OPERABLE UNIT 1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM

Operations, Maintenance, and Monitoring Report
April 1 through June 30, 2015

Lockheed Martin Corporation
Former Unisys Facility Great Neck
Lake Success, New York
NYSDEC Site ID# 130045

Prepared for:

Lockheed Martin Corporation

Energy, Environment, Safety and Health
6801 Rockledge Drive
Bethesda, MD 20817

Prepared by:

AMEC E & E PC

453 Route 146
Clifton Park, New York 12065
(518) 372-0905

September 2, 2015

Project No. 3650140001.02.209

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Prepared by:	Reviewed/Approved by:
Lynne M. Baumgras, Ph.D., PG	William J. Weber, PE
Project Scientist	Project Manager

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ACRONYMS AND ABBREVIATIONS

AGC	Annual Guideline Concentration
AMEC	AMEC E&E PC
amsl	above mean sea level
ARV	air relief valve
bls	below land surface
CW	clearwell
DAR-1	Division of Air Resources Air Guide-1
ECU	emission control unit
EDD	electronic data deliverable
EW	extraction well (i.e., EW-1); also referred to as a recovery well.
GES	Groundwater & Environmental Services, Inc.
G&M	Geraghty & Miller
GWTS	Groundwater Treatment System
hp	horsepower
K/O	knockout
lbs	pounds
LPZ	low-permeability zone
LSH	level switch high
LSHH	level switch high high
MCP	Main Control Panel
NYSDEC	New York State Department of Environmental Conservation
O&M	operations and maintenance
OM&M	operation, maintenance, and monitoring
OU1	Operable Unit 1
PADM	Performance Analysis and Design Modification Plan

PLC	programmable logic controller
PPZ	potassium permanganate-impregnated zeolite
PSL	pressure switch low
Report	Remedial System Operation, Maintenance, and Monitoring Report, April 1 through June 30, 2015
RSPAP	Relocation Startup and Performance Analysis Plan
RW	recovery well
SCADA	Supervisory Control and Data Acquisition
SGC	Short-term Guideline Concentration
SSDS	sub slab depressurization system
SVE	soil vapor extraction
TED	technical environmental data
TT	Well designation pertaining to Tetra Tech
TVOC	total volatile organic compound
UPS	uninterruptable power supply
USEPA	United States Environmental Protection Agency
VFD	variable frequency drive
VOC	volatile organic compound
VPGAC	vapor-phase granular activated-carbon
VW	vapor monitoring well

1.0 INTRODUCTION

This Remedial System Operation, Maintenance, and Monitoring Report, April 1 through June 30, 2015 (Report) is intended to meet the requirements specified in the New York State Department of Environmental Conservation (NYSDEC) - approved Performance Analysis and Design Modification Plan (PADM) (ARCADIS G&M, Inc. 2003), and the Relocation Startup and Performance Analysis Plan (RSPAP) (ARCADIS G&M, Inc. 2001) for the former Unisys Facility located at 1111 Marcus Avenue, Lake Success, New York. A Site Location Map is provided as Figure 1.

This Report summarizes the Operable Unit 1 (OU1) Groundwater Treatment System (GWTS) and the OU1 Soil Vapor Extraction (SVE) System operation, maintenance, and monitoring (OM&M) activities performed by AMEC E&E PC (AMEC).

2.0 OU1 GROUNDWATER TREATMENT SYSTEM DESCRIPTION

The OU1 GWTS consists of the following major components:

- Three groundwater recovery wells (RWs) (EW-1 [NYSDEC well No. N-001818], RW-1RS [NYSDEC well No. N-13126], and RW-1RD [NYSDEC well No. N-13125])
    - Recovery well EW-1 was installed in August 1942 as a water supply well for the manufacturing facility that operated on the property at that time. The total borehole depth of EW-1 is 235 feet below land surface (bls), and the well is screened between 195 and 229 feet bls (-55 to -89 feet above mean sea level [amsl]).
    - Recovery well RW-1RS was installed in June 2000 to a total borehole depth of 218 feet bls and is screened between 144 and 164 feet bls (-4 to -24 feet amsl) and between 172 and 202 feet bls (-32 and -62 feet amsl).
    - Recovery well RW-1RD was installed in May 2000 to a total borehole depth of 292 feet bls and is screened between 238 and 268 feet bls (-98 and -128 feet amsl).
- A double walled high-density polyethylene influent pipe that connects the RWs to the GWTS.
- Two Layne Christensen air strippers (AS-100 and AS-200; model number PLS 76.25.55S) and associated clearwells (CW-100 and CW-200)
- Two CW pumps (P-100 and P-200):
    - One 15-horsepower (hp) Crown (P-100; model number 12CC-1100STD) associated with CW-100
    - One 25 hp Crown (P-200; model number 12CC-1100STD) associated with CW-200
- Two Eaton Filtration bag filter units (BF-222 and BF-225; model number Maxiline MBF0802HE), each containing eight 50-micron filter bags to filter the effluent water stream prior to discharge to the diffusion wells (DWs). The filters are configured to operate one at a time and are operated based on a CW water level set point.
- One Class 24, 50 hp Twin City Fan and Blower (model number HIB 270) air blower (B-320)
- One Chromalox electric duct heater (DH-600; model number ADH-080) to heat the air stream prior to carbon treatment.
- Four U.S. Filter emission control units (ECUs); (model number RB-20), which include two ECUs (vapor-phase granular activated-carbon [VPGAC]-1 and VPGAC-3) each filled with approximately 14,000 pounds (lbs) of Evoqua VCRSD regenerated coconut-based VPGAC, and two ECUs (potassium permanganate-impregnated zeolite [PPZ]-2 and PPZ-4) each filled with approximately 34,000 lbs of Hydrosil HS-600 PPZ.
- Four operating DWs (DW-11 [NYSDEC well No. 13281D], DW-12 [NYSDEC well No. N-13380D], DW-13 [NYSDEC well No. N-13694D], and DW-14 [NYSDEC well No. N-14096]).

The OU1 GWTS process is summarized below.

Groundwater impacted by volatile organic compounds (VOCs) is extracted from the subsurface Magothy Aquifer and pumped through a subsurface pipeline to the OU1 GWTS for treatment prior to being recharged to the aquifer. Specifically, groundwater is extracted from three RWs and pumped through two air strippers arranged in series. The treated groundwater is then pumped through a subsurface pipeline to four DWs, where it is reintroduced into the aquifer.

During air stripping, VOC-impacted water enters the first air stripper (AS-100) at the top, and exhaust air from the effluent of the second air stripper (AS-200) enters at the bottom. The partially treated water drains by gravity into the first clearwell (CW-100) prior to being pumped into the top of the second air stripper (AS-200). The treated water then drains by gravity into the second clearwell (CW-200). The treated water is then pumped from the second clearwell through one of the two 50-micron particulate bag filter units prior to being discharged to the diffusion wells. Ambient air enters the second clearwell (CW-200) and is pulled up through the second air stripper (AS-200).

VOCs are transferred from the water to the counter-current air stream. The VOC-laden air stream (off-gas) leaving the last air stripper is heated by the duct heater (DH-600) to decrease its relative humidity and is then treated through the four ECUs to remove VOCs prior to discharge to the atmosphere. The air stripper off-gas is split into two parallel streams, each of which is forced through one VPGAC-filled ECU and then one PPZ-filled ECU. The parallel air stripper off-gas streams are recombined after passing through the PPZ-filled ECUs and are then discharged through the 30-foot stack to the atmosphere. A Site Plan of the OU1 GWTS is presented in Figure 2, and a System Schematic showing sampling locations is provided as Figure 3.

3.0 OU1 SOIL VAPOR EXTRACTION SYSTEM DESCRIPTION

The OU1 SVE System is designed to remove perched water and extract soil gas from both above and below the low-permeability zone (LPZ) by inducing a vacuum in the unsaturated zone within the extent of impacted soil. The locations of each extraction and monitoring well are shown on Figures 4 and 13.

The OU1 SVE System consists of the following major components:

- Four existing 4-inch-diameter SVE wells (VW-13, VW-15, VW-17, and VW-18).
    - VW-13 was installed in 1990 to a total depth of 85 feet bls and is screened between 45 and 85 feet bls.
    - VW-15 was installed in 1999 to a total depth of 40 feet bls and is screened between 32 and 37 feet bls.
    - VW-17 was installed in 1999 to a total depth of 39 feet bls and is screened between 31 and 36 feet bls.
    - VW-18 was installed in 1999 to a total depth of 38 feet bls and is screened between 29 and 34 feet bls.
- Two former 4-inch-diameter SVE wells that are available for monitoring (VW-14 and VW-19).
    - VW-14 was installed in 1990 to a total depth of 40 feet bls and is screened between 20 and 40 feet bls.
    - VW-19 was installed in 2001 to a total depth of 35 feet bls and is screened between 22 and 32 feet bls.
- Nineteen existing 2-inch-diameter OU1 SVE System monitoring wells are used to monitor the extent of vacuum influence:
    - VW-1 was installed in 1990 to a total depth of 65 feet bls and is screened in two locations between 45-64 feet bls and between 66 and 85 feet bls.
    - VW-4 was installed in 1990 to a total depth of 90 feet bls and is screened between 60 and 90 feet bls.
    - VW-5 was installed in 1990 to a total depth of 93 feet bls and is screened between 73 and 93 feet bls.
    - VW-6 was installed in 1990 to a total depth of 90 feet bls and is screened between 70 and 90 feet bls.
    - VW-8 was installed in 1990 to a total depth of 86 feet bls and is screened between 66 and 86 feet bls.
    - VW-9 was installed in 1990 to a total depth of 90 feet bls and is screened between 70-90 feet bls.
    - TT-3 was installed in 1998 to a total depth of 72 feet bls and has three distinct tubes at depths of 52, 62 and 72 feet bls.

- TT-5 was installed in 1998 to a total depth of 37 feet bls and has one distinct tube at a depth of 37 feet bls.
- TT-6 was installed in 1998 to a total depth of 38 feet bls and has two distinct tubes at depths of 29 and 38 feet bls.
- TT-8 was installed in 1998 to a total depth of 52 feet bls and has one distinct tube at a depth of 52 feet bls.
- VP-3 was installed in 2008 to a total depth of 30 feet bls and has 4 distinct tubes at depths of 5, 10, 20, and 30 feet bls.
- VP-3D was installed in 2008 to a total depth of 73 feet bls and has 4 distinct tubes at depths of 40, 51, 61, and 73 feet bls.
- VP-108 was installed in 2010 to a total depth of 39 feet bls and has 5 distinct tubes at 5, 10, 20, 29.5, and 39 feet bls.
- VP-108D was installed in 2010 to a total depth of 84.5 feet bls and has 4 distinct tubes at 50.5, 59.4, 70.1, and 84.5 feet bls.

Six new monitoring wells were installed for the SVE system in April 2015 and performance evaluation testing was completed in May 2015. This work was included in the Soil Vapor Extraction System Evaluation Report, dated July 31, 2015 (AMEC 2015).

- VMW-1 was installed in 2015 to a total depth of 33 feet bls and is screened between 28 and 33 feet bls.
- VMW-2 was installed in 2015 to a total depth of 33 feet bls and is screened between 28 and 33 feet bls.
- VMW-3 was installed in 2015 to a total depth of 70 feet bls and has 2 distinct tubes at 33 and 70 feet bls.
- VMW-4 was installed in 2015 to a total depth of 33 feet bls and is screened between 28 and 33 feet bls.
- VMW-5 was installed in 2015 to a total depth of 33 feet bls and is screened between 28 and 33 feet bls.
- VMW-6 was installed in 2015 to a total depth of 33 feet bls and is screened between 28 and 33 feet bls.

Performance evaluation testing utilized VP-3, VP-3D, VP-108, and VP-108D as vapor monitoring wells.

- Two Ametek Rotron 10 hp blowers (B-200 and B-300; model number DR858BB72W); one operated at a time with one available as a backup unit.
- One JE Gasho & Associates, Inc. knockout tanks (KT-300; model number GX-60-C-GX30) for condensate collection. Knockout tank KT-200 was taken out of service during SVE re-piping on July 29, 2014.
- Two Oberdorfer Pumps Corporation transfer pumps (TP-200 and TP-300; model number N994R) with Baldor Electric Corporation motors (model number SAJ31656) to transfer condensate removed from the SVE vapor stream in the K/O tanks into CW-100 for treatment.

- One Xchanger Inc. heat exchanger (HX-400; model number AA500) to cool the air stream prior to treatment.
- Six U.S. Filter ECUs (model number VSC-2000), which include four ECUs (VPGAC-1 through VPGAC-4), each filled with approximately 1,650 lbs of regenerated coconut-based VPGAC, and two ECUs (PPZ-1 and PPZ-2), each filled with approximately 2,700 lbs of Hydrosil HS-600 PPZ.
- Four Clean Environment Equipment automatic, bottom-loading, pneumatic, submersible pumps (model number AP-4) for extraction of perched water from SVE wells VW-15, VW-17, VW-18, and VW-19.
- One Ingersoll Rand 7.5 hp air compressor (AC-100; model number 2475) for operating the bottom-loading, pneumatic, submersible pumps.
- One HARMSCO particulate filter (model number HIF 7) with seven 10-micron polyester particulate filters to remove particulates from the combined condensate and perched groundwater prior to discharge to the GWTS CW-100.
- One TIGG Econosorb L liquid-phase carbon drum filled with approximately 150 lbs of TIGG 5DC virgin coconut-based, liquid-phase carbon for treatment of the combined condensate and perched groundwater prior to discharge to the GWTS CW-100.

The OU1 SVE System process flow is summarized below.

During operation of the OU1 SVE System, approximately 150 standard cubic feet per minute of soil vapor is extracted from vapor extraction wells VW-13, VW-15, VW-17, and VW-18 (located adjacent to the southeast corner of the Former Unisys Facility) and is treated by the six ECUs to remove VOCs prior to discharge to the atmosphere. The soil vapor stream is split into two parallel streams, and each stream is forced through two VPGAC-filled ECUs in series. After VPGAC treatment, the streams are recombined and forced through two PPZ-filled ECUs in series before discharge to the atmosphere. To optimize the effectiveness of the OU1 SVE System, as discussed in the RSPAP (ARCADIS G&M, Inc. 2001) and in the System Operation, Maintenance, and Monitoring Report, November 2001 through December 2002 (ARCADIS G&M, Inc., 2003), vapor extraction wells VW-14 and VW-19 remain off-line.

A LPZ is present in the subsurface at a depth of approximately 30 to 40 feet bls. The thickness of the LPZ is approximately 10 feet. Perched groundwater accumulates above this LPZ and is recovered using four bottom-loading, pneumatic, submersible pumps. The pumps are operated in automatic mode and remove perched water from the wells. The perched water is pumped to the OU1 SVE System treatment shed, where it is combined with condensate water removed from the extracted soil vapor stream. The combined water stream is then pumped to the OU1 GWTS.

Extracted perched groundwater and SVE condensate are filtered by 10-micron polyester filters and pumped through liquid-phase carbon prior to being pumped to CW-100 and then combined with the extracted groundwater through the second air stripper tower in the OU1 GWTS. The combined treated water is then discharged with the OU1 GWTS treated water stream to the DWs. A Site Plan of the OU1 SVE System is presented on Figure 4, and a System Schematic of the OU1 SVE System is provided as Figure 5.

4.0 OPERATION AND MAINTENANCE ACTIVITIES

Section 4.1 describes 2015 Q2 operation and maintenance (O&M) activities for the OU1 GWTS and Section 4.2 discusses 2015 Q2 O&M activities for the SVE system.

4.1 OU1 GROUNDWATER TREATMENT SYSTEM

OU1 GWTS O&M activities are summarized in Table 1.

The following OU1 GWTS O&M activities were conducted during this reporting period (from April 1 through June 30, 2015):

- The OU1 GWTS operated for approximately 41.0 out of 90 days (approximately 45.1 percent uptime) during the current reporting period. From July 1, 2014 to June 30, 2015, the OU1 GWTS operated for approximately 249 out of 365 days (approximately 68.2 percent uptime). The majority of the system downtime during the current reporting period was due to an unanticipated blower motor failure and repair (97.4 percent of total downtime). Other system downtime was a result of alarm conditions related to regular system operations (1.4 percent of total downtime), and anticipated work or maintenance (1.2 percent of total downtime). System downtime during the current reporting period is summarized in this section and is also outlined in Table 1.
- While operational, the OU1 GWTS was monitored three times per day, seven days per week during this reporting period, either by physical site inspections or remote computer monitoring. The majority of site monitoring was conducted by physical site inspections. During this reporting period, system parameter readings, while the system was operational, were recorded continuously by the Supervisory Control and Data Acquisition (SCADA) system.
- OU1 GWTS monthly alarm and operator testing was performed on April 9, 2015 and additional non routine alarm testing was performed on April 28, 2015. No alarm tests were conducted during the month of May or June while the system was off from blower failure and subsequent repair of the blower. The following tests were completed:
    - **April 9, 2015.** The system was shut down by staff at 8:58 for monthly alarm testing. Critical alarms tests included the EW-1 E-Stop and level sensor high (LSH)/level sensor high high (LSHH) alarms, and the RW-1RD LSH/LSHH alarms. The primary EW-1 low flow alarm was also tested. Additional RW LSH/LSHH testing was completed and re-monitoring of the annual transducer depth to water measurements was performed. The system was restarted the same day at 10:07.
    - **April 28, 2015.** The system was shut down on April 28 multiple times by staff by staff for non-routine alarm testing. RW floats, air relief valve (ARV) floats, leak detection cable, and pressure switch low (PSL)-15 alarms were tested. The system was shut down from 10:09 to 10:30, 10:36 to 10:47, 11:03 to 11:08, 11:35 to 11:40, 12:06 to 12:16, and 12:40 to 12:45.

During the April 9 alarm testing, it was found that some alarms did not perform as expected. The RW-1RD LSHH sent an email advisory but it did not result in system shutdown. The EW-1 LSH did not function and the EW-1 LSHH activated the email and advisory light but did not result in pump or system shut down. The RW-1RS LSH did not result in any shutdown. The RW-1RS LSHH resulted in the RW-1RS pump shutdown only. April 28 testing confirmed some results from above and revealed that the EW-1 LSH does function properly with a short time delay. The programmable logic controller (PLC) code, relays, and wiring were checked and adjusted as necessary to allow alarms to function properly. Backlogged alarm testing from May and June will be completed during July, 2015. During all other tests, the system shut down as designed, and alarm interlocks and notification components were confirmed to operate properly. Routine maintenance activities were conducted following each alarm test event.

- The OU1 GWTS was shut down by staff on April 8 at 12:32 to complete the annual transducer depth to water monitoring. The system was restarted the same day at 13:43.
- The OU1 GWTS was shut down on April 11 at 10:32 by alarm of the influent pipeline leak detection system cable. The system was restarted the same day at 11:47.
- The OU1 GWTS shut down on April 20 at 8:49 due to an effluent vapor flow rate transmitter malfunction. Condensate was drained from the effluent duct and the system was restarted at 10:12.
- The EW-1 pump was shut off on April 25 at 15:53 to ensure that the system remained running during bag filter change-out. The pump was restarted at 16:15.
- The OU1 GWTS was shut down on April 27 at 20:56 due to an electrical/power fluctuation that caused the two main circuit breakers inside the main control panel (MCP) to trip. The shutdown was discovered upon arrival of the operator onsite the next morning. Although the system shut down correctly, the condition caused the PLC to freeze and the SCADA system continue to display false data that made the system appear operational to operators conducting remote monitoring checks. The system was restarted on April 28 at 7:51.
- The OU1 GWTS was shut down on April 29 by staff at 11:11 due to required electrical shutdown for troubleshooting activities. The system was restarted the same day at 11:16.
- The EW-1, RW-1RS, and RW-1RD pumps were offline on April 29 for megger testing from 13:21 to 13:29, 13:30 to 14:37, and 13:38 to 14:23, respectively.
- The OU1 GWTS was shut down by staff on May 1 at 13:40 to conduct electric line testing. The system was restarted the same day at 14:44.
- The OU1 GWTS was shut down by staff on May 4 to troubleshoot wire pulling related to the new wires installed during the influent pipeline construction. The system was down from 11:30 to 12:30 and 13:00 to 15:00.
- The OU1 GWTS was shut down on May 5 by staff at 7:22 for wire repairs. The system was restarted the same day at 14:00.
- The OU1 GWTS was shut down by staff on May 7 during PLC troubleshooting and reprogramming activities. The system was down from 8:25 to 8:53 and from 12:43 to 13:03.
- The OU1 GWTS shut down on May 7 due to a blower failure and the system could not be restarted. Troubleshooting by electricians on May 8 indicated that there was damaged wiring

at the blower motor junction box (probable cause is thought to be the blower vibration). After replacing the wires the blower could not be restarted. Further testing and evaluation determined that the air stripper blower motor had failed and needed to be replaced. The system was restarted on June 25 at 13:00 with all three recovery wells running but RW-1RS was left off to keep the system running over the weekend.

- The OU1 GWTS shut down on June 26 from 10:26 to 11:49 and 12:13 to 14:06 due to communication loss from the fiber optic system. The fiber optic cables were switched from channel A to channel B at the Phoenix digital unit in the MCP and each of the recovery well remote panels to resolve the issue.
- The RW-1RS pump was shut down on June 26 at 16:26 to keep the system running over the weekend because the bag filters need to be changed more frequently upon system startup at full flow. The system operated at a reduced capacity while RW-1RS was off. The well was placed back online on June 29 at 8:37.
- The OU1 GWTS shut down on June 29 at 8:40 on a low blower flow after RW-1RS was restarted. The system was restarted the same day at 8:45. The system continued to operate at a reduced capacity until the diffusion wells could be adjusted to accept a higher flow rate.

4.2 OU1 SOIL VAPOR EXTRACTION SYSTEM

OU1 SVE System O&M activities are summarized in Table 2. The following OU1 SVE System O&M activities were conducted during this reporting period (April 1 through June 30, 2015):

- The OU1 SVE System operated for approximately 89.8 out of 91 days (approximately 98.7 percent uptime) during the current reporting period. From July 1, 2014 through June 30, 2015, the OU1 SVE System operated for approximately 356 out of 365 days (approximately 97.5 percent uptime). The majority of system downtime during the current reporting period was due to alarms related to normal system operations (81.8 percent of total downtime). The remaining downtime was due to scheduled maintenance (18.2 percent of the total downtime). System downtime during the current reporting period is summarized in this section and is outlined in Table 2. During each shutdown period, communications between the SVE and SSDS operators confirmed that the SSDS remained online during the SVE shutdowns.
- The system shut down on April 1 at 11:37 on a blower motor fault alarm. The system was restarted the same day at 12:01. Prior to restart, the monthly blower rotation was performed. Blower B-200 was turned on and B-300 was shut off.
- The system shut down on April 4 at 23:00 due to failure of the uninterruptible power supply (UPS). On April 5, the system was checked and the UPS was replaced with a spare. The system was restarted at 13:00 on April 5.
- The air compressor was shut off on April 9 by staff from 11:00 to 14:17 during the installation of a totalizer on the knockout tank (K/O) transfer pump water lines and a totalizer on the SVE system combined perch water and K/O transfer pump line.
- The system was shut down by staff on April 14 at 12:46 to troubleshoot the knockout (K/O) transfer pump operation and the presence of water in SVE lines. The system was restarted the same day at 14:00.

