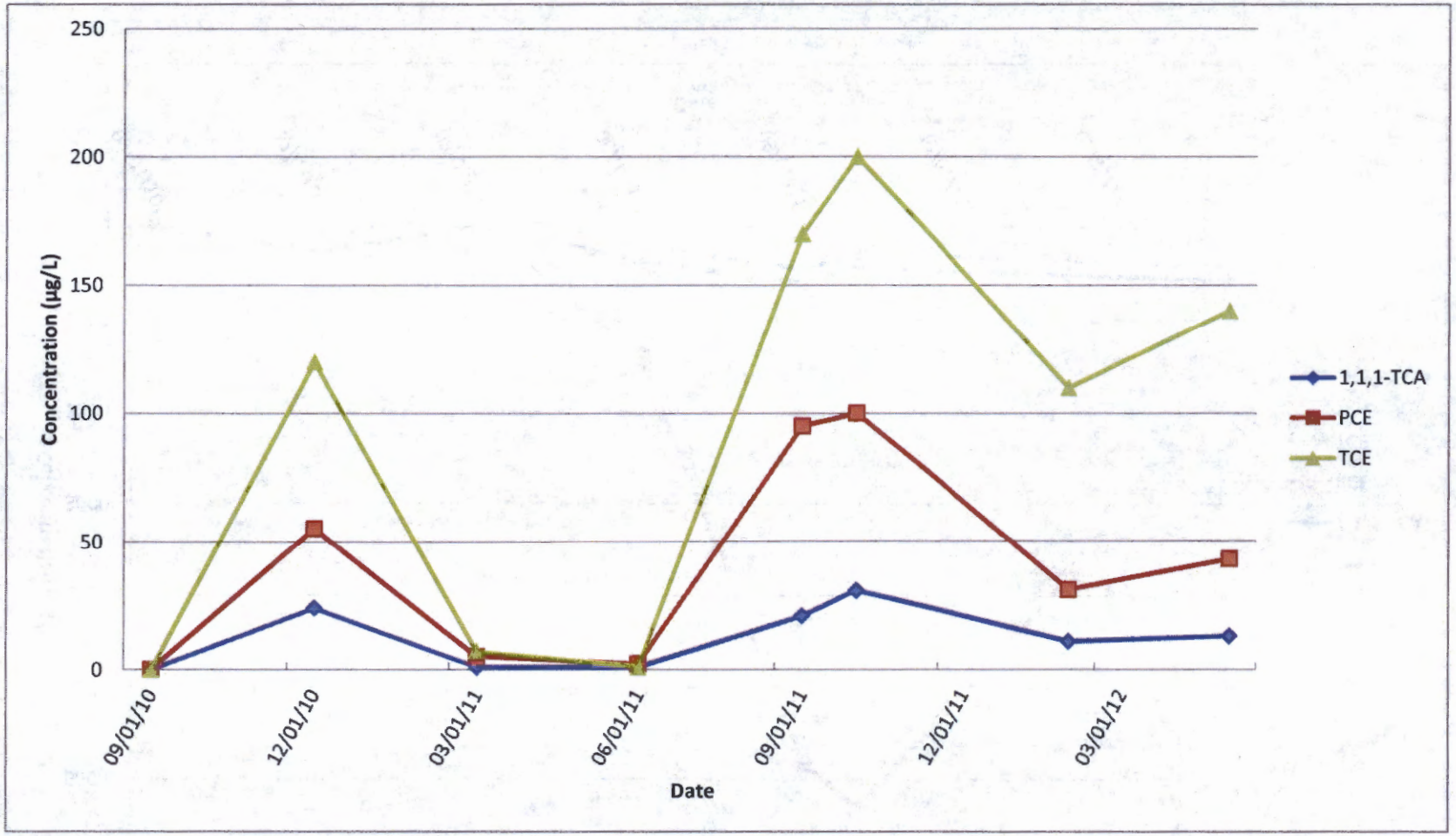
Soil Vapor Extracti[illegible]ntainment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-104D