- The SVE system was temporarily down on April 28 from 7:49 to 7:51 and 10:28 to 10:30 when circuit breakers in the MCP had to be reset.
- The system was shut down by staff on May 1 at 15:58 for the scheduled monthly blower rotation. Blower B-300 was turned on and B-200 was shut off. The system was restarted the same day at 16:00.
- The system shut down on May 3 at 11:32 due to a blower motor fault condition on Blower B-300. The system was restarted with B-300 online the same day at 12:50.
- The system shut down on May 10 at 6:15 due to a blower motor fault condition on Blower B-300. The system was restarted with B-300 online the same day at 7:22.
- The system was shut down by staff on June 1 at 10:00 for the scheduled monthly blower rotation. B-200 was turned on and B-300 was shut off. The system was restarted the same day at 10:05.
- The system shut down on June 18 at 0:01 due to a blower motor fault condition. The system was restarted the same day at 7:04.
- The system was shut down by staff on June 19 from 11:20 to 14:18 due to power shutdown in the MCP for electrical work on the pipeline wiring.
- The system was shut down by staff on June 25 from 9:45 to 10:56 due to a power shutdown in the MCP for the GWTS start-up/troubleshooting activities.

5.0 COMPLIANCE MONITORING ACTIVITIES

This section summarizes monthly compliance sampling and monitoring activities completed during the current reporting period for the OU1 GWTS and the OU1 SVE System.

5.1 OU1 GROUNDWATER TREATMENT SYSTEM

In accordance with the OU1 GWTS PADM (ARCADIS G&M, Inc. 2003), two compliance sampling events (one monthly and one quarterly) were completed during the reporting period. The monthly water compliance sampling event was conducted on April 16, 2015. Monthly sampling in May was not conducted due to blower motor failure that caused the system to be down from May 7 through the end of May. The combined monthly and quarterly groundwater and vapor compliance sampling event was completed on June 30, 2015. The sampling events consisted of the following:

- **April 16, 2015:**
  - Monthly water compliance sampling consisted of collecting one system effluent water sample (WSP-6) and one duplicate system effluent water sample.
- **June 30, 2015:**
  - Monthly water compliance sampling consisted of collecting one system effluent water sample (WSP-6) and one duplicate system effluent water sample.
  - Quarterly water compliance sampling consisted of collecting individual water samples from EW-1, RW-1RS, and RW-1RD (WSP-1, WSP-2, and WSP-3, respectively), and one effluent water sample from air stripper #1 (WSP-5).
  - Quarterly vapor compliance sampling consisted of collecting one system influent vapor sample (VSP-2), one system effluent vapor sample (VSP-3), and one duplicate system effluent vapor sample.

Water samples were submitted to TestAmerica in Shelton, Connecticut for VOC analysis using United States Environmental Protection Agency (USEPA) Method OLM04.2 modified, including Freon 22, Freon 115, Freon 123, and Freon 152a. Vapor samples were submitted to ALS Group (formerly Columbia Analytical Services, Inc.) in Simi Valley, California for analysis using USEPA Method TO-15 modified, including Freon 22 and Freon 115. Analytical sample results are summarized in Appendix A. The analytical data are stored in the AMEC Technical Environmental Data (TED) database and are also available upon request. NYSDEC EQuIS electronic data deliverables (EDDs) will be created on a semi-annual basis (every six months) and submitted to NYSDEC. Field and analytical data collected during these compliance sampling events were used to assess the performance of the OU1 GWTS. Analytical data from vapor samples VSP-2 and

VSP-3, which were collected on June 30, yielded spuriously low values; therefore, vapor samples VSP-2 and VSP-3 were collected again on August 6, 2015 in order to generate more representative system data. System performance of the OU1 GWTS is discussed in Section 6.1 of this report.

5.2 OU1 SOIL VAPOR EXTRACTION SYSTEM

In accordance with the OU1 SVE System RSPAP (ARCADIS G&M (Geraghty & Miller), Inc. 2001), three monthly vapor compliance sampling events were completed during the reporting period. The vapor compliance sampling events were completed on April 16, May 15, and June 9, 2015. The sampling events consisted of the following:

- **April 16, 2015:**
  - Monthly vapor compliance sampling consisted of collecting one system influent vapor sample (SVE-1), one effluent vapor sample from the first PPZ-filled ECU (PPZ-1; SVE-7), and one system effluent vapor sample (SVE-2).
- **May 15, 2015:**
  - Monthly vapor compliance sampling consisted of collecting one system influent vapor sample (SVE-1), one effluent vapor sample from the first PPZ-filled ECU (PPZ-1; SVE-7), and one system effluent vapor sample (SVE-2).
- **June 9, 2015:**
  - Monthly vapor compliance sampling consisted of collecting one system influent vapor sample (SVE-1), one effluent vapor sample from the first PPZ-filled ECU (PPZ-1; SVE-7), and one system effluent vapor sample (SVE-2).

Vapor samples were submitted to ALS Group (formerly Columbia Analytical Services, Inc.) in Simi Valley, California for analysis using USEPA Method TO-15 modified, including Freon 22 and Freon 115. Analytical results are summarized in Appendix B. The analytical data are stored in the AMEC TED database and are also available upon request. NYSDEC EQuIS EDDs will be created on a semi-annual basis (every six months) and submitted to NYSDEC. Field and analytical data collected during these compliance sampling events were used to assess performance of the OU1 SVE System. Performance of the OU1 SVE System is discussed in Section 6.2 of this report.

6.0 SYSTEM PERFORMANCE RESULTS AND DISCUSSION OF OPERATION, MAINTENANCE, AND MONITORING RESULTS

6.1 GROUNDWATER TREATMENT SYSTEM

In accordance with the OU1 GWTS PADM (ARCADIS G&M, Inc. 2003), the following tables and graphs were developed to summarize system operation and performance during the current reporting period (April 1 to June 30, 2015):

- Summary of influent and effluent water sample analytical results, including treatment system removal efficiency (Tables 3 and 4, respectively). Complete, validated water sample analytical results, per event, are included in Appendix A.
- Summary of influent and effluent vapor sample analytical results, including treatment system removal efficiency (Tables 5 and 6, respectively). Complete, validated vapor sample analytical results, per event, are included in Appendix A. As indicated in Section 5.1, the analytical results from vapor samples VSP-2 and VSP-3, collected on June 30, yielded spuriously low values VSP-2 and VSP-3 were re-sampled on August 6, 2015. Analytical results from the replacement VSP-2 and VSP-3 samples were not available at the time of this report; therefore, averaged values based on the past three quarters of historical data were used to estimate influent and effluent mass removal and system efficiency values.
- System parameters, including flow rates and line pressures (Table 7)
- Summary of groundwater recovered and mass removed (Table 8)
- GWTS cumulative (total VOCs [TVOC]) mass removed through June 2015 (Figure 6)
- GWTS influent TVOC concentrations through June 2015 (for each RW and for combined influent; Figure 7)
- GWTS TVOC mass removal rates through June 2015 (for each RW and for combined influent; Figure 8)

The OU1 GWTS OM&M results for the current reporting period (April 1 to June 30, 2015) are presented below:

- Total volume of groundwater recovered and treated (Table 8):
    - During this reporting period: Approximately 41.9 million gallons. RW totalizer readings recorded on April 30, May 29, and June 29, 2015 were used to estimate the volume of groundwater recovered during the reporting period.
    - Project total (since April 1993): Approximately 5.8 billion gallons
- Volume of groundwater recovered from each well for this reporting period (RW totalizer readings recorded on April 30, May 29, and June 29, 2015) were used to estimate the volume of groundwater recovered during the reporting period; Table 8):
    - EW-1: Approximately 21 million gallons

  - RW-1RS: Approximately 13 million gallons
  - RW-1RD: Approximately 8 million gallons

- Total mass of VOCs recovered and estimated mass removal rates for each well for this reporting period (Table 8):
  - EW-1: Approximately 40 lbs of VOCs recovered at an average rate of 1.0 lbs per operational day
  - RW-1RS: Approximately 23 lbs of VOCs recovered at an average rate of 0.63 lbs per operational day
  - RW-1RD: Approximately 7 lbs of VOCs recovered at an average rate of 0.18 lbs per operational day
  - Estimated TVOCs recovered (April 1 through June 30, 2015); RW totalizer readings recorded on January 30, February 27, and March 31, 2015 were used to estimate the mass of VOCs recovered and the mass removal rate: Approximately 70 lbs of VOCs recovered at an average rate of 1.8 lbs per operational day.
  - Cumulative VOCs recovered (since April 1993): More than 44,520 lbs. The rate of total TVOC mass removed is illustrated on Figure 6.
  - As shown on Figure 7, the VOC total influent concentration trend has remained relatively constant when compared to recent historical data.
- The OU1 GWTS effluent water quality met NYSDEC requirements during this reporting period as the concentrations of individual VOCs in the plant effluent did not exceed project target requirements (Table 4).
- Treatment efficiency of the vapor emission control system, as estimated from historical data was greater than 99.0 percent (Table 6). The average of historical data was used because laboratory analytical data for the June sampling event were anomalously low.

6.2 OU1 SOIL VAPOR EXTRACTION SYSTEM

In accordance with the OU1 SVE System RSPAP (ARCADIS G&M, Inc. 2001), the following tables, graphs, and figures were developed to summarize system operation and performance during the current reporting period (April 1 to June 30, 2015):

- Summary of influent and effluent vapor sample analytical results, including treatment system removal efficiency (Tables 9 and 10, respectively)
- Summary of perched water sample analytical results (Table 11)
- System parameters, including system flow rate and air pressures (Table 12)
- Mass recovery summary (including perched water recovered and VOC mass removed; Table 13)
- SVE system combined influent vapor flow rate through June 2015 (Figure 9)
- SVE system combined influent vapor TVOC concentration through June 2015 (Figure 10)

- SVE system cumulative mass TVOC removed through June 2015 (Figure 11)
- SVE system perched water TVOC concentration through June 2015 (Figure 12)
- SVE system induced vacuum readings through June 2015 (Figure 13)

The OU1 SVE System OM&M results for the current reporting period are discussed below:

- The vapor-phase treatment VOC removal efficiency of the OU1 SVE system was greater than 99.9 percent during the reporting period (Table 10).
- Total mass of VOCs recovered from the vapor stream and estimated mass recovery rates (vapor stream flow rates recorded April 15, May 15, and June 12, 2015 were used to estimate the mass of VOC recovered and the mass recovery rates during the reporting period):
    - Total mass of VOCs recovered from the vapor stream during this reporting period is approximately 20 lbs at an average rate of 0.2 lbs per operational day (Table 13).
    - Cumulative mass of VOCs recovered since January 1994 is more than 43,500 lbs (Figure 11 and Table 13).
- Total volume of perched groundwater recovered and treated (Table 13):
    - During this reporting period: The SVE condensate and total flow totalizers were replaced during this reporting period and flows are calculated using earlier estimated values. It is estimated that approximately 190 gallons were recovered and treated.
    - Project total (since January 1994): More than 124,750 gallons.
- Total mass of VOCs recovered from perched water and treated:
    - During this reporting period: Approximately 0.01 lbs.
    - Project total (since March 2000): Approximately 24 lbs.
- Induced vacuum measurements at the SVE wells and associated monitoring wells (Figure 13):
    - Induced vacuum measurements were recorded during the current reporting period at monitoring points screened at shallow intervals (20 to 50 feet bls), installed at discrete shallow depths (20 to 50 feet bls), screened at deep intervals (60 to 80 feet bls), and installed at discrete deep depths (60 to 80 feet bls).

Monthly collection and analysis of induced vacuum measurements at the SVE wells and associated monitoring wells will continue during the next reporting period.

A test was performed during the quarter on the radius of influence (ROI) created by each of the vapor extraction wells that are currently operating. Recommendations are provided in Section 8.2.

6.3 REGULATORY STATUS OF AIR EMISSIONS

Comparisons of effluent vapor concentrations versus the NYSDEC DAR-1 Model Short-term Guideline Concentrations (SGCs) for the OU1 SVE System, based on NYSDEC DAR-1 SCREEN Model AGCs, for the April through June 2015 sampling events are presented in Table 14. Table 15 shows the cumulative percent of Annual Guideline Concentrations (AGCs) for the (theoretically) combined OU1 GWTS and OU1 SVE System for the April through June 2015 sampling events. OU1 GWTS calculations performed in accordance with the NYSDEC Division of Air Resources Air Guide-1 (DAR-1) Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC, 1991). AGC/SGC Tables (NYSDEC, 2014) are presented in Appendix C. OU1 SVE System calculations are presented in Appendix D.

The vapor effluent from the OU1 GWTS system met NYSDEC requirements throughout the reporting period, as indicated by the following:

- The actual concentrations of individual VOCs in vapor effluent samples for the OU1 SVE and the OU1 GWTS System during this reporting period did not exceed their respective SGCs (Tables 14 and 15).
- The modeled maximum concentrations of individual VOCs, as calculated using the NYSDEC DAR-1 SCREEN Model, in the vapor effluent samples for the OU1 SVE and OU1 GWTS systems and the theoretically combined OU1 SVE and OU1 GWTS System, analyzed individually for a rolling twelve-month period, did not exceed their respective AGCs (Tables 14 and 15).

7.0 GROUNDWATER MONITORING ACTIVITIES

Water samples were not collected from on-site monitoring wells during the current reporting period. Synoptic water level measurements were collected from available on-site and off-site monitoring and RWs in April 2015 and will be collected again in August 2015. Groundwater quality evaluation and potentiometric surface maps of the Upper Glacial aquifer, along with the Upper, Middle, and Basal portions of the Magothy aquifer, will be included in the 2015 Annual Groundwater Report to be provided under separate cover.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information provided in this report, both OU1 GWTS and the OU1 SVE System operated as designed during this reporting period with the exception of the downtime described in Sections 4.1 and 4.2, respectively. The system will continue to be maintained to operate as designed. The replacement of the influent pipeline and rebuild of the air stripper blower will improve system uptime and allow greater mass removal. Sections 8.1 and 8.2 describe the recommendations and action items planned for implementation during the next operational quarter, which will be modified to include only July and August 2015 (subsequent quarters will comprise three months):

8.1 OU1 GROUNDWATER TREATMENT SYSTEM

The following recommendations and action items are planned for implementation at the OU1 GWTS during the next operational quarter:

- Maintain the GTWS to operate as designed.
- Continue long-term remote system monitoring at the current frequency of three times per day, seven days per week.
- Conduct alarm testing in July to catch up on alarm testing schedule for alarms that could not be tested in May and June due to the OU1 GWTS having been off line.
- Evaluate if there is a need to change out VPGAC media which is tentatively scheduled for September, 2015.
- Per the Amended ROD for OU1 (NYSDEC, 2015), the GWTS will be upgraded with the installation of a new extraction well that will bring the total GWTS flow capacity to 850 gallons per minute (gpm). A design for an additional OU1 recovery well (RW-3) is currently under development.

8.2 OU1 SOIL VAPOR EXTRACTION SYSTEM

The following recommendations and action items are planned for implementation at the OU1 SVE System during the next operational quarter:

- Continue operating the SVE system with one blower on-line at a time, rotating on a monthly basis.
- Repair SVE condensate and total flow totalizers.
- Continue system compliance sampling.
- Continue long-term remote system monitoring at the current frequency of three times per day, seven days per week.

- Evaluate if there is a need to change out VPGAC media which is tentatively scheduled for September 2015.
- Conduct perched water pilot test and evaluate if the liquid phase GAC treatment can be eliminated from the perched water treatment train.
- Remove SVE monitoring wells TT-5, TT-6, and TT-8 from the SVE monitoring program. These monitoring locations have historically provided unreliable induced differential pressure information.
- Remove VW-9 from the SVE monitoring program. It has been monitored irregularly due to access issues and is too far from the SVE extraction wells to provide effective data for the SVE system.
- Add SSDS monitoring wells VP-3, VP-3D, VP-108, VP-108D to the SVE monitoring program. It is recommended that these wells be added to the SVE monitoring program since they are located near the SVE extraction wells and have been shown to provide valuable monitoring data for the system.
- Add newly installed (2015) SVE monitoring wells VMW-1 through VMW-6 to the SVE monitoring program.

9.0 REFERENCES

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NYSDEC, 1991. Guidelines for the Control of Toxic Ambient Air Contaminants, 1991.

TABLES

Table 1 — Operational Summary through June 2015, OU1 Groundwater Treatment System
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Month	Day																													Days on line [1]
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
2001 Totals																																5
2002 Totals																																205
2003 Totals																																354
2004 Totals																																315
2005 Totals																																169
2006 Totals																																337
2007 Totals																																327
2008 Totals																																317
2009 Totals																																340
2010 Totals																																319
2011 Totals																																335
2012 Totals																																341
2013 Totals																																335
Jul-14																#**																30.9
Aug-14														#**																		29.9
Sep-14															G, K	G, K	G, K												#*			24.4
Oct-14																				#**												25.0
Nov-14																																5.1
Dec-14																							#*									10.9
2014 Totals																																253
Jan-15															#																	29.0
Feb-15																#																26.7
Mar-15																#*																25.6
Apr-15								(2)	(3)		(4)					#				(5)					(6)		(7)	(7)(8)	(9)(10)			29.3
May-15	(11)			(12)	(13)		(14)(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	6.2
Jun-15	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(16),(17)	(17)	(17)	(17),(18)	(18)#*		5.5
2015 Totals																																122
12 Month Totals																																249
TOTAL																																**4,074**

See notes on last page.

Legend:

- System down for majority of day.
- System up majority of day. Throughput less than 90%
- System up majority of day. Throughput greater than 90%

*	Indicates vapor compliance samples were collected.
**	Indicates vapor performance samples were collected.
#	Indicates water compliance samples were collected.
##	Indicates water performance samples were collected.
G	Indicates VPGAC change out.
K	Indicates PPZ change out.

Table 1 — Operational Summary through June 2015, OU1 Groundwater Treatment System
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Notes:

1. Days on line listed represent the actual operational time rounded to the nearest one tenth of 1 day. Month total, annual total, and project total days on line are rounded to the nearest full day.
2. On 4/8/15, the system was shut down by staff at 12:32 to complete the annual transducer DTW monitoring. The system was restarted the same day at 13:43.
3. On 4/9/15, the system was shut down by staff at 8:58 for monthly alarm testing. Critical alarms tests included the EW-1 E-Stop and LSH/LSHH alarms, and the RW-1RD LSH/LSHH alarms. The primary EW-1 low flow alarm was also tested. Additional RW LSH/LSHH testing was completed and re-monitoring of the annual transducer DTW measurements was performed. The system was restarted the same day at 10:07.
4. On 4/11/15, the system shut down at 10:32 by alarm of the influent pipeline leak detection system cable. The system was restarted the same day at 11:47.
5. On 4/20/15, the system shut down at 8:49 due to an effluent vapor flow rate transmitter malfunction. Condensate was drained from the effluent duct and the system was restarted at 10:12.
6. On 4/25/15, EW-1 was shut off at 15:53 to ensure the system remained running during bag filter changeout. The pump was restarted at 16:15.
7. On 4/27/15, the system was shut down at 20:56 due to an electrical/power fluctuation causing the two main circuit breakers inside the MCP to trip. The shutdown was discovered upon arrival of the operator onsite the next morning. Although the system shut down correctly, the condition caused the PLC to freeze and the SCADA system continue to display the system as operational. The system was restarted on 4/28/15 at 7:51.
8. On 4/28/15, the system was shut down multiple times by staff for non-routine alarm testing. RW floats, ARV floats, leak detection cable, and PSL-15 alarms were tested. The system was shut down at 10:09 to 10:30, 10:36 to 10:47, 11:03 to 11:08, 11:35 to 11:40, 12:06 to 12:16, and 12:40 to 12:45.
9. On 4/29/15, the system was shut down by staff at 11:11 due to required electrical shutdown for troubleshooting activities. The system was restarted the same day at 11:16.
10. On 4/29/15, EW-1, RW-1RS, and RW-1RD were offline for megger testing from 13:21 to 13:29, 13:30 to 14:37, and 13:38 to 14:23, respectively.
11. On 5/1/15, the system was shut down by staff at 13:40 to conduct electric line testing. The system was restarted the same day at 14:44.
12. On 5/4/15, the system was shut down by staff to troubleshoot wire pulling related to the new wires installed during the influent pipeline construction. The system was down from 11:30 to 12:30 and 13:00 to 15:00.
13. On 5/5/15, the system was shut down by staff at 7:22 for wire repairs. The system was restarted the same day at 14:00.
14. On 5/7/15, the system was shut down by staff during PLC troubleshooting/reprogramming activities. The system was down from 8:25 to 8:53 and from 12:43 to 13:03.
15. On 5/7/15, the system shut down on a blower failure. The VFD displayed a fault of "Ground Short Circuit." The system could not be restarted. Troubleshooting by electricians on 5/8 indicated that there was damaged wiring at the blower motor connection (likely due to vibration). After replacing the wires the blower could not be restarted. The VFD and blower needed replacement/repair. The system was restarted on 6/25/15 at 13:00 with all three recovery wells running, but later RW-1RS was left off to keep the system running over the weekend.
16. On 6/26/15, the system shut down from 10:26 to 11:49 and 12:13 to 14:06 due to communication loss from the fiber optic system. The fiber optic cables were switched from channel A to channel B at the Phoenix digital unit in the MCP and each of the recovery well remote panels to resolve the issue.
17. On 6/26/15, well RW-1RS was shut down at 16:26 to keep the system running over the weekend because the bag filters need to be changed more frequently upon system startup at full flow. The system operated at a reduced capacity while RW-1RS was off. The well was placed back online on 6/29/15 at 8:37.
18. On 6/29/15 the system shut down at 8:40 on a low blower flow after RW-1RS was restarted. The system was restarted the same day at 8:45. The system continued to operate at a reduced capacity until the diffusion wells could be adjusted to accept a higher flow rate.

gpm	gallons per minute	O&M	operation and maintenance
GWTS	groundwater treatment system	OU1	Operable Unit 1
VPGAC	vapor-phase granular activated-carbon		

Table 2 — Operational Summary through June 2015, OU1 Soil Vapor Extraction System
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Month	Day																													Days on line [1]
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1994 - 1999																																1,523
2000 Totals																																229
2001 Totals																																242
2002 Totals																																301
2003 Totals																																346
2004 Totals																																329
2005 Totals																																261
2006 Totals																																337
2007 Totals																																352
2008 Totals																																338
2009 Totals																																347
2010 Totals																																354
2011 Totals																																328
2012 Totals																																353
2013 Totals																																287
Jul-14																*, **																31.0
Aug-14														*																		30.1
Sep-14																													*			27.7
Oct-14																				*, **												31.0
Nov-14													*																			28.5
Dec-14															*																	30.4
2014 Totals																																352
Jan-15															*																	29.3
Feb-15																*																27.9
Mar-15																*																30.4
Apr-15	(2)			(3)	(3)				(4)					(5)		*												(6)				29.4
May-15	(7)		(8)							(9)					*																	30.9
Jun-15	(10)								*									(11)	(12)						(13)							29.5
2015 Totals																																177
12- Month Totals																																356
TOTAL																																**6,456**

See notes on last page.

Legend:

	System down for majority of day.
	System up majority of day. Throughput less than 90%
	System up majority of day. Throughput greater than 90%

*	Indicates a vapor compliance sample was collected.
**	Indicates a vapor performance sample was collected.
#	Indicates a water compliance sample was collected.
##	Indicates a water performance sample was collected.

Table 2 — Operational Summary through June 2015, OU1 Soil Vapor Extraction System
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Notes:

1. Days on line listed represent the actual operational time rounded to the nearest one tenth of 1 day. Month total, annual total, and project total days on line are rounded to the nearest full day.
2. On 4/1/15, the system shut down at 11:37 on a blower motor fault alarm. The system was restarted the same day at 12:01. Prior to restart, the monthly blower rotation was performed. Blower B-200 was turned on and B-300 was shut off.
3. On 4/4/15, the system shut down at 23:00 due to failure of the UPS. On 4/5/15 the system was checked and the UPS was replaced with a spare. The system was restarted at 13:00 on 4/5/15.
4. On 4/9/15, the air compressor was shut off by staff from 11:00 to 14:17 during the installation of a totalizer.
5. On 4/14/15, the system was shut down by staff at 12:46 to troubleshoot the K/O transfer pump operation and the presence of water in SVE lines. The system was restarted the same day at 14:00.
6. On 4/28/15, the SVE system was temporarily down from 7:49 to 7:51 and 10:28 to 10:30 when circuit breakers in the MCP had to be reset.
7. On 5/1/15, the system was shut down by staff at 15:58 for the scheduled monthly blower rotation. Blower B-300 was turned on and B-200 was shut off. The system was restarted the same day at 16:00.
8. On 5/3/15, the system shut down at 11:32 due to a blower motor fault condition. The system was restarted the same day at 12:50.
9. On 5/10/15, the system shut down at 6:15 due to a blower motor fault condition. The system was restarted the same day at 7:22.
10. On 6/1/15, the system was shut down by staff at 10:00 for the scheduled monthly blower rotation. Blower B-200 was turned on and B-300 was shut off. The system was restarted the same day at 10:05.
11. On 6/18/15, the system shut down at 0:01 due to a blower motor fault condition. The system was restarted the same day at 7:04.
12. On 6/19/15, the system was offline from 11:20 to 14:18 due to a power shutdown in the MCP for electrical work on the pipeline wiring.
13. On 6/25/15, the system was offline from 9:45 to 10:56 due to a power shutdown in the MCP for the GWTS start-up/troubleshooting activities.

GWTS	groundwater treatment system	SSDS	sub-slab depressurization system
NYSDEC	New York State Department of Environmental Conservation	SVE	soil vapor extraction
O&M	Operation and maintenance	VPGAC	vapor-phase granular activated-carbon
OU1	Operable Unit 1		

Table 3 — Summary of Influent Water Sample (WSP-4) Analytical Results through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Compound[2]	02/05/2013[4] (µg/L)	03/20/2013 (µg/L)	09/18/2013 (µg/L)	03/27/2014 (µg/L)	9/29/2014 (µg/L)	3/16/2015 (µg/L)
1,1-Dichloroethene	**1.5**	**1.1**	**1.3**	1.0 U	**0.98**	**0.89**
cis-1,2-Dichloroethene	**190**	**160**	**180**	**120**	**130**	**120**
Carbon tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorodifluoromethane (Freon 22)	**3.4**	**3.4**	**4.1**	**2.2**	**2.4**	**2.4**
Tetrachloroethene	**28**	**25**	**28**	**27**	**24**	**21**
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	**34**	**28**	**32**	**28**	**25**	**22**
Trichlorotrifluoroethane (Freon 113)	**9.6**	**8.8**	**12**	**8.3**	**8.1**	**7.7**
Vinyl chloride	**17**	**16**	**15**	**3.6**	**11**	**15**
Total VOCs[3]	**284**	**242**	**272**	**189**	**201**	**189**

Notes:

1. Semi-annual samples were collected by O&M personnel on the dates shown and submitted to Test America, Inc. for VOC analyses using USEPA Method OLM04.2 modified. The most recent semi-annual sample was collected on September 29, 2014. Data presented in this table correspond approximately to the past year of system operation.
2. Only VOCs listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride are presented in this table. Laboratory data qualifiers, excluding the "U" qualifier, are not listed in this table, but are included in the Appendix A.
3. "Total VOCs" represents the numerical sum of individual concentrations of compounds listed in this table. "Total VOCs" was rounded to the nearest integer.
4. Sample collected as part of the NYSDEC-approved air flow reduction program.

BOLD Detected concentrations are bolded.
NYSDEC New York State Department of Environmental Conservation
O&M operation and maintenance
OU1 Operable Unit 1
PADM Performance Analysis and Design Modification Plan
U The compound was analyzed for but not detected. The associated value is the compound reporting limit.
USEPA U. S. Environmental Protection Agency
VOC volatile organic compound
µg/L micrograms per liter

Table 4 — Summary of Effluent Water Sample (WSP-6) Analytical Results and Treatment System Efficiency through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Compound[2]	Target (µg/L)	07/16/2014 (µg/L)	08/14/2014 (µg/L)	09/29/2014 (µg/L)	10/20/2014[7] (µg/L)	12/23/2014 (µg/L)	01/15/2015 (µg/L)	02/16/2015 (µg/L)	03/16/2015 (µg/L)	04/16/2015[8] (µg/L)	6/30/2015 (µg/L)
1,1-Dichloroethene	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorodifluoromethane (Freon 22)	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorotrifluoroethane (Freon 113)	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total VOCs[4]	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Treatment Efficiency[5]	NA	NA[6]	NA[6]	**>98.3%**	NA[6]	NA[6]	NA[6]	NA[6]	**>98.1%**	NA[6]	NA[6]

Notes:

1. Samples were collected by O&M personnel on the dates shown and submitted to Test America, Inc. for VOC analyses using USEPA Method OLM04.2 modified. Data presented in this table correspond approximately to the past year of system operation.
2. Only VOCs listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride are presented in this table. Laboratory data qualifiers, excluding the "U" qualifier, are not listed in this table, but are included in the Appendix A. Analytical results presented in this table represent the larger of the individual compound concentration detected in the effluent and duplicate effluent samples.
3. Project target effluent limits per the PADM (ARCADIS G&M Inc. 2001a).
4. "Total VOCs" represents the sum of individual concentrations of compounds listed in this table. The values used in calculations referenced in this report have not been rounded.
5. Treatment efficiency of reported compounds was calculated by dividing the difference between the total influent and effluent VOC concentrations by the total influent VOC concentration. To account for the possibility that there is some amount of compound still present in the effluent below its laboratory detection limits of 1.0 µg/L, when the laboratory reports a "non-detect" result, a value of half of the detection limit (typically 0.5 µg/L) for all reported compounds detected in the influent is added to the total effluent VOC concentration. Because the total effluent compound concentration is based solely on the detection limits and not on actual compounds detected, these values were reported as greater than the calculated treatment efficiency.
6. Treatment efficiency corresponding to the sampling event could not be calculated because an influent sample was not collected (WSP-4 influent samples are collected on a semi-annual basis).
7. Lack of November effluent water sample is due to the system being shut down on 11/10/14 for the new influent pipeline installation The system was offline the remainder of November.
8. No system effluent sample in May. The system was down on 5/7/15 as a result of a blower failure and it remained down through the end of the month.

NA not applicable
O&M operation and maintenance
OU1 Operable Unit 1
PADM Performance Analysis and Design Modification Plan
U The compound was analyzed for but not detected. The associated value is the compound reporting limit.
USEPA U. S. Environmental Protection Agency
VOC volatile organic compound
µg/L micrograms per liter
> greater than
% percentage

Table 5 — Summary of Influent Vapor Sample (VSP-2) Analytical Results through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Compound[2]	12/11/2013[4] (µg/m^3)	03/27/2014[4] (µg/m^3)	06/16/2014 (µg/m^3)	09/29/2014 (µg/m^3)	12/23/2014 (µg/m^3)	03/16/2015 (µg/m^3)	6/30/2015[5] (µg/m^3)
1,1-Dichloroethene	**7.8**	27 U	**20**	15 U	60 U	**17**	***6***
cis-1,2-Dichloroethene	**1,700**	**1,500**	**2,900**	**2,200**	**2,700**	**2,300**	***2,400***
Carbon tetrachloride	4.5 U	43 U	17 U	23 U	95 U	19 U	5.0 U
Chlorodifluoromethane (Freon 22)	**38**	**35**	**43**	**38**	54 U	**37**	***25***
Tetrachloroethene	**350**	**340**	**420**	**490**	**290**	**400**	***393***
Toluene	**2.9**	26 U	14 U	14 U	57 U	11 U	**5.6**
Trichloroethene	**410**	**360**	**550**	**530**	**370**	**470**	***457***
Trichlorotrifluoroethane (Freon 113)	**100**	**120**	**170**	**160**	**160**	**140**	***153***
Vinyl chloride	**15**	**51**	**200**	**160**	**340**	**210**	***237***
Total VOCs[3]	**2,624**	**2,406**	**4,303**	**3,578**	**3,860**	**3,574**	***3,671***

Notes:

1. Samples were collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses using USEPA Method TO-15 modified. Data presented in this table correspond to the past year of system operation.
2. Only VOCs listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride are presented in this table. Laboratory data qualifiers, excluding the "U" qualifier, are not listed in this table, but are included in the Appendix A.
3. "Total VOCs" represents the numerical sum of individual concentrations of compounds listed in this table. "Total VOCs" was rounded to the nearest integer.
4. Sample collected with recovery well RW-1RS off line.
5 Estimated data based on average of past three quarters of sampling results as June 30 analytical results are suspect.

BOLD Detected concentrations are bolded.
O&M operation and maintenance
OU1 Operable Unit 1
PADM Performance Analysis and Design Modification Plan
U The compound was analyzed for but not detected. The associated value is the compound reporting limit.
USEPA U. S. Environmental Protection Agency
VOC volatile organic compound
µg/m^3 micrograms per cubic meter

Table 6 — Summary of Effluent Vapor Sample (VSP-3) Analytical Results and Treatment System Efficiency through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Compound[2]	06/16/2014 (µg/m^3)	07/16/2014 (µg/m^3)	09/29/2014 (µg/m^3)	12/23/2014 (µg/m^3)	03/16/2015 (µg/m^3)	6/30/2015[6] (µg/m^3)
1,1-Dichloroethene	3.0 U	**4.3**	2.7 U	2.9 U	3.0 U	3.1 U
cis-1,2-Dichloroethene	**39**	**96**	3.0 U	2.9 U	3.0 U	3.1 U
Carbon tetrachloride	4.8 U	4.7 U	4.2 U	4.6 U	4.8 U	5.0 U
Chlorodifluoromethane (Freon 22)	**23**	**35**	**20**	**17**	**28**	***22***
Tetrachloroethene	5.0 U	5.1 U	5.0 U	4.9 U	5.2 U	5.4 U
Toluene	2.9 U	2.8 U	2.5 U	2.7 U	2.9 U	3.0 U
Trichloroethene	4.0 U	4.1 U	4.0 U	3.9 U	4.1 U	4.3 U
Trichlorotrifluoroethane (Freon 113)	5.9 U	5.8 U	5.1 U	5.6 U	5.9 U	6.1 U
Vinyl chloride	**68**	**76**	1.7 U	1.9 U	2.0 U	2.0 U
Total VOCs[3]	**130**	**211**	**20**	**17**	**28**	***22***
Treatment Efficiency[4]	**>96.8%**	**NA**[5]	**>99.2%**	**>99.3%**	**>98.9%**	**>99.0%** [6]

Notes:

1. Samples were collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses using USEPA Method TO-15 modified. Data presented in this table correspond to the past year of system operation.
2. Only VOCs listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride are presented in this table. Laboratory data qualifiers, excluding the "U" qualifier, are not listed in this table, but are included in the Appendix A. Analytical results presented in this table represent the larger of the individual compound concentration detected in the effluent and effluent duplicate samples.
3. "Total VOCs" represents the numerical sum of individual concentrations of compounds listed in this table. "Total VOCs" was rounded to the nearest integer.
4. Treatment efficiency of reported compounds was calculated by dividing the difference between the total influent and effluent VOC concentrations by the total influent VOC concentration. To account for the possibility that there is some amount of compound still present in the effluent below its laboratory reporting limit of 0.5 ppbv, when the laboratory reports a "non-detect" result, a value of half of the reporting limit (typically 0.25 ppbv) for all reported compounds detected in the influent is added to the total effluent VOC concentration.
5. VSP-2 not sampled in July 2014.

6 Estimated data based on average of past three quarters of sampling results as June 30 analytical results from the laboratory are suspect.

BOLD Detected concentrations are bolded.
O&M operation and maintenance
OU1 Operable Unit 1
PADM Performance Analysis and Design Modification Plan
ppbv parts per billion by volume
U The compound was analyzed for but not detected. The associated value is the compound reporting limit.
USEPA U. S. Environmental Protection Agency
VOC volatile organic compound

Table 7 — OU1 Groundwater Treatment System Parameters through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Date[1]	Water Flow Rates[2]				Water Pressures[2]					Air Flow Rate[2]	Air Pressures[2]					Air Temp.[2]
	Recovery Well			Combined Influent	Recovery Well Effluent			Combined Influent	Combined Effluent	Effluent	ECU Influent		Intermediate		Effluent	Stack Temp.
	RW-1RD (gpm)	RW-1RS (gpm)	EW-1 (gpm)	(gpm)	RW-1RD (psi)	RW-1RS (psi)	EW-1 (psi)	(psi)	(psi)	(scfm)	VPGAC #1 (inH_2O)	VPGAC #3 (inH_2O)	PPZ #2 (inH_2O)	PPZ #4 (inH_2O)	(inH_2O)	(°R)
07/17/14	150	330	360	840	97	30	31	15	8	3,350	1.9	1.9	1.1	1.0	0.4	554
08/14/14	150	225	350	725	99	36	40	14	5	3,095	1.9	1.9	1.1	1.1	0.3	554
09/29/14	150	250	360	760	97	31	28	15	3	3,055	1.7	1.7	1.0	1.1	0.0	546
10/20/14	140	220	350	710	NM	NM	NM	15	25	3,151	1.9	1.9	9.2	1.2	0.3	547
10/28/14	0	0	0	0	0	0	10	15	14	3,060	1.9	1.9	9.3	1.4	0.1	544
11/05/14[7]	NM	NM	NM	NM	NM	NM	NM	15	15	3,036	2.0	2.0	11.7	1.4	0.0	528
12/22/14[7]	NM	NM	NM	NM	NM	NM	NM	NM	19	3,351	2.3	2.3	1.0	1.0	0.0	520
12/29/14[7]	140	250	360	750	NM	NM	25	NM	18	3,608	2.1	2.1	1.2	2.3	0.1	544
01/13/15	150	240	370	760	NM	NM	NM	NM	20	3,454	2.1	2.1	2.3	1.4	0.2	539
02/13/15	140	240	360	740	NG	NG	10	NM	15	3,379	2.0	2.0	10.7	1.3	0.5	539
3/18/2015[8]	140	240	353	733	NG	NG	10	NM	15	3,278	2.2	2.2	10.1	1.3	0.5	540
4/14/2015	140	250	360	750	NG	NG	10	NM	16	3,511	1.8	1.8	9.1	1.5	0.5	550
5/14/2015	offline	offline	offline	offline	offline	offline	offline	offline	offline	offline	offline	offline	offline	offline	offline	offline
06/29/15	140	240	350	730	NG	NG	10	NM	23	3,407	1.3	1.3	0.8	0.8	0.4	551

See notes on next page.

Table 7 — OU1 Groundwater Treatment System Parameters through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Notes:

1. Operational data collected by O&M personnel on days noted. Dates listed are typically for compliance monitoring events. Data presented in this table correspond to the past year of system operation.
2. Instantaneous values from field-mounted instruments, except for the combined influent water flow rate (which is the sum of the extraction well flow rates) and the air flow rate (which is recorded from the SCADA).
3. The OU1 GWTS operated at reduced capacity of approximately 595 gpm (recovery well EW-1, RW-1RS, and RW-1RD at approximately 300, 235, and 60 gpm, respectively) due to fouling of the air stripper tower AS-100.
4. The OU1 GWTS operated at a reduced flow rate of approximately 650 gpm due to declining diffusion well performance. To accommodate diffusion well DW-12 rehabilitation, the system flow rate was further reduced to approximately 460 gpm (with recovery wells EW-1, RW-1RS, and RW-1RD at 250, 125, and 85 gpm, respectively) on August 26, 2013 and the system continued to operate at a reduced flow rate while diffusion well DW-12 rehabilitation work continued during the September 2013.
5. Recovery well RW-1RD was placed offline on October 3, 2013 due to a flow meter failure. The flow meter was replaced on October 21, 2013 but the recovery well was kept offline to accommodate the diffusion well DW-13 rehabilitation work that started on October 23, 2013. Recovery well RW-1RD was placed online on November 18, 2013, due to the recovery well RW-1RS pump failure. The OU-1 GWTS continued to operate at a reduced flow rate of approximately 500 gpm during the reporting period to accommodate diffusion well DW-13 rehabilitation work.
6. System was shut down on February 2, 2014 to drain influent line in preparation of influent line pressure test commencing on February 3, 2014. System remained offline from February 2, 2014 to March 24, 2014 for pipeline testing and repairs.
7. The OU1 GWTS was off for much of November and December for new influent pipeline activities while the SVE system remained on. From October 14 to December 12, 2014 the system was down for pipeline construction and recovery wells EW-1, RW-1RS, and RW-1RD were off. October recovery well flow rates are from daily log sheets and pressures were unrecorded because the system was off for pipeline excavation activities. November water parameters were unable to be recorded for water recovery well flow rates and pressures.
8. Water recovery well parameters shown in the table were collected on 3/13/2015. The air parameters were collected on 3/18/15 which is the date shown in the table.

°R	degrees Rankine
ECU	emissions control unit
gpm	gallons per minute
GWTS	groundwater treatment system
in H_2O	inches of water
NA	not applicable
NG	not gauged - gauge locations removed during pipeline construction
NM	not measured
O&M	operation and maintenance
OU1	Operable Unit 1
PPZ	potassium permanganate-impregnated zeolite
psi	pounds per square inch
SCADA	Supervisory Control and Data Acquisition system
scfm	standard cubic feet per minute
Temp.	temperature
VPGAC	vapor-phase granular activated-carbon

Table 8 — Summary of Groundwater Recovered and Mass Removed through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Operating Period[1]	Volume of Groundwater Recovered (x1,000 gallons)[2]				Mass Recovered (lbs)[3]				Mass Recovery Rate (lbs/day)[4,5]			
	EW-1	RW-1RS	RW-1RD	Total	EW-1	RW-1RS	RW-1RD	Total	EW-1	RW-1RS	RW-1RD	Total
Groundwater IRM System[6]												
	NA	NA	NA	1,919,000	NA	NA	NA	29,170	NA	NA	NA	NA
ROD-Required OU1 GWTS 2002 Totals[7]												
	68,168	61,352	31,426	160,947	330	1,802	216	2,350	1.6	8.9	1.1	12
ROD-Required OU1 GWTS 2003 Totals[7]												
	163,741	136,817	57,702	358,258	996	1,991	324	3,310	2.9	5.9	1.0	9.9
ROD-Required OU1 GWTS 2004 Totals[7]												
	173,621	61,579	40,120	275,321	857	581	161	1,600	2.8	2.8	0.5	6.2
ROD-Required OU1 GWTS 2005 Totals[7]												
	75,137	61,469	22,785	159,391	252	523	72	850	1.6	3.1	0.5	5.2
ROD-Required OU1 GWTS 2006 Totals[7]												
	149,395	126,200	45,794	321,389	459	898	136	1,490	1.4	2.8	0.4	4.6
ROD-Required OU1 GWTS 2007 Totals[7]												
	193,133	102,318	35,515	330,966	469	501	78	1,050	1.4	1.5	0.2	3.2
ROD-Required OU1 GWTS 2008 Totals[7]												
	136,902	106,685	17,161	260,748	280	416	29	720	0.88	1.3	0.090	2.3
ROD-Required OU1 GWTS 2009 Totals[7]												
	170,481	128,246	64,322	363,049	344	390	92	830	1.0	1.1	0.27	2.4
ROD-Required OU1 GWTS 2010 Totals[7]												
	154,692	115,515	50,484	320,691	316	353	78	750	0.96	1.1	0.24	2.3
ROD-Required OU1 GWTS 2011 Totals[7]												
	122,538	107,306	77,635	307,479	241	263	105	600	0.90	0.79	0.31	1.8
ROD-Required OU1 GWTS 2012 Totals[7]												
	172,725	77,769	73,463	323,957	352	180	103	630	1.1	0.72	0.32	1.9

See notes on last page.

Table 8 — Summary of Groundwater Recovered and Mass Removed through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Operating Period[1]	Volume of Groundwater Recovered (x1,000 gallons)[2]				Mass Recovered (lbs)[3]				Mass Recovery Rate (lbs/day)[4,5]			
	EW-1	RW-1RS	RW-1RD	Total	EW-1	RW-1RS	RW-1RD	Total	EW-1	RW-1RS	RW-1RD	Total
ROD-Required OU1 GWTS 2013 Totals[7]												
	160,327	25,261	92,357	277,945	346	55	87	490	1.1	0.18	0.39	1.5
ROD-Required OU1 GWTS 2014 Totals[7]												
	139,285	70,317	61,986	271,588	282	127	53	470	1.0	0.45	0.21	1.7
ROD-Required OU1 GWTS 2015												
12/29/14 - 3/31/15	42,516	27,731	18,024	88,272	77	52	12	140	0.9	0.67	0.14	1.7
3/31/15 - 6/29/15	20,728	12,890	8,279	41,897	40	23	7	70	1.0	0.63	0.18	1.8
Subtotal 2015[12]	63,244	40,621	26,304	130,169	117	75	19	210	1.0	0.65	0.16	1.7
Total (ROD-Required)[13,14]	1,943,390	1,221,450	697,050	3,861,900	5,640	8,160	1,550	15,350	NA	NA	NA	NA
Total (IRM and ROD-Required Systems)[14,15]				**5,780,900**				**44,520**				

See notes on last page.