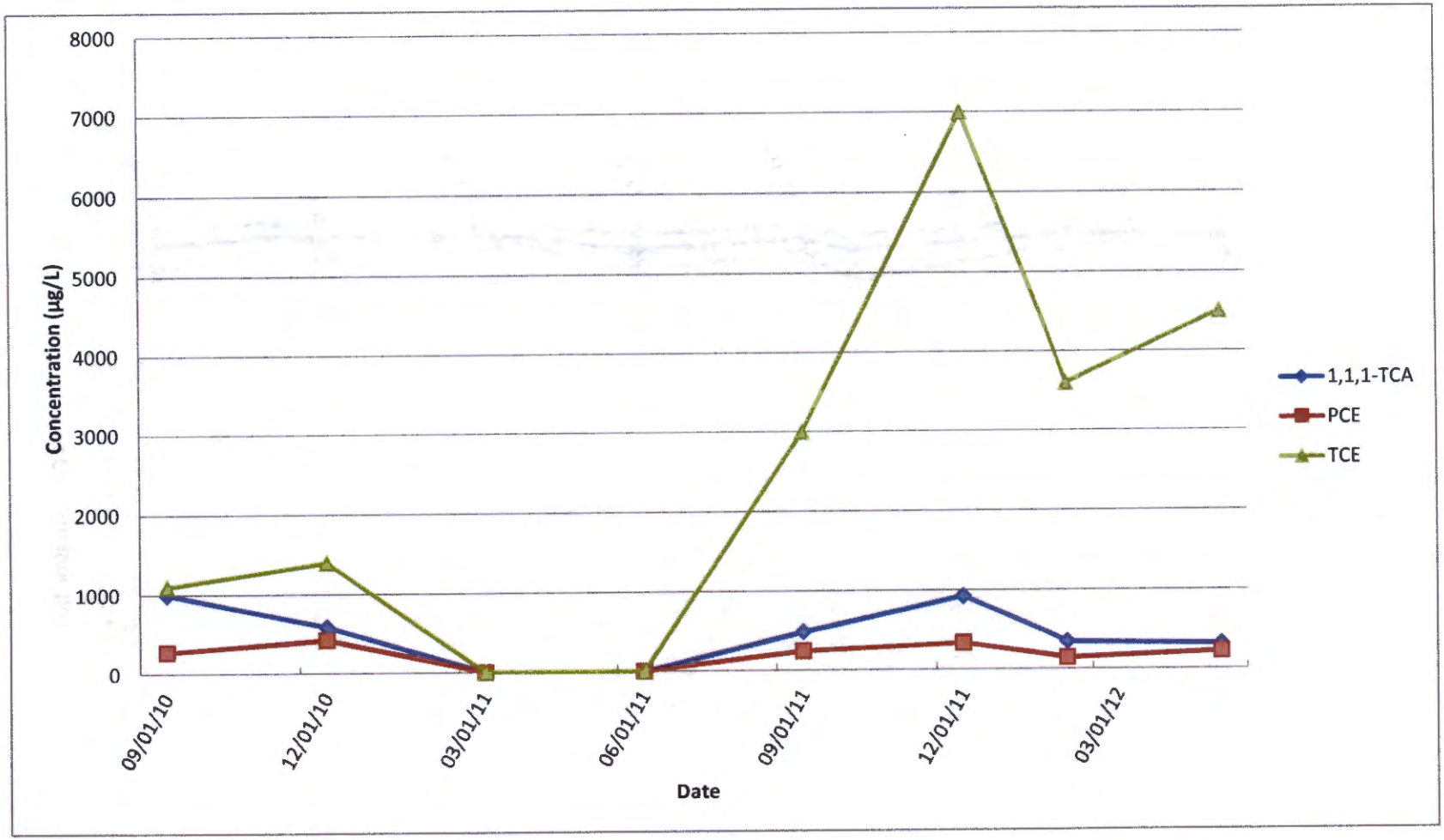
Soil Vapor Extraction Containment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-105I