Table 8 — Summary of Groundwater Recovered and Mass Removed through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Notes:

1. Represents operating period between consecutive monitoring events.
2. Volume of groundwater recovered is based on individual local well totalized flow readings. Listed value is the difference between totalized flow values recorded between consecutive monitoring events. The total groundwater recovered during a given operating period is the sum of the individual well flow totals. Values shown have been rounded to the nearest gallon.
3. Mass recovered per well was calculated by multiplying the average Total VOC concentrations of two consecutive sampling events by the number of gallons extracted between sampling events. Values shown have been rounded to the nearest pound. The total amount recovered during a given operating period is the sum of masses recovered from each of the individual wells rounded to the nearest 10 pounds.
4. Mass recovery rates were calculated by dividing the total mass recovered by each recovery well by the number of days the recovery well operated during the respective operating period. Total mass recovery rates were calculated by dividing the total mass recovered by the system by the number of days the system operated during the respective operating period.
5. Mass recovery rates reported beginning with the 2008 operational period have been rounded to include two significant figures to account for error associated with field measurements and analytical data.
6. The OU1 IRM for the OU1 GWTS operated from April 1993 to June 2001.
7. The ROD-required OU1 GWTS totals for 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, and 2014 correspond to September 8, 2001 through December 19, 2002; December 19, 2002 through December 30, 2003; December 30, 2003 through January 1, 2005; January 1 to December 31, 2005; January 1 to December 20, 2006; December 20, 2006 to December 21, 2007; December 21, 2007 to December 10, 2008; December 10, 2008 to December 9, 2009; December 9, 2009 to December 14, 2010; December 14, 2010 to December 21, 2011; December 21 to December 14, 2012; December 14, 2012 to December 11, 2013; and December 11, 2013 to December 29, 2014
8. Local recovery well totalizer readings were not recorded on January 1 or March 31, 2013 during the first operational period. The volume of groundwater recovered and mass recovered calculations represent the operational periods between December 14, 2012 and March 20, 2013.
9. Local recovery well totalizer readings were not recorded on April 1 or June 30, 2013 during the second operational period. The volume of groundwater recovered and mass recovered calculations represent the operational periods between March 20 and June 19, 2013.
10. Local recovery well totalizer readings were not recorded on July 1 or September 30, 2013 during the third operational period. The volume of groundwater recovered and mass recovered calculations represent the operational periods between June 19 and September 18, 2013.
11. Local recovery well totalizer readings were not recorded on October 1 or December 31, 2013 during the third operational period. The volume of groundwater recovered and mass recovered calculations represent the operational periods between September 18 and December 11, 2013.
12. "Subtotal (2015)" refers to the amounts removed by the ROD-required system during 2015; mass recovery rates are averages and not totals.
13. "Total (ROD-Required)" refers to the amounts removed by the ROD-required OU1 GWTS.
14. Total volume of groundwater recovered and reported has been rounded to the nearest 10 gallons. Total mass recovered and reported has been rounded to the nearest 10 pounds.
15. "Total (IRM and ROD-Required Systems)" refers to the amounts removed since inception of the OU1 IRM and ROD-Required OU1 GWTS.

GWTS	groundwater treatment system	IRM	Interim Remedial Measure	ROD	Record of Decision
lbs	pounds	NA	not applicable	VOC	volatile organic compound
lbs/day	pounds per day	OU1	Operable Unit 1		

Table 9 — Summary of Influent Vapor Sample (SVE-1) Analytical Results through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Compound[2]	10/20/2014 (µg/m^3)	11/13/2014 (µg/m^3)	12/15/2014 (µg/m^3)	01/15/2015 (µg/m^3)	02/16/2015 (µg/m^3)	03/16/2015 (µg/m^3)	04/16/2015 (µg/m^3)	05/15/2015 (µg/m^3)	06/09/15 (µg/m^3)
1,1-Dichloroethene	**45**	55 U	130 U	140 U	68 U	110 U	140 U	**32**	140 U
cis-1,2-Dichloroethene	**7,200**	**8,200**	**11,000**	**8,700**	**7,200**	**7,500**	**10,000**	**6,400**	**6,000**
Carbon tetrachloride	30 U	87 U	200 U	230 U	110 U	170 U	220 U	49 U	240 U
Chlorodifluoromethane (Freon 22)	17 U	49 U	110 U	130 U	61 U	97 U	120 U	27 U	140 U
Tetrachloroethene	**2,300**	**3,000**	**2,200**	**1,900**	**3,100**	**2,100**	**2,500**	**1,500**	**2,200**
Toluene	18 U	52 U	120 U	140 U	65 U	100 U	130 U	29 U	150 U
Trichloroethene	**6,200**	**7,700**	**6,500**	**5,800**	**5,700**	**6,400**	**7,400**	**3,700**	**4,900**
Trichlorotrifluoroethane (Freon 113)	**830**	**830**	**880**	**630**	**710**	**290**	**630**	**530**	**600**
Vinyl chloride	12 U	35 U	81 U	92 U	44 U	70 U	90 U	20 U	99 U
Total VOCs[3]	**16,575**	**19,730**	**20,580**	**17,030**	**16,710**	**16,290**	**20,530**	**12,162**	**13,700**

Notes:

1. Samples were collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses using USEPA Method TO-15 modified. Data presented in this table correspond to the past year of system operation.
2. Only VOCs listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride are presented in this table. Laboratory data qualifiers, excluding the "U" qualifier, are not listed in this table, but are included in the Appendix B.
3. "Total VOCs" represents the numerical sum of individual concentrations of compounds listed in this table. "Total VOCs" was rounded to the nearest integer.

BOLD Detected concentrations are bolded.
NA not applicable
NS not sampled
O&M operation and maintenance
OU1 Operable Unit 1
PADM Performance Analysis and Design Modification Plan
U The compound was analyzed for but not detected. The associated value is the compound reporting limit.
USEPA U. S. Environmental Protection Agency
VOC volatile organic compound
µg/m^3 micrograms per cubic meter

Table 10 — Summary of Effluent Vapor Sample (SVE-2) Analytical Results and Treatment System Efficiency through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Compound[2]	10/20/2014 (µg/m^3)	11/13/2014 (µg/m^3)	12/15/2014 (µg/m3)	01/15/2015 (µg/m3)	02/16/2015 (µg/m3)	03/16/2015 (µg/m3)	04/16/2015 (µg/m3)	05/15/2015 (µg/m3)	06/09/15 (µg/m3)
1,1-Dichloroethene	3.1 U	2.6 U	2.5 U	3.0 U	2.5 U	3.1 U	2.7 U	3.0 U	3.0 U
cis-1,2-Dichloroethene	**48**	**19**	**4.8**	**4.0**	2.5 U	3.1 U	**3.2**	**3.4**	**3.1**
Carbon tetrachloride	4.9 U	4.1 U	4.0 U	4.7 U	3.9 U	4.9 U	4.3 U	4.8 U	4.8 U
Chlorodifluoromethane (Freon 22)	**6.1**	**7.6**	**5.6**	**8.0**	**9.1**	**4.8**	**5.5**	**5.1**	**4.9**
Tetrachloroethene	5.3 U	4.4 U	3.4 U	5.1 U	4.2 U	5.3 U	4.7 U	5.2 U	5.2 U
Toluene	2.9 U	2.5 U	2.4 U	2.8 U	2.4 U	2.9 U	**7.3**	2.9 U	2.9 U
Trichloroethene	4.2 U	3.5 U	3.4 U	4.0 U	3.4 U	4.2 U	3.7 U	4.1 U	4.1 U
Trichlorotrifluoroethane (Freon 113)	5.9 U	5.0 U	4.9 U	5.7 U	4.8 U	6.0 U	5.3 U	5.9 U	5.9 U
Vinyl chloride	2.0 U	1.7 U	1.6 U	1.9 U	1.6 U	2.0 U	1.8 U	2.0 U	2.0 U
Total VOCs[3]	**54.1**	**26.6**	**10.4**	**12.0**	**9.1**	**4.8**	**16.0**	**8.5**	**8.0**
Treatment Efficiency[4]	**>99.6%**	**>99.8%**	**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Notes:

1. Samples were collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses using USEPA Method TO-15. Data presented in this table correspond to the past year of system operation.
2. Only VOCs listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride are presented in this table. Laboratory data qualifiers, excluding the "U" qualifier, are not listed in this table, but are included in the Appendix B.
3. "Total VOCs" represents the numerical sum of individual concentrations of compounds listed in this table. "Total VOCs" was not rounded.
4. Treatment efficiency of all compounds was calculated by dividing the difference between the total influent and effluent VOC concentrations by the total influent VOC concentration. To account for the possibility that some amount of compound is still present in the effluent sample below its laboratory reporting limit of 0.5 ppbv, when the laboratory reports a "non-detect" result, a value of half of the reporting limit (typically 0.25 ppbv) for all reported compounds detected in the influent is added to the total effluent VOC concentration.

BOLD Detected concentrations are bolded.
NA not applicable
NS not sampled
O&M operation and maintenance
OU1 Operable Unit 1
PADM Performance Analysis and Design Modification Plan
ppbv parts per billion by volume
U The compound was analyzed for but not detected. The associated value is the compound reporting limit.
USEPA U. S. Environmental Protection Agency
VOC volatile organic compound
µg/m^3 micrograms per cubic meter
> greater than

Table 11 — Summary of Perched Water Sample Analytical Results through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Compound[2]	12/14/2012[4] (µg/L)	01/17/2013 (µg/L)	02/20/2013 (µg/L)	03/20/2013[5] (µg/L)	03/26/2014[5] (µg/L)	03/16/2015[5] (µg/L)
1,1-Dichloroethene	NS	**93**	**92**	**78**	**41 J**	**20**
cis-1,2-Dichloroethene	NS	**15,000**	**13,000**	**13,000**	**5,400**	**3,400**
Carbon tetrachloride	NS	10 U	10 U	10 U	50 U	2.0 U
Chlorodifluoromethane (Freon 22)	NS	10 U	10 U	10 U	50 U	2.0 U
Tetrachloroethene	NS	**260**	**150**	**160**	**82**	**25**
Toluene	NS	**750**	**370**	**220**	50 U	2.0 U
Trichloroethene	NS	**270**	**110**	**120**	**55**	**20**
Trichlorotrifluoroethane (Freon 113)	NS	**870**	**750**	**540**	**330**	**180**
Vinyl chloride	NS	10 U	1.0 U	10 U	50 U	**0.24**
Total VOCs[3]	NA	**17,243**	**14,472**	**14,118**	**5,867**	**3,645**

Notes:

1. Samples were collected by O&M personnel on the dates shown and submitted to Test America, Inc. for VOC analyses using USEPA Method OLM04.2 modified. Data presented in this table correspond to the past year of system operation. Perched water samples represent the combined influent VOC concentrations from the four soil vapor extraction wells with perched water pumps installed.
2. Only VOCs listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride are presented in this table. Laboratory data qualifiers, excluding the "U" qualifier, are not listed in this table, but are included in the appendix tables.
3. "Total VOCs" represents the numerical sum of individual concentrations of compounds listed in this table. "Total VOCs" was rounded to the nearest integer.
4. Sample not collected due to the perched water system being off line from November 28, 2012 through the end of the reporting period.
5. With prior NYSDEC-approval, perched water performance sample frequency was reduced from monthly to annually.

BOLD	Detected concentrations are bolded.	J	Estimated concentration
NA	not applicable	U	The compound was analyzed for but not detected. The associated value is the compound reporting limit.
NS	not sampled		
NYSDEC	New York State Department of Environmental Conservation	USEPA	U. S. Environmental Protection Agency
O&M	operation and maintenance	VOC	volatile organic compound
OU1	Operable Unit 1	µg/L	micrograms per liter
PADM	Performance Analysis and Design Modification Plan		

Table 12 — OU1 Soil Vapor Extraction System Parameters through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Date[1]	Air Flow Rates			Air Pressures		
	Knockout 200 Manifold Flow Rate (scfm)	Knockout 300 Manifold Flow Rate (scfm)	Combined Total Flow[2] (scfm)	Knockout 200 Manifold Air Pressure (inH_2O)	Knockout 300 Manifold Air Pressure (inH_2O)	Blower Effluent[2] (inH_2O)
09/18/13	9	177	186	-26	-20	11
10/07/13	19	160	179	-24	-20	11
11/13/13	11	161	172	-23	-24	19
12/11/13	38	132	170	-22	-22	20
01/15/14	38	105	143	-27	-26	24
02/28/14	12	65	77	-38	-38	16
03/27/14	0	150	150	-42	-40	20
04/29/14	30	140	170	-38	-38	18
05/22/14	30	150	180	-38	-38	17
06/26/14	20	150	170	-39	-39	18
07/16/14	0	140	140	-34	-34	18
08/14/14[3]	-	-	150	-	-34	18
09/24/14[3]	-	-	150	-	-37	15
10/20/14[3]	-	-	150	-	-33	15
11/12/14[3]	-	-	150	-	-32	15
12/19/14[3]	-	-	150	-	-36	21
01/15/15[3]	-	-	150	-	-36	16
02/19/15[3]	-	-	165	-	-50	15
3/20/15[3]	-	-	170	-	-48	19
4/15/15[3]	-	-	175	-	-48	20
5/15/15[3]	-	-	135	-	-32	20
6/25/15[3]	-	-	150	-	-38	22

Notes:

1. Operational data collected by O&M personnel on days noted. Dates typically pertain to compliance monitoring events. Data presented in this table correspond to the past year of system operation.
2. Combined total flow rates shown were calculated based on the sum of the two manifold air flow rates.
3 Parameters collected with knockout tank KO-200 removed from treatment train after July 29, 2014.

inH_2O	inches of water	scfm	standard cubic feet per minute
O&M	operation and maintenance	<	lesser than
OU1	Operable Unit 1	>	greater than

Table 13 — OU1 Soil Vapor Extraction System Mass Recovery Summary through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Operating Period[1]	Vapor VOC Recovery		Operating Period[1]	Perched Water Recovery		
	Mass Recovered[2] (lbs)	Mass RecoveryRate[3] (lbs/day)		Volume Recovered[4] (gal)	Volume Recovery Rate[5] (gal/day)	Mass Recovered[6] (lbs)
12/27/07 - 12/11/08	199	0.6	12/27/07 - 12/11/08	4,122	13.4	0.577
12/11/08 - 12/09/09	139	0.4	12/11/08 - 12/09/09	6,140	18	0.537
12/09/09 - 12/22/10	131	0.4	12/09/09 - 12/22/10	2,719	7.3	0.077
12/22/10 - 12/14/11	121	0.4	12/22/10 - 12/14/11	2,784	8.9	0.057
12/14/11 - 12/14/12	92	0.2	12/14/11 - 12/14/12	1,049	3.0	0.015
12/14/12 - 12/11/13	62.0	0.2	12/14/12 - 12/11/13	4,248	15.1	0.500
12/11/13 - 12/29/14 [13]	90.0	0.2	12/11/13 - 12/29/14	4,711	13	0.389
12/29/14 - 01/30/15 [13]	9.0	0.3	12/29/14 - 01/30/15	250	8	0.010
01/30/15 - 02/26/15 [13]	8.0	0.3	01/30/15 - 02/26/15	250	9	0.010
02/26/15 - 03/27/15 [13]	9.0	0.3	02/26/15 - 03/27/15	250	9	0.010
03/27/15 - 04/28/15	9.0	0.3	03/27/15 - 04/28/15	159	5	0.006
04/28/15 - 05/28/15	6.0	0.2	04/28/15 - 05/28/15	35	1	0.001
05/28/15 - 06/25/15	6.0	0.2	05/28/15 - 06/25/15	0	0	0.000
Quarter Subtotals[11]	**20**	**0.20**		**190**	**2.1**	**0.008**
Totals[11,12]	**43,560**			**124,750**		**24**

See notes on next page.

gal	gallons
gal/day	gallons per day
lbs	pounds
lbs/day	pounds per day
OU1	Operable Unit 1
VOC	volatile organic compound

Table 13 — OU1 Soil Vapor Extraction System Mass Recovery Summary through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Notes:

1. Operating period represents the period between the monthly system monitoring events, except for the January 1, 1994 to December 29, 2006; March 1, 2000 to December 29, 2006; December 29, 2006 to December 27, 2007; December 27, 2007 to December 11, 2008; and December 11, 2008 to December 9, 2009 operating periods, which represent the operating periods between those dates.
2. Mass recovered was calculated by multiplying the mass recovery rate by the number of days the system was in operation within an operating period. Beginning with the April through June 2007 operational quarter, mass recovered has been rounded to include two significant figures to account for error associated with field measurements and analytical data.
3. Mass recovery rate was calculated by multiplying an average vapor concentration based on two consecutive sampling events by the air flow rate recorded during the current sampling event. Values shown have been rounded to include one significant figure to account for error associated with field measurements and analytical data.
4. Volume of perched water recovered was calculated by comparing two perched water totalizer readings recorded each month. Condensate from the knock-out tanks was subtracted from the perched water totalizer. Values shown have been rounded to the nearest 1 gallon.
5. Volume recovery rate was calculated by dividing the volume of perched water recovered by the number of operational days within the operating period. Beginning with the April through June 2007 operational quarter, volume recovery rates have been rounded to include two significant figures to account for error associated with field measurements.
6. Perched water mass recovered was calculated by multiplying the average perched water concentration based on two consecutive sampling events by the quantity of perched water recovered during the respective operating period.
7. The vapor VOC mass recovery rate for the January 1, 1994 to December 29, 2006 operating period, and the perched water volume recovery rate for the March 1, 2000 to December 29, 2006 operating period, were calculated based on the total mass and volume removed, respectively, between April 1 and December 29, 2006.
8. Knock-out tank condensate totalizing flow meter recorded an erroneously low perched water flow during the February and March 2011 operating period. Perched water recovery data were estimated using an average volume recovery rate of 2.8 gal/day observed for each day the system was online during the October 26 through December 22, 2010 operating period, as reported in the Remedial System Operation, Maintenance, and Monitoring Report, October 1 through December 31, 2010. The actual recovery rates listed in this table are averaged over the periods listed. System downtime was factored into the calculation.
9. Perched water recovery data for the September 22, 2011 through October 11, 2011 operating period were estimated using an average volume recovery rate of 4.4 gal/day (observed for each day the system was online during the January 20, 2011 through August 17, 2011 operating period) due to perched water pump malfunction.
10. Perched water recovery data for the June 13, 2012 through August 28, 2012 operating period were estimated using an average volume recovery rate of 3.2 gal/day (observed for each day the system was online during the January 11, 2012 through June 18, 2012 operating period) due to perched water pump malfunction.
11. Subtotal and total vapor mass recovered and perched water volume recovered were rounded to the nearest 10 lbs and gal, respectively. Subtotal and total perched water mass recovered has been rounded to include two significant figures.
12. "Totals" refers to the quantities recovered since system inception.
13. Perched water recovery is estimated as flow totalizer for combined water was not operational during this period.

Table 14 — Regulatory Status of Air Emissions through June 2015, OU1 Soil Vapor Extraction System
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Compound[1]	SGC[2] ($\mu g/m^3$)	Short-Term Concentrations — Actual Stack Concentration[3]			AGC[4] ($\mu g/m^3$)	Annual Concentrations — Percent AGC (%)[5]		
		April 2015 ($\mu g/m^3$)	May 2015 ($\mu g/m^3$)	June 2015 ($\mu g/m^3$)		April 2015 (%)	May 2015 (%)	June 2015 (%)
1,1-Dichloroethene	NS	2.7 U	3.0 U	3.0 U	200	0.00	0.00	0.00
cis-1,2-Dichloroethene	190,000[6]	3.1	3.3	3.3	63	0.00	0.00	0.00
2-Butanone	13,000	6.9 U	7.6 U	7.7 U	5,000	0.00	0.00	0.00
Acetone	180,000	2.5	2.9	2.2	30,000	0.00	0.00	0.00
Carbon tetrachloride	1,900	4.3 U	4.8 U	4.8 U	0.17	0.00	0.00	0.00
Chlorodifluoromethane (Freon 22)	NS	5.3	5.3	4.9	50,000	0.00	0.00	0.00
Chloromethane	22,000	2.4	2.8	2.8	90	0.00	0.00	0.00
Dichlorodifluoromethane (Freon 12)	NS	7.9	7.9	6.6	12,000	0.00	0.00	0.00
Tetrachloroethene	300	4.7 U	5.2 U	5.2 U	4.0	0.00	0.00	0.00
Toluene	37,000	7.1	7.1	2.9 U	5,000	0.00	0.00	0.00
Trichloroethene	14,000	3.7 U	4.1 U	4.1 U	0.2	0.00	0.00	0.00
Trichlorotrifluoroethane (Freon 113)	960,000	5.3 U	5.9 U	5.9 U	180,000	0.00	0.00	0.00
Vinyl chloride	180,000	1.8 U	2.0 U	2.0 U	0.068	0.00	0.00	0.00

See notes on next page.

Table 14 — Regulatory Status of Air Emissions through June 2015, OU1 Soil Vapor Extraction System
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Notes:

1. Only volatile organic compounds listed in the PADM (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride, or detected in effluent vapor samples collected from the OU1 GWTS and SVE System over the most recent 12-month monitoring period, are included in this table.
2. Refers to the compound-specific SGC per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
3. To assess system air discharge compliance status, the instantaneous concentration of each compound at stack effluent, calculated by multiplying the laboratory concentration by the ratio between the air flow in scfm and acfm, is compared to the SGC. The highest concentration detected during the reporting period and the average air flow rate during the reporting period were used in calculations. Values shown have been rounded to two significant figures to account for error in field measurements and analytical results.
4. AGC refers to the compound-specific AGC per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
5. Percent AGC for a given compound was calculated by following procedures described in the NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991). Values shown represent a summation of the calculated %AGC results for the most recent 12-month monitoring period. Detailed calculations are included in Appendix D. Values shown have been rounded to the nearest one hundredth of 1 percent.
6. An SGC was not provided in the DAR-1 AGC/SGC tables, revised February 28, 2014. An interim SGC was developed based on guidelines provided in Section IV.A.2.b.1 of the New York State DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants, 1991 edition. Specifically for cis-1,2-dichloroethene, which is not defined as a high-toxicity constituent, the interim SGC = (smaller of TWA -Threshold Limit Value or TWA - Recommended Exposure Limit)/4.2 or (793,000 µg/m^3)/4.2 = 190,000 µg/m^3.

acfm	actual cubic feet per minute
AGC	Annual Guideline Concentration
BOLD	Detected concentrations are bolded.
DAR-1	Division of Air Resources Guide-1
GWTS	groundwater treatment system
NS	SGC/AGC concentrations not specified in the NYSDEC DAR-1 AGC/SGC tables, revised October 18, 2010.
NYSDEC	New York State Department of Environmental Conservation
OU1	Operable Unit 1
PADM	Performance Analysis and Design Modification Plan
scfm	standard cubic feet per minute
SGC	Short-term Guideline Concentration.
SVE	soil vapor extraction system
TWA	time-weighted average
U	The compound was analyzed for but not detected. The associated value is the compound reporting limit.
µg/m^3	micrograms per cubic meter
%	percentage

Table 15 — Regulatory Status of Air Emissions through June 2015,
OU1 Groundwater Treatment System and Cumulative Treatment Systems
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York

Compound[1]	Short-Term Concentrations		Annual Concentrations		
	SGC[2]	Actual Stack Concentration[3]	AGC[4]	Percent AGC (%)[5]	
		GWTS through June 2015		GWTS through June 2015	Cumulative GWTS and SVE through June 2015[6]
	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	(% AGC)	(% AGC)
1,1-Dichloroethene	NS	3.1 U	200	0.00	0.00
cis-1,2-Dichloroethene	190,000[7]	3.1 U	63	0.00	0.00
2-Butanone	13,000	6.9	5,000	0.00	0.00
Acetone	180,000	94.8	30,000	0.00	0.00
Carbon disulfide	6,200	2.5 U	700	0.00	0.00
Chlorodifluoromethane (Freon 22)	NS	27.1	50,000	0.00	0.00
Chloromethane	22,000	1.6 U	90	0.00	0.00
Dichlorodifluoromethane (Freon 12)	NS	3.9 U	12,000	0.00	0.00
Tetrachloroethene	300	5.4 U	4.0	0.00	0.00
Toluene	37,000	3.0 U	5,000	0.00	0.00
Trichloroethene	14,000	4.3 U	0.2	0.00	0.00
Trichlorotrifluoroethane (Freon 113)	960,000	6.1 U	180,000	0.00	0.00
Vinyl chloride	180,000	2.0 U	0.068	**3.35**	**3.35**

See notes on next page.

Table 15 — Regulatory Status of Air Emissions through June 2015, OU1 Groundwater Treatment System and Cumulative Treatment Systems Lockheed Martin Corporation; Former Unisys Facility Great Neck Lake Success, New York

Notes:

1. Only volatile organic compounds listed in the PADM Plan (ARCADIS G&M, Inc. 2001a), toluene, Freon 22, and carbon tetrachloride, or detected in effluent vapor samples collected from the OU1 GWTS and SVE System over the most recent 12-month monitoring period, are included in this table.
2. Refers to the compound-specific SGC per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
3. To assess system air discharge compliance status, the instantaneous concentration of each compound at stack effluent, calculated by multiplying the laboratory concentration by the ratio between the air flow in scfm and acfm, is compared to the SGC. The highest concentration detected in an effluent or duplicate effluent sample during the reporting period and the average air flow rate during the reporting period were used in calculations. Values shown have been rounded to two significant figures to account for error in analytical results and field measurements.
4. AGC refers to the compound-specific AGC per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
5. Percent AGC for a given compound was calculated by following procedures described in the NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991). Values shown represent a summation of the calculated %AGC results for the most recent 12-month monitoring period. Detailed calculations are included in Appendix C. Values shown have been rounded to the nearest one hundredth of 1 percent.
6. Cumulative OU1 GWTS and OU1 SVE System %AGC is the sum of %AGC calculated to assess discharge from both systems for the most recent 12-month monitoring period.
7. An SGC was not provided in the DAR-1 AGC/SGC tables, revised February 28, 2014. An interim SGC was developed based on guidelines provided in Section IV.A.2.b.1 of the New York State DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants, 1991 edition. Specifically for cis-1,2 dichloroethene, which is not defined as a high-toxicity constituent, the interim SGC = (smaller of TWA -Threshold Limit Value or TWA - Recommended Exposure Limit)/4.2 or 793,000 $\mu g/m^3$/4.2 = 190,000 $\mu g/m^3$.

acfm	actual cubic feet per minute
AGC	Annual Guideline Concentration
BOLD	Detected concentrations are bolded.
DAR-1	Division of Air Resources Guide-1
GWTS	groundwater treatment system
NS	SGC/AGC concentrations not specified in the NYSDEC DAR-1 AGC/SGC tables, revised October 18, 2010.
NYSDEC	New York State Department of Environmental Conservation
OU1	Operable Unit 1
PADM	Performance Analysis and Design Modification Plan
scfm	standard cubic feet per minute
SGC	Short-term Guideline Concentration
SVE	soil vapor extraction system
TWA	time-weighted average
U	The compound was analyzed for but not detected. The associated value is the compound reporting limit.
$\mu g/m^3$	micrograms per cubic meter
%	percentage

FIGURES

Prepared/Date: BRP 03/26/14
Checked/Date: LMB 04/20/14

Lockheed Martin Corporation Former Unisys Facility-Great Neck Lake Success, New York	AMEC E&E PC	Site Location Map Project 3650140001.02.209 Figure 1

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NORTHERN STATE PARKWAY

STORMWATER BASIN
S980

ASTORIA FEDERAL SAVINGS
946
5.08A (C)

MARCUS PARTNERS
948
5.63A (C)

WERE DEVELOPING CORP.
923
5.03A (C)

WERE DEVELOPING CORP.
926
5.13A (C)

WERE DEVELOPING CORP.
949
6.70A (C)

STORMWATER BASIN
N021

COUNTY OF NASSAU
952
4.54A (S)

MARCUS AVENUE

EW-1

RW-1RS

RW-1RD

DW-12

DW-14

DW-11

DW-10
(ABANDONED IN PLACE)

DW-13

DW-9
(ABANDONED IN PLACE)

LAKEVILLE ROAD

4 STORY
MASONRY BUILDING

1 & 2 STORY
MASONRY BUILDING

2 STORY MASONRY
BUILDING

INCORPORATED VILLAGE
OF LAKE SUCCESS

TOWN OF
NORTH HEMPSTEAD

OU1 GROUNDWATER
TREATMENT BUILDING

RETENTION
BASIN

RETENTION
BASIN

RETENTION
BASIN

2½ STORY MASONRY
BUILDING

LEGEND:

- INFLUENT PIPE LINE
- EFFLUENT PIPELINE
- RECOVERY WELL
- DIFFUSION WELL

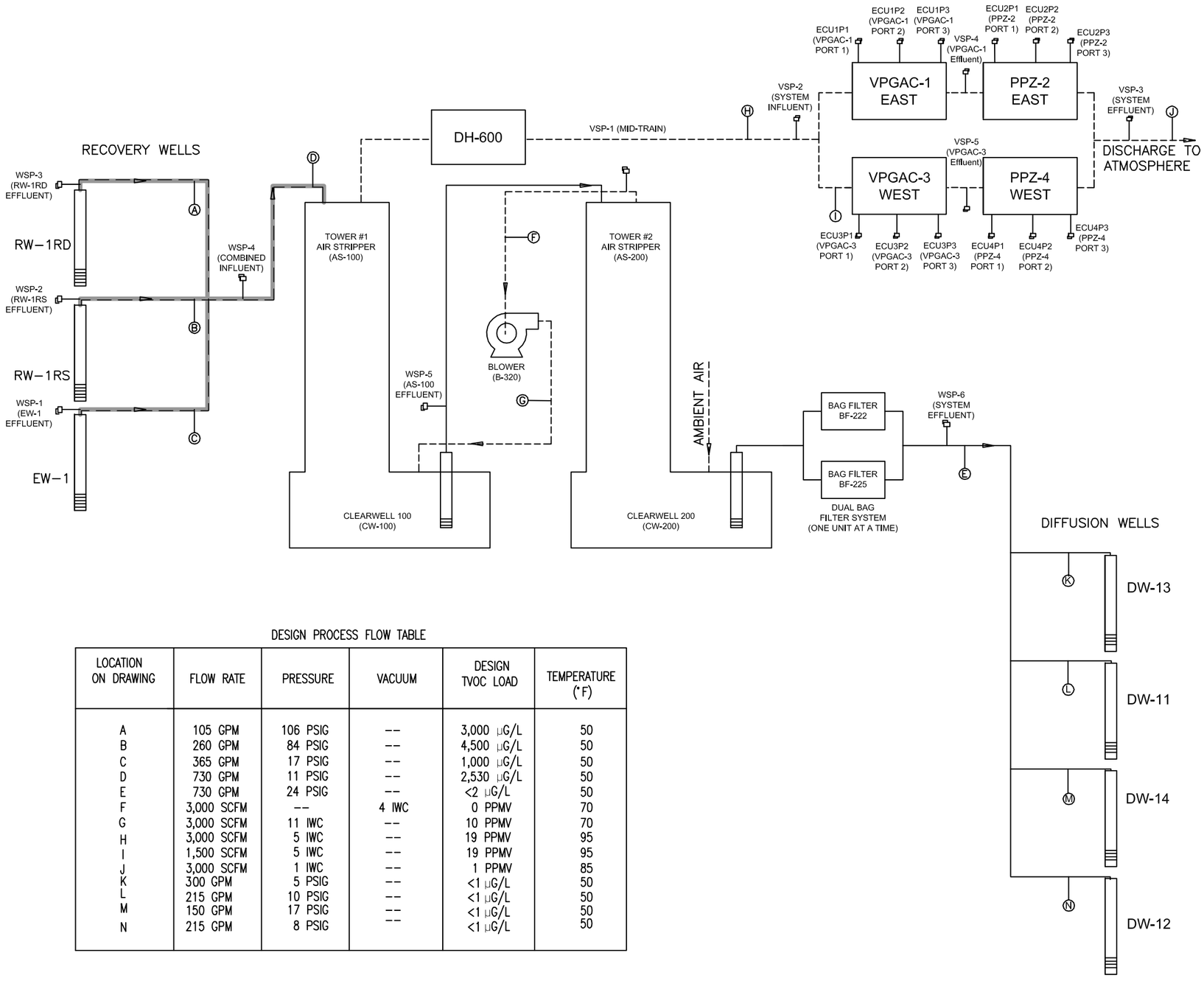
SOURCE:
- ARCADIS G&M INC.
- PROJECT NO. NY001227.1904
- DRAWING NO. 2
- 12/05/02

Prepared/Date: RJR 05/11/15
Checked/Date: LMB 05/11/15

0 150 300 600
SCALE IN FEET

Lockheed Martin Corporation Former Unisys Facility-Great Neck Lake Success, New York	AMEC E&E PC	Site Plan OU1 Groundwater Treatment System Project 3650-14-0001 Figure 2

Z:\Projects\Lockheed_Martin_Corp\Great Neck\Figures\Quartly-OMM-Reports\Figure2-OU1-Site Plan.dwg Mon, 11 May 2015 - 2:12pm roger.riquier



LEGEND:

- SAMPLING LOCATION
- WATER STREAM
- AIR STREAM
- PROCESS LINE (DOUBLE WALL WITH LEAK DETECTION)

VPGAC - VAPOR PHASE GRANULAR ACTIVATED CARBON

PPZ - POTASSIUM PERMANGANATE-IMPREGNATED ZEOLITE

TVOC - TOTAL VOLATILE ORGANIC COMPOUNDS

GPM - GALLONS PER MINUTE

SCFM - STANDARD CUBIC FEET PER MINUTE

PSIG - POUNDS PER SQUARE INCH GAUGE

IWC - INCHES OF WATER COLUMN

MG/L - MICROGRAMS PER LITER

PPMV - PARTS PER MILLION BY VOLUME

°F - DEGREES FAHRENHEIT

WSP - WATER SAMPLE PORT

VSP - VAPOR SAMPLE PORT

OU-1 - OPERABLE UNIT 1

SOURCE:
- ARCADIS G&M INC.
- PROJECT NO. NY001227.1904
- DRAWING NO. 3
- 12/05/02

DESIGN PROCESS FLOW TABLE

LOCATION ON DRAWING	FLOW RATE	PRESSURE	VACUUM	DESIGN TVOC LOAD	TEMPERATURE (°F)
A	105 GPM	106 PSIG	--	3,000 µG/L	50
B	260 GPM	84 PSIG	--	4,500 µG/L	50
C	365 GPM	17 PSIG	--	1,000 µG/L	50
D	730 GPM	11 PSIG	--	2,530 µG/L	50
E	730 GPM	24 PSIG	--	<2 µG/L	50
F	3,000 SCFM	--	4 IWC	0 PPMV	70
G	3,000 SCFM	11 IWC	--	10 PPMV	70
H	3,000 SCFM	5 IWC	--	19 PPMV	95
I	1,500 SCFM	5 IWC	--	19 PPMV	95
J	3,000 SCFM	1 IWC	--	1 PPMV	85
K	300 GPM	5 PSIG	--	<1 µG/L	50
L	215 GPM	10 PSIG	--	<1 µG/L	50
M	150 GPM	17 PSIG	--	<1 µG/L	50
N	215 GPM	8 PSIG	--	<1 µG/L	50

Prepared/Date: WJW 08/27/15
Checked/Date: LMB 08/27/15

Lockheed Martin Corporation Former Unisys Facility-Great Neck Lake Success, New York	AMEC E&E PC	Groundwater Treatment System Schematic Figure 3

Z:\Projects\Lockheed_Martin_Corp\Great Neck\Figures\Quartly-OMM-Reports\Figure 3.dwg Thu, 27 Aug 2015 - 12:42pm roger.riquier

LEGEND:

—V—V—V—	VAPOR LINE
—PAV—PAV—PAV—	BUNDLED AIR, PERCHED WATER AND VAPOR LINE
—KP—KP—KP—	WATER LINE
—x—x—x—x—	FENCE
△	VAPOR MONITORING WELL
⊕	VAPOR RECOVERY WELL
⊕	VAPOR RECOVERY/ PIMPING WELL
SVE	SOIL VAPOR EXTRACTION
OU–1	OPERABLE UNIT 1

FORMER UNISYS FACILITY

VW-9
VW-8
VP-3D
VP-3
VW-7
VW-4
TT-1
TT-3
VMW-5
VW-1
SVERSB-1
VP-108D
VP-108
VW-5
VMW-1
TT-2
TT-6
VW-17
VW-15
VMW-3
TT-5
VW-13
VW-19
VW-14
VMW-6
VMW-2
VW-18
VMW-4
VW-3
TT-8
VP-12
VW-10
VW-6
OU–1 SVE AREA
OU–1 GROUNDWATER TREATMENT BUILDING
OU–1 SVE TREATMENT SHED
OU–1 TREATMENT AREA
MARCUS AVENUE

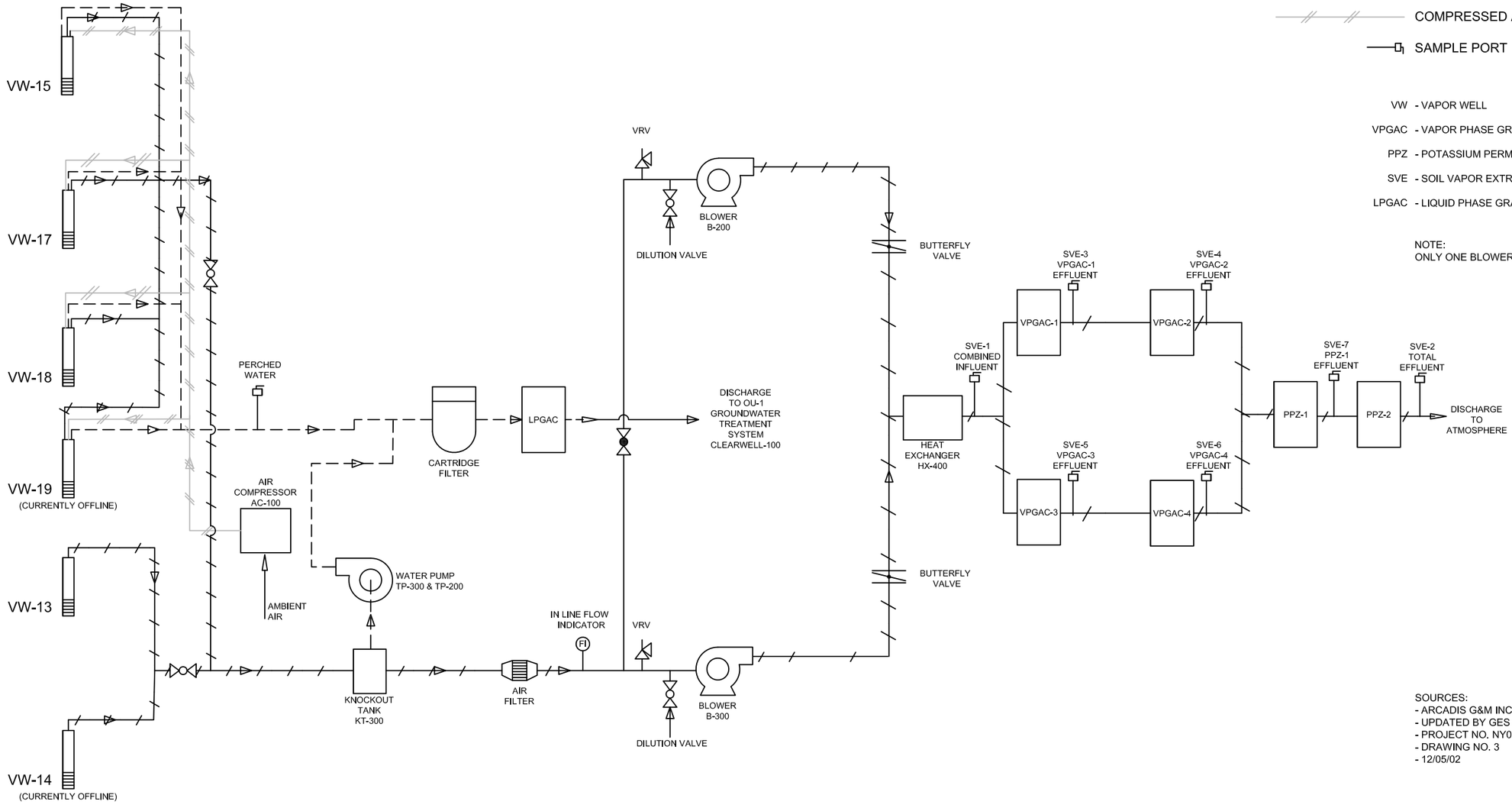
NO.	DATE	REVISIONS	BY	CHK

DRAWN:	PROJECT NO: 3650-14-0001
ENGINEER:	SCALE: NTS
CHECKED:	APPROVED:
DATE:	DATE:

amec E & E PC
453 Route 146
Clifton Park, New York 12065, (518) 372 - 0905

LOCKHEED MARTIN CORPORATION,
OU1 SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY, LAKE SUCCESS, NEW YORK

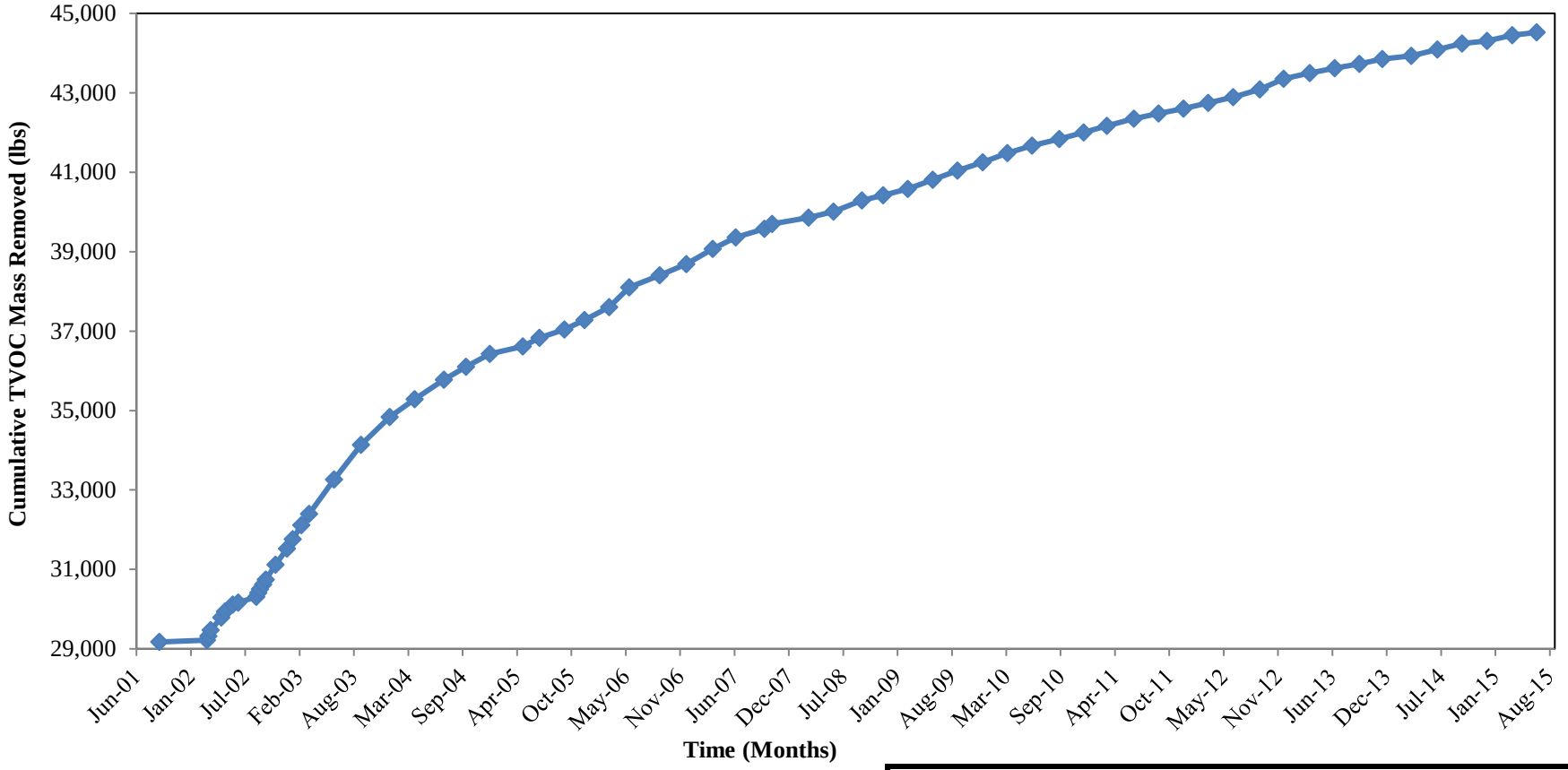
SITE PLAN OU1
SOIL VAPOR EXTRACTION SYSTEM
Project 3650140001.02.209
FIGURE 4



SOURCES:
- ARCADIS G&M INC
- UPDATED BY GES ON APRIL 4, 2014
- PROJECT NO. NY001227.1904
- DRAWING NO. 3
- 12/05/02

Prepared/Date: RJR 02/12/15
Checked/Date: LMB 02/12/15

Lockheed Martin Corporation Former Unisys Facility-Great Neck Lake Success, New York	AMEC E&E PC	System Schematic OU1 Soil Vapor Extraction System Project 3650140001.02.209 Figure 5



REMEDIAL SYSTEM OPERATION, MAINTENANCE, AND MONITORING REPORT
OU1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY
LAKE SUCCESS, NEW YORK