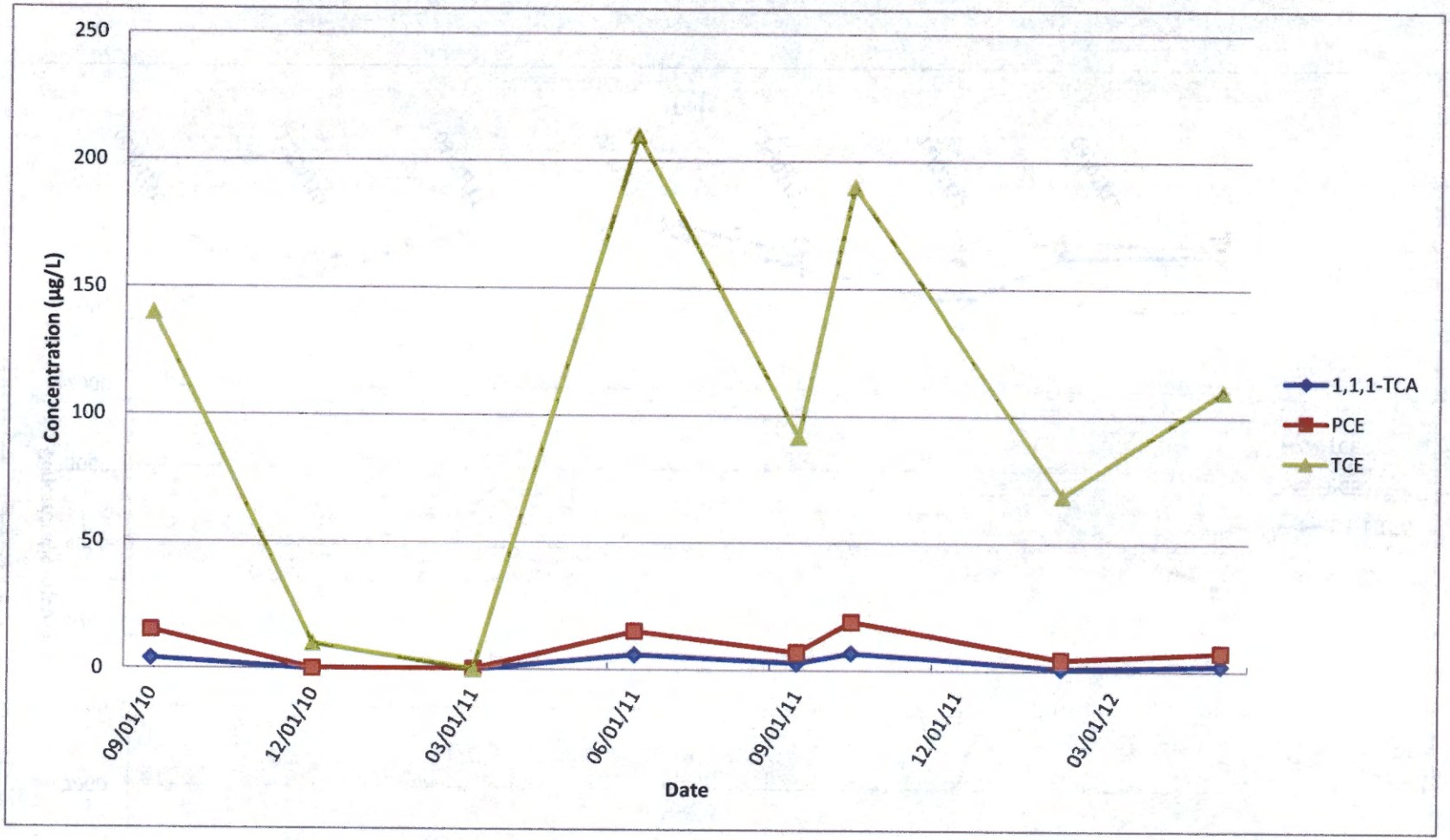
Soil Vapor Extracti[illegible]ntainment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-105D



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

SV-106I



Soil Vapor Extractic tainment System
Site 1, Former Drum Marshalling Yard
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Groundwater Concentration Trends of Select VOCs

SV-106D