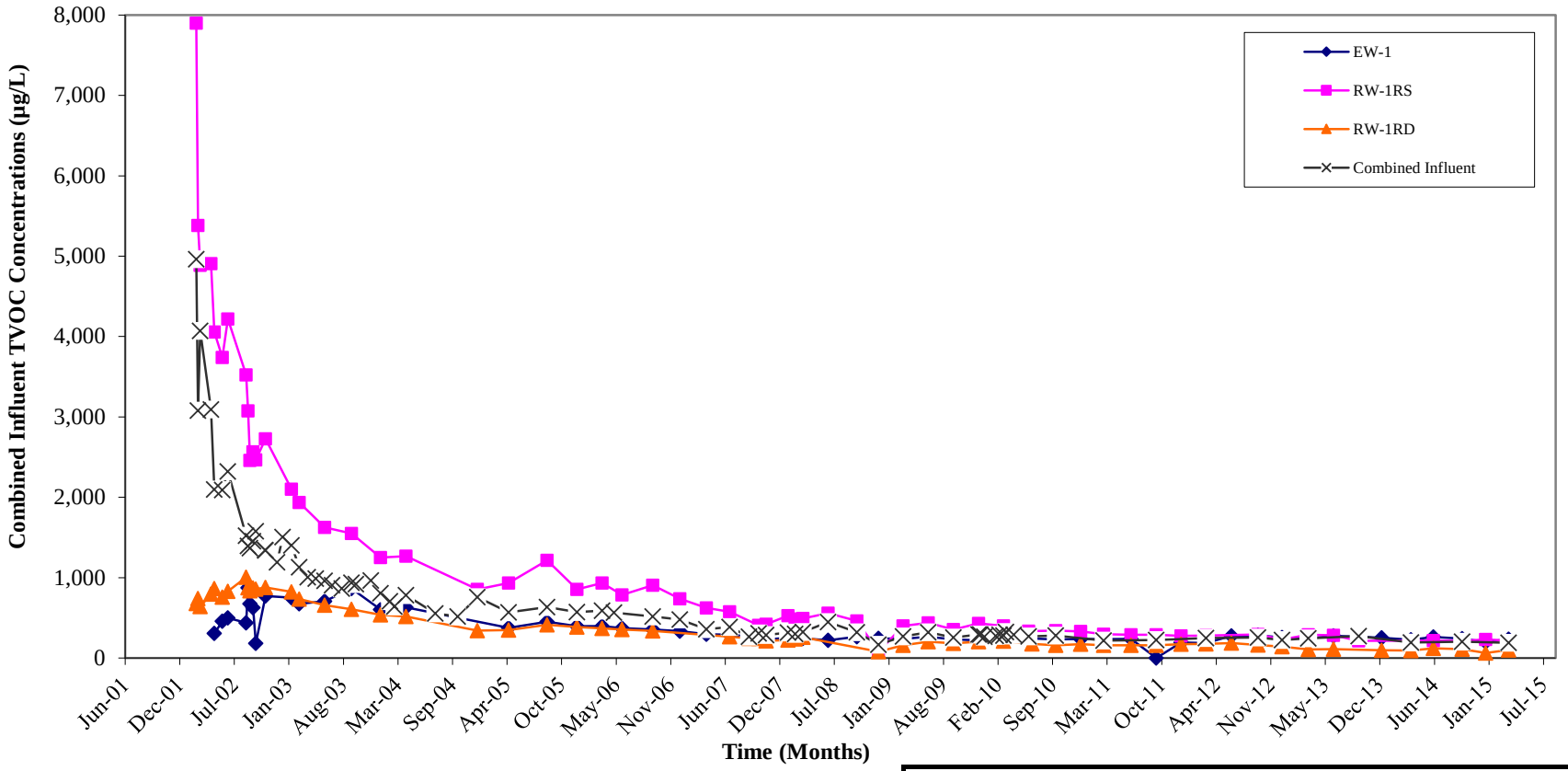
GROUNDWATER TREATMENT SYSTEM CUMULATIVE TVOC MASS REMOVED THROUGH JUNE 2015

FIGURE 6

Notes:

TVOC = total volatile organic compound
lbs = pounds

amec



REMEDIAL SYSTEM OPERATION, MAINTENANCE, AND MONITORING REPORT
OU1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY
LAKE SUCCESS, NEW YORK

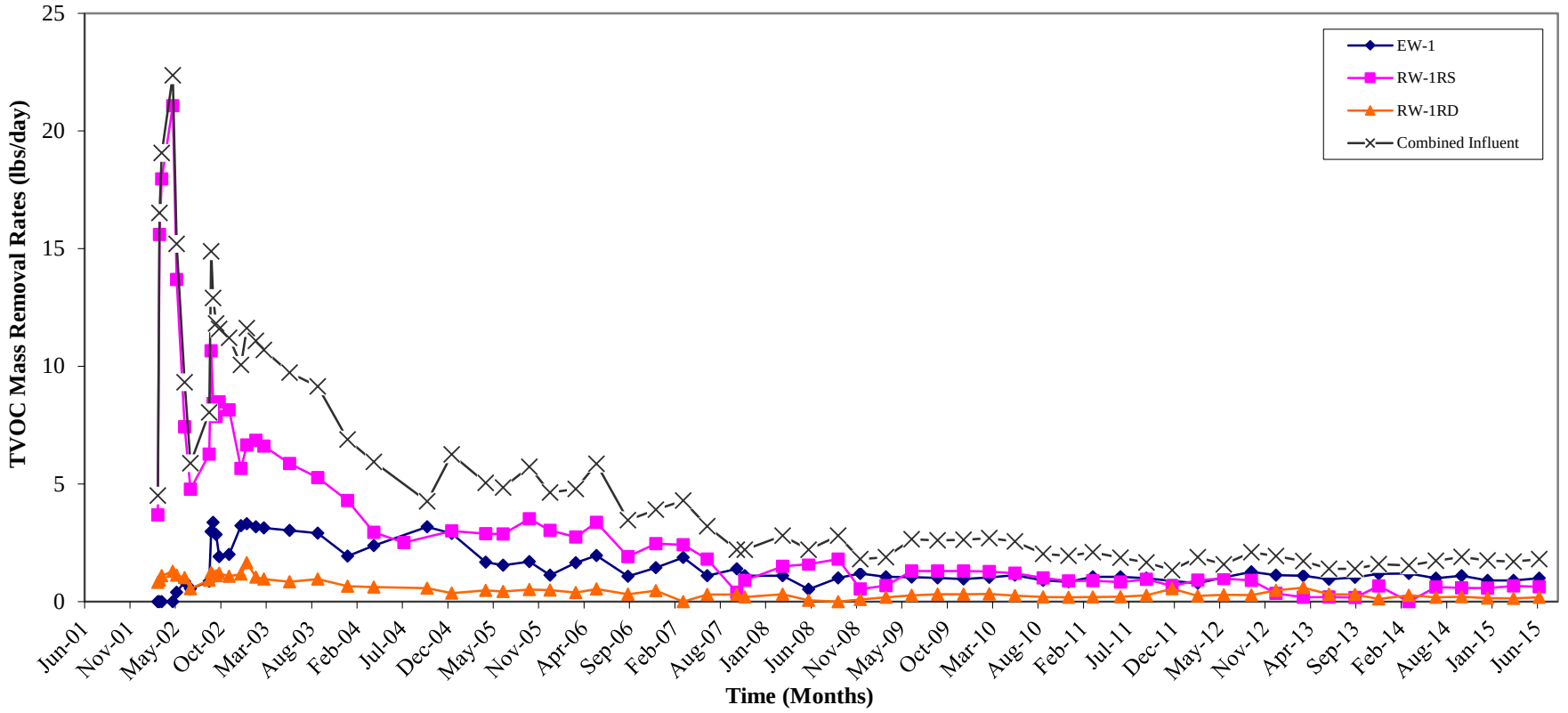
GROUNDWATER TREATMENT SYSTEM INFLUENT TVOC CONCENTRATIONS THROUGH JUNE 2015

FIGURE 7

Notes:

TVOC = total volatile organic compound
µg/L = micrograms per liter

amec



REMEDIAL SYSTEM OPERATION, MAINTENANCE, AND MONITORING REPORT
OU1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY
LAKE SUCCESS, NEW YORK

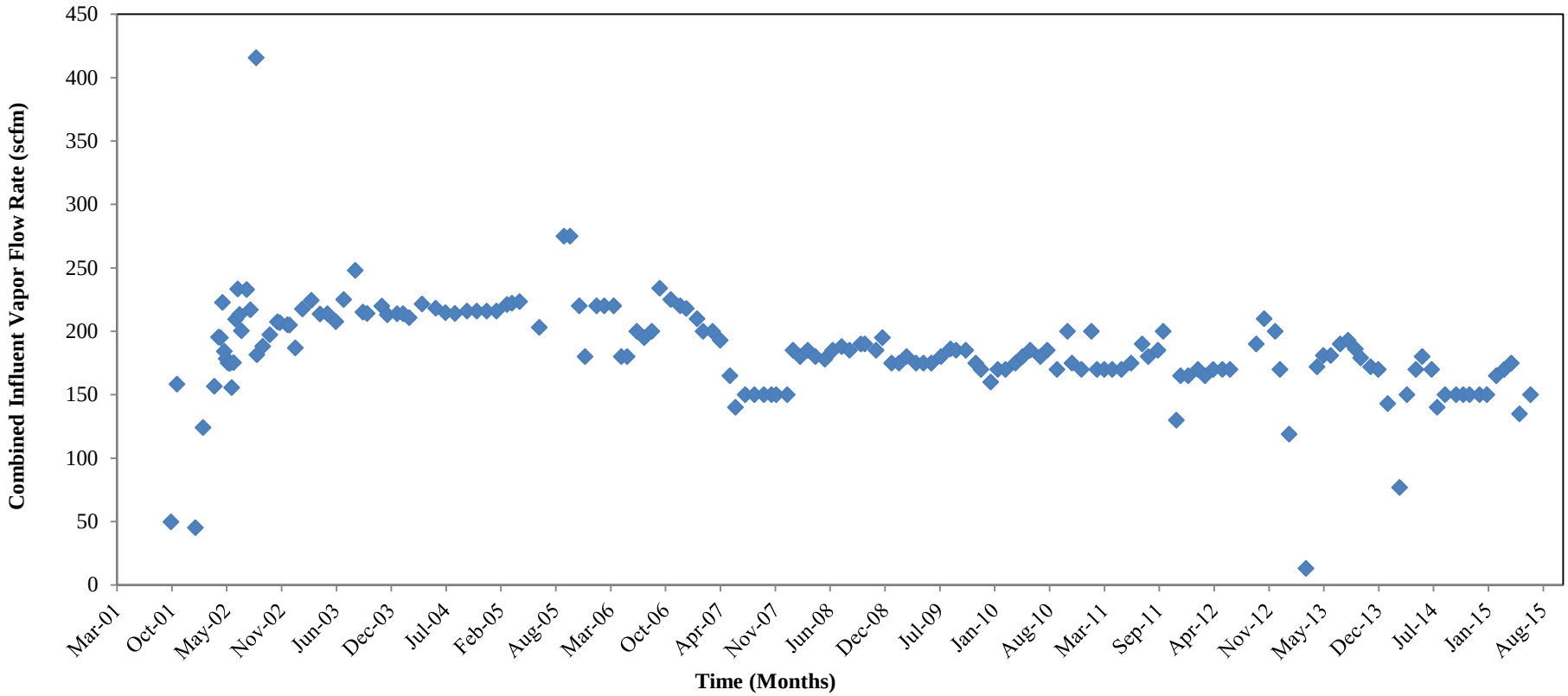
GROUNDWATER TREATMENT SYSTEM TVOC MASS REMOVAL RATES THROUGH JUNE 2015

FIGURE 8

Notes:

TVOC = total volatile organic compound
lbs/day = pounds per day

amec



REMEDIAL SYSTEM OPERATION, MAINTENANCE, AND MONITORING REPORT
OU1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY
LAKE SUCCESS, NEW YORK

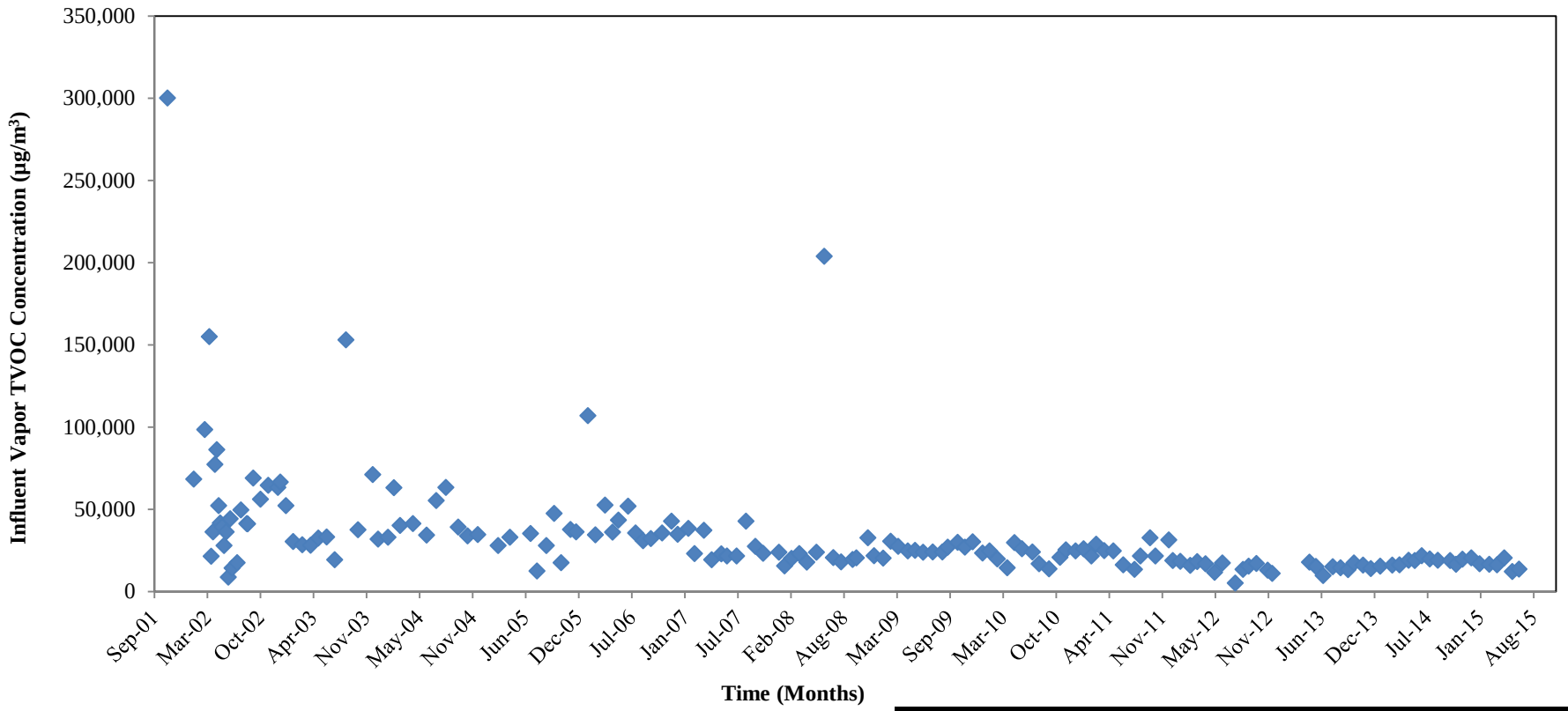
SOIL VAPOR EXTRACTION SYSTEM COMBINED INFLUENT VAPOR FLOW RATE THROUGH JUNE 2015

Note:

scfm = standard cubic feet per minute

amec

FIGURE
9



REMEDIAL SYSTEM OPERATION, MAINTENANCE, AND MONITORING REPORT
OU1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY
LAKE SUCCESS, NEW YORK

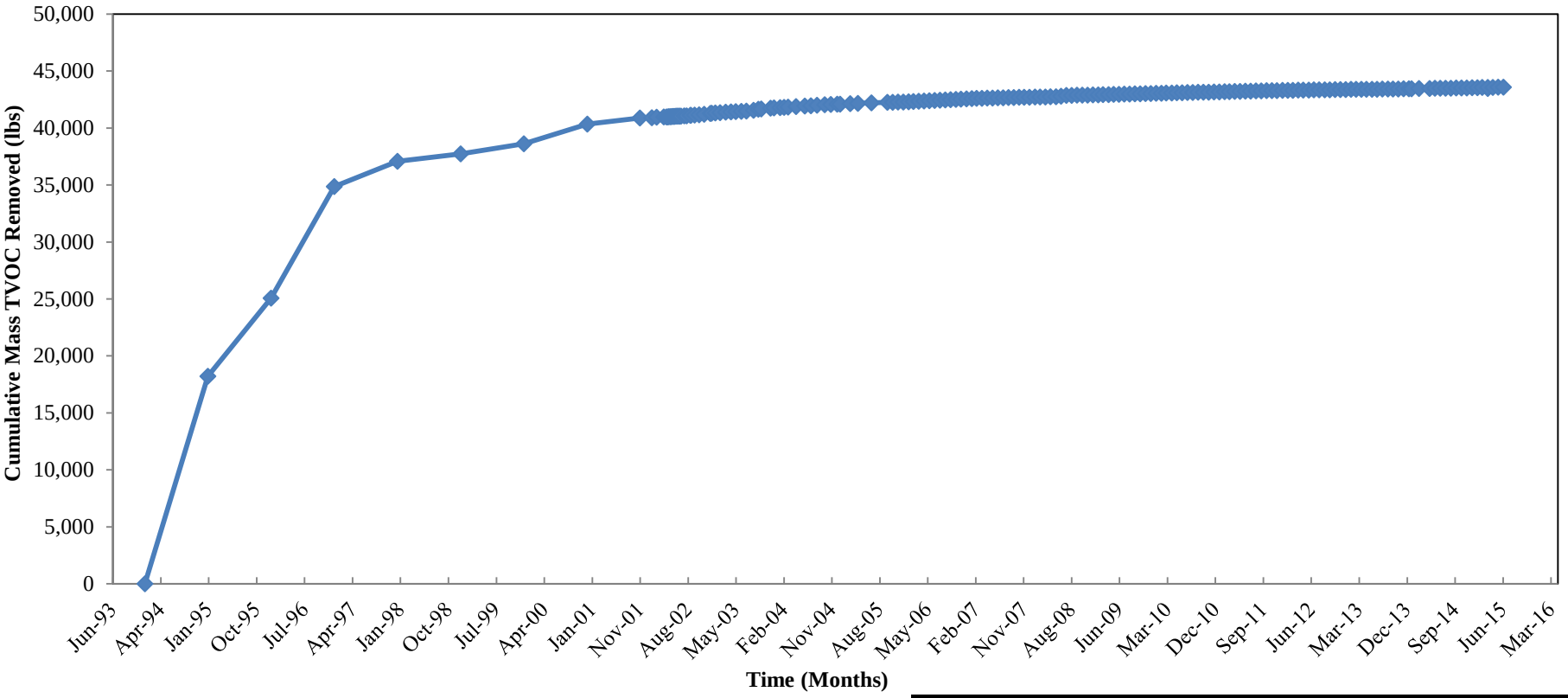
SOIL VAPOR EXTRACTION SYSTEM INFLUENT VAPOR TVOC CONCENTRATION THROUGH JUNE 2015

FIGURE 10

Notes:

µg/m^3 = micrograms per cubic meter
TVOC = total volatile organic compounds

amec



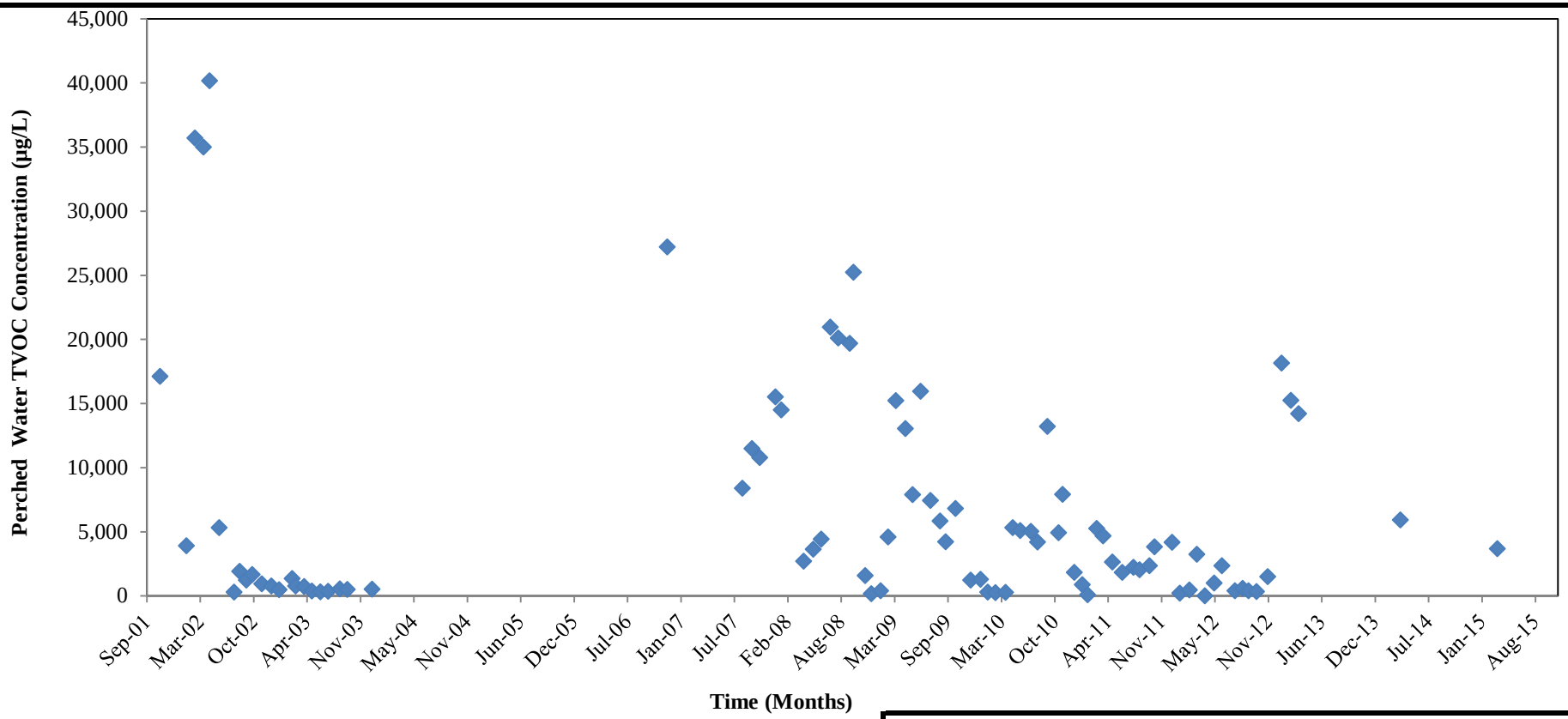
Notes:

TVOC = total volatile organic compound
lbs = pounds

REMEDIAL SYSTEM OPERATION, MAINTENANCE, AND MONITORING REPORT
OU1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY
LAKE SUCCESS, NEW YORK

SOIL VAPOR EXTRACTION SYSTEM CUMULATIVE MASS TVOC REMOVED THROUGH JUNE 2015

FIGURE 11



REMEDIAL SYSTEM OPERATION, MAINTENANCE, AND MONITORING REPORT
OU1 (ON-SITE) GROUNDWATER TREATMENT SYSTEM AND SOIL VAPOR EXTRACTION SYSTEM
FORMER UNISYS FACILITY
LAKE SUCCESS, NEW YORK

SOIL VAPOR EXTRACTION SYSTEM PERCHED WATER TVOC CONCENTRATION THROUGH JUNE 2015

FIGURE 12

Notes:

TVOC = total volatile organic compound
µg/L = micrograms per liter

amec

LEGEND:

- iPark OFFICE BUILDING
- PAV — COMPRESSED AIR LINE
- V — VAPOR EXTRACTION LINE
- ▲ VAPOR MONITORING WELL
- ⊞ VAPOR RECOVERY WELL
- ■ VAPOR RECOVERY/PUMPING WELL
- NA NOT APPLICABLE
- NM NOT MEASURED
- SVE SOIL VAPOR EXTRACTION

SCREENED INTERVAL (FEET BELOW LAND SURFACE)

DESIGNATION

VW-8			
Screened Interval	66-86	66-86	66-86
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.16	-0.39	-0.81

PRESSURE MEASUREMENT (NEGATIVE PRESSURE REPRESENTS VACUUM) (INCHES OF WATER COLUMN)

VW-15			
Screened Interval	32-37	32-37	32-37
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-46	-25	-28

TT-6			
Screened Interval	29	29	29
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0.37	-0.01	-0.04
Screened Interval	38	38	38
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0.17	-0.3	-0.21
Screened Interval	60	60	60
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0.43	-0.32	-0.07
Screened Interval	70	70	70
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	1.16	-0.15	-2.9

VMW-5			
Screened Interval	28-33	28-33	28-33
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.2

VW-17			
Screened Interval	31-36	31-36	31-36
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-48	-25	-30

VW-9 (See Note 2)			
Screened Interval	70-90	70-90	70-90
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	NM

VP-3D			
Screened Interval	39.5-40	39.5-40	39.5-40
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.24
Screened Interval	50.5-51	50.5-51	50.5-51
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.66
Screened Interval	60.5-61	60.5-61	60.5-61
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.69
Screened Interval	72.5-73	72.5-73	72.5-73
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.68

VW-1			
Screened Interval	22-37	22-37	22-37
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.15	-0.18	-0.25
Screened Interval	45-64	45-64	45-64
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-1.12	-0.83	-1.34
Screened Interval	66-85	66-85	66-85
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-1.1	-0.91	-1.32

VW-8			
Screened Interval	66-86	66-86	66-86
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.16	-0.39	-0.81

TT-5			
Screened Interval	37	37	37
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.36	0.03	-0.16
Screened Interval	62	62	62
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.16	0.09	-2.33
Screened Interval	73	73	73
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0.1	0.16	-0.11

VW-19			
Screened Interval	29-34	29-34	29-34
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0	0	0

VW-18			
Screened Interval	31-36	31-36	31-36
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-48	-25	-30

VMW-4			
Screened Interval	28-33	28-33	28-33
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	0.8

VW-14			
Screened Interval	20-40	20-40	20-40
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0.25	0	0

VW-13			
Screened Interval	45-85	45-85	45-85
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-32	-18	-22

TT-6			
Screened Interval	60	60	60
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0.43	-0.32	-0.07
Screened Interval	70	70	70
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	1.16	-0.15	-2.9

SEE DETAIL "A" FOR INDUCED VACUUM MEASUREMENTS 20 TO 50 FEET BELOW LAND SURFACE

VP-3			
Screened Interval	29.5-30	29.5-30	29.5-30
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	4.44

VW-4			
Screened Interval	60-90	60-90	60-90
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.48	-0.54	-0.88

TT-3			
Screened Interval	52	52	52
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.02	-0.1	-0.1
Screened Interval	62	62	62
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	0.05	-0.02	-0.06
Screened Interval	72	72	72
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.01	-0.3	0.06

VW-5			
Screened Interval	73-93	73-93	73-93
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.67	-0.59	-1.04

VMW-1			
Screened Interval	28-33	28-33	28-33
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.01

TT-8			
Screened Interval	42	42	42
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.08	-0.06	-0.31
Screened Interval	62	62	62
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.02	-0.08	0.01

VP-108D			
Screened Interval	29-29.5	29-29.5	29-29.5
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-2.94
Screened Interval	50-50.5	50-50.5	50-50.5
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-1.81
Screened Interval	59-59.5	59-59.5	59-59.5
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-1.65
Screened Interval	69.5-70	69.5-70	69.5-70
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-1.51

VW-6			
Screened Interval	70-90	70-90	70-90
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.42	-0.45	-0.6

VMW-3			
Screened Interval	28-33	28-33	28-33
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.18
Screened Interval	65-70	65-70	65-70
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.36

TT-8			
Screened Interval	62	62	62
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	-0.02	-0.08	0.01

VMW-2			
Screened Interval	28-33	28-33	28-33
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.1

VMW-6			
Screened Interval	28-33	28-33	28-33
Pressure Measurement Date	4/6/2015	5/18/2015	6/10/2015
Induced Vacuum Measurement	NM	NM	-0.07

ESTIMATED EXTENT OF SOIL IMPACTS (BASED ON INFORMATION PRESENTED IN NOVEMBER 2000 SVE MONTHLY REPORT BY ARCADIS GERAGHTY & MILLER, INC.)

NOTES:

1. VAPOR WELL LOCATIONS APPROXIMATED FROM FIELD MEASUREMENTS.
2. INDUCED VACUUM READING WAS NOT COLLECTED DUE TO VAPOR EXTRACTION WELL INACCESSIBILITY.

0 20' 40'

SCALE IN FEET

0 80' 160'

SCALE IN FEET

Prepared/Date: DAB 08/11/15
Checked/Date: LMB 08/11/15

Lockheed Martin Corporation Former Unisys Facility-Great Neck Lake Success, New York	AMEC E&E PC	Induced Vacuum Readings OU-1 Soil Vapor Extraction System Project 3650140001 Figure 13

Z:\Projects\Lockheed_Martin_Corp\Great Neck\Figures\Quartly-OMM-Reports\SVE-Figure1.3-2015-02.dwg Tue, 11 Aug 2015 - 1:10pm david.blanchard

APPENDIX A — WATER AND VAPOR SAMPLE ANALYTICAL RESULTS (OU1 GROUNDWATER TREATMENT SYSTEM)

Appendix A-1 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
April 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	WSP-6
Location ID:	System Effluent
Date Collected:	04/16/15
Units:	µg/L
Compounds	
1,1,1-Trichloroethane	1.0 U [1.0 U]
1,1,2,2-Tetrachloroethane	1.0 U [1.0 U]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1.0 U [1.0 U]
1,1,2-Trichloroethane	1.0 U [1.0 U]
1,1-Dichloroethane	1.0 U [1.0 U]
1,1-Dichloroethene	1.0 U [1.0 U]
1,1-Difluoroethane (Freon 152a)	1.0 U [1.0 U]
1,2,4-Trichlorobenzene	1.0 U [1.0 U]
1,2-Dibromo-3-chloropropane	1.0 U [1.0 U]
1,2-Dibromoethane	1.0 U [1.0 U]
1,2-Dichlorobenzene	1.0 U [1.0 U]
1,2-Dichloroethane	1.0 U [1.0 U]
1,2-Dichloroethene (cis)	1.0 U [1.0 U]
1,2-Dichloroethene (trans)	1.0 U [1.0 U]
1,2-Dichloropropane	1.0 U [1.0 U]
1,3-Dichlorobenzene	1.0 U [1.0 U]
1,3-Dichloropropene (cis)	1.0 U [1.0 U]
1,3-Dichloropropene (trans)	1.0 U [1.0 U]
1,4-Dichlorobenzene	1.0 U [1.0 U]
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	1.0 U [1.0 U]
2-Butanone (Methyl ethyl ketone)	1.0 U [1.0 U]
4-Methyl-2-pentanone (MIBK)	1.0 U [1.0 U]
Acetone (2-propanone)	1.0 U [1.0 U]
Benzene	1.0 U [1.0 U]
Bromodichloromethane	1.0 U [1.0 U]
Bromoform	1.0 U [1.0 U]
Bromomethane (Methyl bromide)	1.0 U [1.0 U]
Carbon disulfide	1.0 U [1.0 U]
Carbon tetrachloride	1.0 U [1.0 U]
Chlorobenzene	1.0 U [1.0 U]
Chlorodifluoromethane (Freon 22)	1.0 U [1.0 U]
Chloroethane	1.0 U [1.0 U]
Chloroform	1.0 U [1.0 U]
Chloromethane (Methyl chloride)	1.0 U [1.0 U]
Chloropentafluoroethane (Freon 115)	1.0 U [1.0 U]
Cyclohexane	1.0 U [1.0 U]
Dibromochloromethane	1.0 U [1.0 U]

See notes on next page.

Appendix A-1 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
April 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Sample ID:	WSP-6
Location ID:	System Effluent
Date Collected:	04/16/15
Units:	µg/L
Compounds	
Dichlorodifluoromethane (Freon 12)	1.0 U [1.0 U]
Ethylbenzene	1.0 U [1.0 U]
Isopropylbenzene (Cumene)	1.0 U [1.0 U]
Methyl acetate	1.0 U [1.0 U]
Methyl butyl ketone (2-hexanone)	1.0 U [1.0 U]
Methyl cyclohexane	1.0 U [1.0 U]
Methyl tert-butyl ether (MTBE)	1.0 U [1.0 U]
Methylene chloride	1.0 U [1.0 U]
Styrene	1.0 U [1.0 U]
Tetrachloroethene (PCE)	1.0 U [1.0 U]
Toluene	1.0 U [1.0 U]
Trichloroethene (TCE)	1.0 U [1.0 U]
Trichlorofluoromethane (Freon 11)	1.0 U [1.0 U]
Vinyl chloride	1.0 U [1.0 U]
Xylenes (m&p)	1.0 UJ [1.0 UJ]
Xylenes (o)	1.0 U [1.0 U]
Xylenes (total)	1.0 U [1.0 U]
Total VOCs[2]	1.0 U [1.0 U]

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to TestAmerica, Inc. for VOC analyses using USEPA Method OLM04.2 modified, including Freon 22, Freon 115, Freon 123, and Freon 152a.

2. Total VOCs represents the numerical sum of all individual compound concentrations excluding xylene (total). "Total 'VOCs" was rounded to the nearest integer.

J - The associated numerical value is an estimated concentration.

O&M - operation and maintenance

OU-1 - Operable Unit 1

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

USEPA - U. S. Environmental Protection Agency

VOC - volatile organic compound

µg/L - micrograms per liter

[ ] - Analytical data in brackets pertains to a duplicate sample collected at the specified location.

Appendix A-2 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
May 2015 - Not Sampled
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Sample ID:	WSP-6
Location ID:	System Effluent
Date Collected:	not sampled [3]
Units:	µg/L
Compounds	
1,1,1-Trichloroethane	Not sampled
1,1,2,2-Tetrachloroethane	Not sampled
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	Not sampled
1,1,2-Trichloroethane	Not sampled
1,1-Dichloroethane	Not sampled
1,1-Dichloroethene	Not sampled
1,1-Difluoroethane (Freon 152a)	Not sampled
1,2,4-Trichlorobenzene	Not sampled
1,2-Dibromo-3-chloropropane	Not sampled
1,2-Dibromoethane	Not sampled
1,2-Dichlorobenzene	Not sampled
1,2-Dichloroethane	Not sampled
1,2-Dichloroethene (cis)	Not sampled
1,2-Dichloroethene (trans)	Not sampled
1,2-Dichloropropane	Not sampled
1,3-Dichlorobenzene	Not sampled
1,3-Dichloropropene (cis)	Not sampled
1,3-Dichloropropene (trans)	Not sampled
1,4-Dichlorobenzene	Not sampled
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	Not sampled
2-Butanone (Methyl ethyl ketone)	Not sampled
4-Methyl-2-pentanone (MIBK)	Not sampled
Acetone (2-propanone)	Not sampled
Benzene	Not sampled
Bromodichloromethane	Not sampled

Appendix A-2 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
May 2015 - Not Sampled
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Sample ID:	WSP-6
Location ID:	System Effluent
Date Collected:	not sampled [3]
Units:	µg/L
Compounds	
Bromoform	Not sampled
Bromomethane (Methyl bromide)	Not sampled
Carbon disulfide	Not sampled
Carbon tetrachloride	Not sampled
Chlorobenzene	Not sampled
Chlorodifluoromethane (Freon 22)	Not sampled
Chloroethane	Not sampled
Chloroform	Not sampled
Chloromethane (Methyl chloride)	Not sampled
Chloropentafluoroethane (Freon 115)	Not sampled
Cyclohexane	Not sampled
Dibromochloromethane	Not sampled
Dichlorodifluoromethane (Freon 12)	Not sampled
Ethylbenzene	Not sampled
Isopropylbenzene (Cumene)	Not sampled
Methyl acetate	Not sampled
Methyl butyl ketone (2-Hexanone)	Not sampled
Methyl cyclohexane	Not sampled
Methyl tert-butyl ether (MTBE)	Not sampled
Methylene chloride	Not sampled
Styrene	Not sampled
Tetrachloroethene (PCE)	Not sampled
Toluene	Not sampled
Trichloroethene (TCE)	Not sampled
Trichlorofluoromethane (Freon 11)	Not sampled

Appendix A-2 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
May 2015 - Not Sampled
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Sample ID:	WSP-6
Location ID:	System Effluent
Date Collected:	not sampled [3]
Units:	µg/L
Compounds	
Vinyl chloride	Not sampled
Xylenes (total)	Not sampled
Total VOCs[2]	Not sampled

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to TestAmerica, Inc. for VOC analyses using USEPA Method OLM04.2 modified, including Freon 22, Freon 115, Freon 123, and Freon 152a.
2. Total VOCs represents the numerical sum of all individual compound concentrations excluding xylene (total). "Total 'VOCs" was rounded to the nearest integer.
3. System off-line and not sampled in May 2015

BOLD - Detected concentrations are presented in bold font.
J - The associated numerical value is an estimated concentration.
O&M - operation and maintenance
OU-1 - Operable Unit 1
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
USEPA - U. S. Environmental Protection Agency
VOC - volatile organic compound
µg/L - micrograms per liter
[ ] - Analytical data in brackets pertains to a duplicate sample collected at the specified location.

Appendix A-3 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
March 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	WSP-1	WSP-2	WSP-3	WSP-5	WSP-6
Location ID:	OU1-WSP-1 Effluent	OU1-WSP-2 Effluent	OU1-WSP-3 Effluent	OU1-WSP-5 Effluent	System Effluent
Date Collected:	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015
Units:	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds					
1,1,1-Trichloroethane	1.0 U	**1.0 U**	1.0 U	1.0 U	1.0 U [1.0 U]
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	**8.6**	**5.6**	**3.6**	1.0 U	1.0 U [1.0 U]
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,1-Dichloroethene	**0.65 J**	**1.6**	**0.8 J**	1.0 U	1.0 U [1.0 U]
1,1-Difluoroethane (Freon 152a)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,2-Dibromo-3-chloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,2-Dibromoethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,2-Dichlorobenzene	1.0 U	**1.2**	1.0 U	1.0 U	1.0 U [1.0 U]
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,2-Dichloroethene (cis)	**140**	**150**	**38**	**0.58 J**	1.0 U [1.0 U]
1,2-Dichloroethene (trans)	**1.1**	**1.0 U**	1.0 U	1.0 U	1.0 U [1.0 U]
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,3-Dichlorobenzene	1.0 U	**1.0 U**	1.0 U	1.0 U	1.0 U [1.0 U]
1,3-Dichloropropene (cis)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,3-Dichloropropene (trans)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
1,4-Dichlorobenzene	1.0 U	**0.24 J**	1.0 U	1.0 U	1.0 U [1.0 U]
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
2-Butanone (Methyl ethyl ketone)	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ [1.0 UJ]
4-Methyl-2-pentanone (MIBK)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Acetone (2-propanone)	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ [1.0 UJ]
Benzene	1.0 U	**0.27 J**	1.0 U	1.0 U	1.0 U [1.0 U]
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]

Appendix A-3 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
March 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	WSP-1	WSP-2	WSP-3	WSP-5	WSP-6
Location ID:	OU1-WSP-1 Effluent	OU1-WSP-2 Effluent	OU1-WSP-3 Effluent	OU1-WSP-5 Effluent	System Effluent
Date Collected:	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015
Units:	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds					
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Bromomethane (Methyl bromide)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Carbon disulfide	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ [1.0 UJ]
Carbon tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Chlorobenzene	1.0 U	**0.18 J**	1.0 U	1.0 U	1.0 U [1.0 U]
Chlorodifluoromethane (Freon 22)	**2.2**	1.0 U	**2.1**	1.0 U	1.0 U [1.0 U]
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Chloroform	**0.72 J**	1.0 U	**0.19 J**	1.0 U	1.0 U [1.0 U]
Chloromethane (Methyl chloride)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Chloropentafluoroethane (Freon 115)	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ [1.0 UJ]
Cyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Dichlorodifluoromethane (Freon 12)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Ethylbenzene	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ [1.0 UJ]
Isopropylbenzene (Cumene)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Methyl acetate	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Methyl butyl ketone (2-Hexanone)	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ [1.0 UJ]
Methyl cyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Methyl tert-butyl ether (MTBE)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Methylene chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Styrene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Tetrachloroethene (PCE)	**29 J**	**5.2 J**	**22 J**	1.0 UJ	1.0 UJ [1.0 UJ]
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Trichloroethene (TCE)	**32**	**5.4**	**19**	1.0 U	1.0 U [1.0 U]
Trichlorofluoromethane (Freon 11)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]

Appendix A-3 — Water Sample Analytical Results (OU-1 Groundwater Treatment System)
March 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Sample ID:	WSP-1	WSP-2	WSP-3	WSP-5	WSP-6
Location ID:	OU1-WSP-1	OU1-WSP-2	OU1-WSP-3	OU1-WSP-5	System
Date Collected:	Effluent 6/30/2015	Effluent 6/30/2015	Effluent 6/30/2015	Effluent 6/30/2015	Effluent 6/30/2015
Units:	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds					
Vinyl chloride	**4.6**	**50**	1.0 U	1.0 U	1.0 U [1.0 U]
Xylenes (total)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U [1.0 U]
Total VOCs[2]	**219**	**220**	**86**	**1**	1.0 U [1.0 U]

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to TestAmerica, Inc. for VOC analyses using USEPA Method OLM04.2 modified, including Freon 22, Freon 115, Freon 123, and Freon 152a.
2. Total VOCs represents the numerical sum of all individual compound concentrations excluding xylene (total), and TIC. "Total 'VOCs" was rounded to the nearest integer.

BOLD - Detected concentrations are presented in bold font.
J - The associated numerical value is an estimated concentration.
N - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification
O&M - operation and maintenance
OU-1 - Operable Unit 1
TIC - tentatively identified compound
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
USEPA - U. S. Environmental Protection Agency
VOC - volatile organic compound
µg/L - micrograms per liter
[ ] - Analytical data in brackets pertains to a duplicate sample collected at the specified location.
-- = TIC not detected

Appendix A-4 — Vapor Sample Analytical Results (OU-1 Groundwater Treatment System)
March 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	VSP-2	VSP-3
Location ID:	System Influent	System Effluent
Date Collected:	6/30/2015	6/30/2015
Units:	µg/m3	µg/m3
Compounds		
1,1,1-Trichloroethane	4.4 U	4.3 U [4.3 U]
1,1,2,2-Tetrachloroethane	5.5 U	5.4 U [5.4 U]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	6.1 U	6.1 U [6 U]
1,1,2-Trichloroethane	4.4 U	4.3 U [4.3 U]
1,1-Dichloroethane	3.2 U	3.2 U [3.2 U]
1,1-Dichloroethene	3.2 U	3.1 U [3.1 U]
1,1-Difluoroethane (Freon 152a)	2.2 U	2.1 U [2.1 U]
1,2,4-Trichlorobenzene	5.9 U	5.9 U [5.8 U]
1,2-Dibromo-3-chloropropane	7.7 U	7.6 U [7.6 U]
1,2-Dibromoethane	6.1 U	6.1 U [6 U]
1,2-Dichlorobenzene	4.8 U	4.7 U [4.7 U]
1,2-Dichloroethane	3.2 U	3.2 U [3.2 U]
1,2-Dichloroethene (cis)	3.2 U	3.1 U [3.1 U]
1,2-Dichloroethene (total)	3.2 U	3.1 U [3.1 U]
1,2-Dichloroethene (trans)	3.2 U	3.1 U [3.1 U]
1,2-Dichloropropane	3.7 U	3.6 U [3.6 U]
1,3-Dichlorobenzene	4.8 U	4.7 U [4.7 U]
1,3-Dichloropropene (cis)	3.6 U	3.6 U [3.6 U]
1,3-Dichloropropene (trans)	3.6 U	3.6 U [3.6 U]
1,4-Dichlorobenzene	4.8 U	4.7 U [4.7 U]
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	5 U	4.9 U [4.9 U]
2-Butanone (Methyl ethyl ketone)	**2.4**	**2.3 U [3.7]**
4-Methyl-2-pentanone (MIBK)	**8.1**	3.2 U [3.2 U]
Acetone (2-propanone)	**22**	**7.9 UJ [16 J]**
Benzene	2.6 U	2.5 U [2.5 U]
Bromodichloromethane	5.4 U	5.3 U [5.3 U]
Bromoform	8.3 U	8.2 U [8.1 U]
Bromomethane (Methyl bromide)	3.1 U	3.1 U [3 U]
Carbon disulfide	2.5 U	2.5 U [2.4 U]
Carbon tetrachloride	5 U	5 U [4.9 U]
Chlorobenzene	3.7 U	3.6 U [3.6 U]
Chlorodifluoromethane (Freon 22)	2.8 U	2.8 U [2.8 U]
Chloroethane	2.1 U	2.1 U [2.1 U]
Chloroform	3.9 U	3.9 U [3.8 U]
Chloromethane (Methyl chloride)	1.6 U	1.6 U [1.6 U]
Chloropentafluoroethane (Freon 115)	5.1 U	5 U [5 U]
Cyclohexane	2.8 U	2.7 U [2.7 U]
Dibromochloromethane	6.8 U	6.7 U [6.7 U]
Dichlorodifluoromethane (Freon 12)	4 U	3.9 U [3.9 U]
Ethylbenzene	3.5 U	3.4 U [3.4 U]
Isopropylbenzene (Cumene)	3.9 U	3.9 U [3.9 U]
Methyl Acetate	2.4 U	2.4 U [2.4 U]
Methyl Butyl Ketone (2-Hexanone)	3.3 U	3.2 U [3.2 U]

Appendix A-4 — Vapor Sample Analytical Results (OU-1 Groundwater Treatment System)
March 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	VSP-2	VSP-3
Location ID:	System Influent	System Effluent
Date Collected:	6/30/2015	6/30/2015
Units:	µg/m3	µg/m3
Compounds		
Methyl cyclohexane	3.2 U	3.2 U [3.2 U]
Methyl tert-Butyl Ether (MTBE)	2.9 U	2.8 U [2.8 U]
Methylene chloride	2.8 U	2.7 U [2.7 U]
Styrene	3.4 U	3.4 U [3.3 U]
Tetrachloroethene (PCE)	5.4 U	5.4 U [5.3 U]
Toluene	**5.6**	3 U [3 U]
Trichloroethene (TCE)	4.3 U	4.3 U [4.2 U]
Trichlorofluoromethane (Freon 11)	4.5 U	4.4 U [4.4 U]
Vinyl chloride	2 U	2 U [2 U]
Xylenes (m&p)	**9**	3.4 U [3.4 U]
Xylenes (o)	3.5 U	3.4 U [3.4 U]
Xylenes (total)	**9**	3.4 U [3.4 U]
Chlorotrifluoroethene (CTFE) (TIC)	--	--
Total VOCs[(2)]	**56**	**10 [20]**

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses using USEPA Method TO-15 modified.

2. Total VOCs represents the numerical sum of all individual compound concentrations, excluding 1,2-dichloroethene (total), xylene (total), and TIC. "Total VOCs" was rounded to the nearest integer.

BOLD - Detected concentrations are presented in bold font.
J - Associated numerical value is an estimated concentration.
N - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentiv
O&M - operation and maintenance
TIC - Tentatively Identified Compound
U - The compound was analyzed for but not detected. The associated value is the
USEPA - U. S. Environmental Protection Agency
VOC - volatile organic compound
µg/m^3 - micrograms per cubic meter
[ ] - Analytical data in brackets pertains to a duplicate sample collected at the specified location.
-- = Tentatively identified compound not detected

APPENDIX B — VAPOR AND PERCHED WATER SAMPLE ANALYTICAL RESULTS (OU1 SOIL VAPOR EXTRACTION SYSTEM)

Appendix B-1 — Vapor Sample Analytical Results (OU-1 Soil Vapor Extraction System)
April 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	SVE-1	SVE-7	SVE-2
Location ID:	System Influent	PPZ-1 Effluent	System Effluent
Date Collected:	04/16/15	04/16/15	04/16/15
Units:	µg/m^3	µg/m^3	µg/m^3
Compounds			
1,1,1-Trichloroethane	190 U	4.4 U	3.8 U
1,1,2,2-Tetrachloroethane	240 U	5.5 U	4.7 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	**630**	6.2 U	5.3 U
1,1,2-Trichloroethane	190 U	4.4 U	3.8 U
1,1-Dichloroethane	140 U	3.3 U	2.8 U
1,1-Dichloroethene	140 U	3.2 U	2.7 U
1,1-Difluoroethane (Freon 152a)	95 U	2.2 U	1.9 U
1,2,4-Trichlorobenzene	260 U	6.0 U	5.1 U
1,2-Dibromo-3-chloropropane	340 U	7.8 U	6.7 U
1,2-Dibromoethane	270 U	6.2 U	5.3 U
1,2-Dichlorobenzene	210 U	4.8 U	4.1 U
1,2-Dichloroethane	140 U	3.3 U	2.8 U
1,2-Dichloroethene (cis)	**10000**	**3.2**	**3.2**
1,2-Dichloroethene (total)	**10000**	**3.2**	**3.2**
1,2-Dichloroethene (trans)	140 U	3.2 U	2.7 U
1,2-Dichloropropane	160 U	3.7 U	3.2 U
1,3-Dichlorobenzene	210 U	4.8 U	4.1 U
1,3-Dichloropropene (cis)	160 U	3.7 U	3.1 U
1,3-Dichloropropene (trans)	160 U	3.7 U	3.1 U
1,4-Dichlorobenzene	210 U	4.8 U	4.1 U
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	220 U	5.0 U	4.3 U
2-Butanone (Methyl ethyl ketone)	100 U	**3.0**	**2.7**
4-Methyl-2-pentanone (MIBK)	140 U	3.3 U	2.8 U
Acetone (2-propanone)	350 U	**8.1**	6.9 U
Benzene	110 U	2.6 U	2.2 U
Bromodichloromethane	230 U	5.4 U	4.6 U
Bromoform	360 U	8.3 U	7.1 U
Bromomethane (Methyl bromide)	140 U	3.1 U	2.7 U
Carbon disulfide	110 U	2.5 U	2.2 U
Carbon tetrachloride	220 U	5.1 U	4.3 U
Chlorobenzene	160 U	3.7 U	3.2 U
Chlorodifluoromethane (Freon 22)	120 U	**6.3**	**5.5**
Chloroethane	92 U	2.1 U	1.8 U
Chloroform	170 U	3.9 U	3.4 U
Chloromethane (Methyl chloride)	72 U	**3.0**	**2.5**
Chloropentafluoroethane (Freon 115)	220 U	5.1 U	4.4 U
Cyclohexane	120 U	2.8 U	2.4 U
Dibromochloromethane	300 U	6.9 U	5.9 U
Dichlorodifluoromethane (Freon 12)	170 U	**8.2**	**8.2**
Ethylbenzene	150 U	3.5 U	3.0 U
Isopropylbenzene (Cumene)	170 U	4.0 U	3.4 U

Appendix B-1 — Vapor Sample Analytical Results (OU-1 Soil Vapor Extraction System)
April 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID: / Location ID: / Date Collected: / Units:	SVE-1 System Influent 04/16/15 µg/m^3	SVE-7 PPZ-1 Effluent 04/16/15 µg/m^3	SVE-2 System Effluent 04/16/15 µg/m^3
Compounds			
Methyl Acetate	110 U	2.4 U	2.1 U
Methyl butyl ketone (2-Hexanone)	140 U	3.3 U	2.8 U
Methyl cyclohexane	140 U	3.2 U	2.8 U
Methyl tert-butyl ether (MTBE)	130 U	2.9 U	2.5 U
Methylene chloride	120 U	2.8 U	2.4 U
Styrene	150 U	3.4 U	2.9 U
Tetrachloroethene (PCE)	**2500**	5.5 U	4.7 U
Toluene	130 U	3.0 U	**7.3**
Trichloroethene (TCE)	**7400**	4.3 U	3.7 U
Trichlorofluoromethane (Freon 11)	200 U	4.5 U	3.9 U
Vinyl chloride	90 U	2.1 U	1.8 U
Xylenes (m&p)	150 U	3.5 U	3.0 U
Xylenes (o)	150 U	3.5 U	3.0 U
Xylenes (total)	150 U	3.5 U	3.0 U
Chlorotrifluoroethylene (CTFE) (TIC)	--	**24 NJ**	**22 NJ**
Total VOCs[(2)]	**20,530**	**32**	**29**

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses using USEPA Method TO-15 modified.
2. Total VOCs represents the numerical sum of all individual compound concentrations, excluding 1,2-dichloroethene (total), xylene (total) and TIC. Total VOCs was rounded to the nearest integer.

BOLD = Detected concentrations are presented in bold font.

J - The associated numerical value is an estimated concentration.

N - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

O&M - operation and maintenance

TIC - Tentatively Identified Compound

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

USEPA - U. S. Environmental Protection Agency

VOC - volatile organic compound

µg/m^3 - micrograms per cubic meter

-- = Tentatively identified compound not detected.

Appendix B-2 — Vapor Sample Analytical Results (OU-1 Soil Vapor Extraction System)
February 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	SVE-1	SVE-7	SVE-2
Location ID:	System Influent	PPZ-1 Effluent	System Effluent
Date Collected:	05/15/15	05/15/15	05/15/15
Units:	µg/m^3	µg/m^3	µg/m^3
Compounds			
1,1,1-Trichloroethane	42 U	4.0 U	4.2 U
1,1,2,2-Tetrachloroethane	53 U	5.0 U	5.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	**530**	5.6 U	5.9 U
1,1,2-Trichloroethane	42 U	4.0 U	4.2 U
1,1-Dichloroethane	31 U	2.9 U	3.1 U
1,1-Dichloroethene	**32**	2.9 U	3.0 U
1,1-Difluoroethane (Freon 152a)	21 U	2.0 U	2.1 U
1,2,4-Trichlorobenzene	58 U	5.4 U	5.7 U
1,2-Dibromo-3-chloropropane	75 U	7.1 U	7.4 U
1,2-Dibromoethane	60 U	5.6 U	5.9 U
1,2-Dichlorobenzene	47 U	4.4 U	4.6 U
1,2-Dichloroethane	31 U	2.9 U	3.1 U
1,2-Dichloroethene (cis)	**6400**	2.9 U	**3.4**
1,2-Dichloroethene (total)	**6400**	2.9 U	**3.4**
1,2-Dichloroethene (trans)	31 U	2.9 U	3.0 U
1,2-Dichloropropane	36 U	3.4 U	3.5 U
1,3-Dichlorobenzene	47 U	4.4 U	4.6 U
1,3-Dichloropropene (cis)	35 U	3.3 U	3.5 U
1,3-Dichloropropene (trans)	35 U	3.3 U	3.5 U
1,4-Dichlorobenzene	47 U	4.4 U	4.6 U
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	49 U	4.6 U	4.8 U
2-Butanone (Methyl ethyl ketone)	23 U	2.1 U	2.2 U
4-Methyl-2-pentanone (MIBK)	32 U	3.0 U	3.1 U
Acetone (2-propanone)	77 U	7.3 U	7.6 U
Benzene	25 U	2.3 U	2.4 U
Bromodichloromethane	52 U	4.9 U	5.1 U
Bromoform	80 U	7.5 U	7.9 U
Bromomethane (Methyl bromide)	30 U	2.8 U	3.0 U
Carbon disulfide	24 U	2.3 U	2.4 U
Carbon tetrachloride	49 U	4.6 U	4.8 U
Chlorobenzene	36 U	3.4 U	3.5 U
Chlorodifluoromethane (Freon 22)	27 U	**5.3**	**5.1**
Chloroethane	20 U	1.9 U	2.0 U
Chloroform	38 U	3.6 U	3.7 U
Chloromethane (Methyl chloride)	16 U	**3.0**	**2.9**
Chloropentafluoroethane (Freon 115)	49 U	4.6 U	4.8 U
Cyclohexane	27 U	2.5 U	2.6 U
Dibromochloromethane	66 U	6.2 U	6.5 U
Dichlorodifluoromethane (Freon 12)	38 U	**4.3**	**4.2**
Ethylbenzene	34 U	3.2 U	3.3 U
Isopropylbenzene (Cumene)	38 U	3.6 U	3.8 U
Methyl Acetate	23 U	2.2 U	2.3 U

Appendix B-2 — Vapor Sample Analytical Results (OU-1 Soil Vapor Extraction System)
February 16, 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	SVE-1	SVE-7	SVE-2
Location ID:	System Influent	PPZ-1 Effluent	System Effluent
Date Collected:	05/15/15	05/15/15	05/15/15
Units:	µg/m^3	µg/m^3	µg/m^3
Compounds			
Methyl butyl ketone (2-Hexanone)	32 U	3.0 U	3.1 U
Methyl cyclohexane	31 U	2.9 U	3.1 U
Methyl tert-butyl ether (MTBE)	28 U	2.6 U	2.8 U
Methylene chloride	27 U	2.5 U	2.7 U
Styrene	33 U	3.1 U	3.3 U
Tetrachloroethene (PCE)	**1500**	4.9 U	5.2 U
Toluene	29 U	2.7 U	2.9 U
Trichloroethene (TCE)	**3700**	3.9 U	4.1 U
Trichlorofluoromethane (Freon 11)	44 U	4.1 U	4.3 U
Vinyl chloride	20 U	1.9 U	2.0 U
Xylenes (m&p)	34 U	3.2 U	3.3 U
Xylenes (o)	34 U	3.2 U	3.3 U
Xylenes (total)	34 U	3.2 U	3.3 U
Chlorotrifluoroethylene (CTFE) (TIC)	--	**16 NJ**	**15 NJ**
Total VOCs[(2)]	**12,162**	**13**	**16**

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses using USEPA Method TO-15 modified.
2. Total VOCs represents the numerical sum of all individual compound concentrations, excluding 1,2-dichloroethene (total), xylene (total) and TIC. Total VOCs was rounded to the nearest integer.

BOLD = Detected concentrations are presented in bold font.

J - The associated numerical value is an estimated concentration.

N - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

O&M = operation and maintenance

TIC - Tentatively Identified Compound

U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

USEPA - U. S. Environmental Protection Agency

VOC = volatile organic compound

µg/m^3 = micrograms per cubic meter

-- = Tentatively identified compound not detected.

Appendix B-3 — Vapor Sample Analytical Results (OU-1 Soil Vapor Extraction System)
March 16, 2014
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID:	SVE-1	SVE-7	SVE-2
Location ID:	System Influent	PPZ-1 Effluent	System Effluent
Date Collected:	06/30/15	06/30/15	06/30/15
Units:	µg/m3	µg/m3	µg/m3
Compounds			
1,1,1-Trichloroethane	210 U	4 U	4.2 U
1,1,2,2-Tetrachloroethane	270 U	5 U	5.3 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	**600**	5.6 U	5.9 U
1,1,2-Trichloroethane	210 U	4 U	4.2 U
1,1-Dichloroethane	160 U	2.9 U	3.1 U
1,1-Dichloroethene	**150 U**	2.9 U	3 U
1,1-Difluoroethane (Freon 152a)	330 U	6.2 U	6.6 U
1,2,4-Trichlorobenzene	100 U	2 U	2.1 U
1,2-Dibromo-3-chloropropane	290 U	5.4 U	5.7 U
1,2-Dibromoethane	370 UJ	7.1 UJ	7.4 UJ
1,2-Dichlorobenzene	300 U	5.6 U	5.9 U
1,2-Dichloroethane	230 U	4.4 U	4.6 U
1,2-Dichloroethene (cis)	**100 U**	1.9 U	**2 U**
1,2-Dichloroethene (total)	**160 U**	2.9 U	**3.1 U**
1,2-Dichloroethene (trans)	150 U	2.7 U	2.9 U
1,2-Dichloropropane	6000	3	3.1
1,3-Dichlorobenzene	6000	3	3.1
1,3-Dichloropropene (cis)	190 U	3.6 U	3.8 U
1,3-Dichloropropene (trans)	4900	3.9 U	4.1 U
1,4-Dichlorobenzene	150 U	2.9 U	3 U
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	190 U	3.6 U	3.8 U
2-Butanone (Methyl ethyl ketone)	180 U	3.4 U	3.6 U
4-Methyl-2-pentanone (MIBK)	180 U	3.3 U	3.5 U
Acetone (2-propanone)	230 U	4.4 U	4.6 U
Benzene	240 U	4.6 U	4.8 U
Bromodichloromethane	110 U	2.1 U	2.3 U
Bromoform	160 U	3 U	3.2 U
Bromomethane (Methyl bromide)	390 U	7.3 U	7.7 U
Carbon disulfide	120 U	2.3 U	2.5 U
Carbon tetrachloride	260 U	4.9 U	5.2 U
Chlorobenzene	400 U	7.5 U	8 U
Chlorodifluoromethane (Freon 22)	150 U	**2.8 U**	**3 U**
Chloroethane	120 U	2.3 U	2.4 U
Chloroform	240 U	4.6 U	4.8 U
Chloromethane (Methyl chloride)	180 U	**3.4 U**	**3.5 U**
Chloropentafluoroethane (Freon 115)	170 U	3.2 U	3.3 U
Cyclohexane	80 U	2.1	2.2
Dibromochloromethane	240 U	4.6 U	4.9 U
Dichlorodifluoromethane (Freon 12)	130 U	**2.5 U**	**2.6 U**
Ethylbenzene	190 U	6.5	6.8
Isopropylbenzene (Cumene)	120 U	2.2 U	2.3 U
Methyl Acetate	180 U	3.3 U	3.5 U
Methyl butyl ketone (2-Hexanone)	230 U	4.4 U	4.6 U

Appendix B-3 — Vapor Sample Analytical Results (OU-1 Soil Vapor Extraction System)
March 16, 2014
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Sample ID: / Location ID: / Date Collected: / Units:	SVE-1 System Influent 06/30/15 µg/m3	SVE-7 PPZ-1 Effluent 06/30/15 µg/m3	SVE-2 System Effluent 06/30/15 µg/m3
Compounds			
Methyl cyclohexane	160 U	3 U	3.2 U
Methyl tert-butyl ether (MTBE)	160 U	2.9 U	3.1 U
Methylene chloride	140 U	2.6 U	2.8 U
Styrene	130 U	2.5 U	2.7 U
Tetrachloroethene (PCE)	**170 U**	3.1 U	3.3 U
Toluene	2200	4.9 U	5.2 U
Trichloroethene (TCE)	**220 U**	4.1 U	4.3 U
Trichlorofluoromethane (Freon 11)	99 U	1.9 U	2 U
Vinyl chloride	170 U	3.2 U	3.3 U
Xylenes (m&p)	170 U	3.2 U	3.3 U
Xylenes (o)	170 U	3.2 U	3.3 U
Xylenes (total)	170 U	17	18
Chlorotrifluoroethene (CTFE) (TIC)	140 U	**4.8**	**4.9**
Total VOCs[(2)]	**19,700**	**36**	**38**

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to ALS Group for VOC analyses
2. Total VOCs represents the numerical sum of all individual compound concentrations, excluding 1,2-

BOLD - Detected concentrations are presented in bold font.

J - The associated numerical value is an estimated concentration.

N - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

O&M - operation and maintenance

TIC - Tentatively Identified Compound

U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

USEPA - U. S. Environmental Protection Agency

VOC - volatile organic compound

µg/m^3 - micrograms per cubic meter

-- = Tentatively Identified Compound not detected.

Appendix B-4 — Perched Water Sample Analytical Results (OU1 Soil Vapor Extraction System)
March 16, 2015
Lockheed Martin Corporation, Former Unisys Facility Great Neck
Lake Success, New York[1]

Sample ID:	SVE Perched Water
Location ID:	Perched Water
Date Collected:	03/16/15
Units:	µg/L
Compounds	
1,1,1-Trichloroethane	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	**180**
1,1,2-Trichloroethane	2.0 U
1,1-Dichloroethane	**1.2 J**
1,1-Dichloroethene	**20**
1,1-Difluoroethane (Freon 152a)	2.0 UJ
1,2,4-Trichlorobenzene	2.0 U
1,2-Dibromo-3-chloropropane	2.0 U
1,2-Dibromoethane	2.0 U
1,2-Dichlorobenzene	2.0 U
1,2-Dichloroethane	2.0 UJ
1,2-Dichloroethene (cis)	**3400**
1,2-Dichloroethene (trans)	**8.5**
1,2-Dichloropropane	2.0 U
1,3-Dichlorobenzene	2.0 U
1,3-Dichloropropene (cis)	2.0 U
1,3-Dichloropropene (trans)	2.0 U
1,4-Dichlorobenzene	2.0 U
2,2-Dichloro-1,1,1-trifluoroethane (Freon 123)	2.0 U
2-Butanone (Methyl ethyl ketone)	2.0 UJ
4-Methyl-2-pentanone (MIBK)	2.0 UJ
Acetone (2-propanone)	2.0 UJ
Benzene	**0.72 J**
Bromodichloromethane	2.0 U
Bromoform	2.0 U
Bromomethane (Methyl bromide)	2.0 UJ
Carbon disulfide	2.0 U
Carbon tetrachloride	2.0 U
Chlorobenzene	2.0 U
Chlorodifluoromethane (Freon 22)	2.0 UJ
Chloroethane	2.0 U
Chloroform	2.0 U
Chloromethane (Methyl chloride)	2.0 U
Chloropentafluoroethane (Freon 115)	2.0 U
Cyclohexane	**1.3 J**
Dibromochloromethane	2.0 U
Dichlorodifluoromethane (Freon 12)	2.0 U
Ethylbenzene	2.0 U
Isopropylbenzene (Cumene)	2.0 U
Methyl acetate	2.0 UJ
Methyl butyl ketone (2-Hexanone)	2.0 UJ
Methyl cyclohexane	**1.7 J**
Methyl tert-butyl ether (MTBE)	2.0 U
Methylene chloride	2.0 U
Styrene	2.0 U
Tetrachloroethene (PCE)	**25**
Toluene	2.0 U
Trichloroethene (TCE)	**20**
Trichlorofluoromethane (Freon 11)	2.0 U
Vinyl chloride	**0.24 J**
Xylenes (m&p)	2.0 U
Xylenes (o)	2.0 U
Xylenes (total)	2.0 U
1,2-Dichloro-1,1,2-trifluoroethane (TIC)	**22 JN**
Total VOCs[2]	**3659**

See notes on last page.

Appendix B-4 — Perched Water Sample Analytical Results (OU1 Soil Vapor Extraction System)
March 16, 2015
Lockheed Martin Corporation, Former Unisys Facility Great Neck
Lake Success, New York(1)

Notes:

1. Samples collected by O&M personnel on the dates shown and submitted to TestAmerica, Inc. for VOC analyses using USEPA Method OLM04.2 modified, including
2. Total VOCs represents the numerical sum of all individual compound concentrations excluding xylene (total). "Total 'VOCs" was rounded to the nearest integer.

BOLD - Detected concentrations are presented in bold font.
J - The associated numerical value is an estimated concentration.
N - The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
O&M - operation and maintenance
OU-1 - Operable Unit 1
TIC - Tentatively Identified Compound
U - The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
USEPA - U. S. Environmental Protection Agency
VOC - volatile organic compound
µg/L - micrograms per liter

APPENDIX C — AGC CALCULATION (OU1 GROUNDWATER TREATMENT SYSTEM AND CUMULATIVE TREATMENT SYSTEMS) THROUGH JUNE 2015

Appendix C — AGC Calculation (OU1 Groundwater Treatment System and Cumulative Treatment Systems)
through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Quarterly Maximum VOC Concentrations (µg/m^3)[2]					
Compound	**CAS #**	**3Q 2014**	**4Q 2014**	**1Q 2015**	**2Q 2015**
1,1-Dichloroethene	00075-35-4	0.0	0.0	0.0	0.0
cis-1,2-Dichloroethene	00156-59-2	39.0	0.0	0.0	0.0
2-Butanone	00078-93-3	2.6	2.6	7.1	7.1
Acetone	00067-64-1	0.0	0.0	98.0	98.0
Carbon disulfide	00075-15-0	11.0	11.0	0.0	0.0
Carbon tetrachloride	00056-23-5	0.0	0.0	0.0	0.0
Chlorodifluoromethane (Freon 22)	00075-45-6	23.0	22.0	28.0	28.0
Chloromethane	00074-87-3	0.0	0.0	0.0	0.0
Dichlorodifluoromethane (Freon 12)	00075-71-8	0.0	0.0	0.0	0.0
Tetrachloroethene	00127-18-4	0.0	0.0	0.0	0.0
Toluene	00108-88-3	0.0	0.0	0.0	0.0
Trichloroethene	00079-01-6	0.0	0.0	0.0	0.0
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.0	0.0	0.0	0.0
Vinyl chloride	00075-01-4	68.0	0.0	0.0	0.0

Quarterly Average Variables (Parameters Per Sampling Event)	3Q 2014	4Q 2014	1Q 2015	2Q 2015
Ambient Temperature (°R)	534	515	513	532
Discharge Temperature (°R)	551	533	530	545
Average Discharge Flow Rate (scfm)	3291	3203	3315	3739
Average Discharge Flow Rate (acfm)	3436	3230	3326	3864
Days of Operation (time between events)	92	92	90	91
Days of Operation (operational)	85	41	81	41

See notes on last page.

Appendix C — AGC Calculation (OU1 Groundwater Treatment System and Cumulative Treatment Systems)
through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Constants	3Q 2014	4Q 2014	1Q 2015	2Q 2015
Height of Building,h_b, (ft)	17.33	17.33	17.33	17.33
Height of Stack,h_s, (ft)	29.5	29.5	29.5	29.5
Radius of Stack,R, (ft)	1.0	1.0	1.0	1.0

DAR-1 Calculations	3Q 2014	4Q 2014	1Q 2015	2Q 2015
Discharge Velocity (fps)	18.23	17.13	17.65	20.50
Height Ratio,$h_s/h_b>1.5$	1.70	1.70	1.70	1.70
Buoyancy Flux (ft^4/sec^2)	321.74	283.39	301.57	409.95
Effective Stack Height,h_e, (ft)	37.04	36.73	36.88	37.67

Actual Quarterly Emission Rates (lbs)						Total Pounds Emitted During All Events (lbs)[3]
Compound	CAS #	3Q 2014	4Q 2014	1Q 2015	2Q 2015	
1,1-Dichloroethene	00075-35-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	9.82E-01	0.00E+00	0.00E+00	0.00E+00	0.98
2-Butanone	00078-93-3	6.55E-02	3.07E-02	1.72E-01	9.78E-02	0.37
Acetone	00067-64-1	0.00E+00	0.00E+00	2.37E+00	1.35E+00	3.72
Carbon disulfide	00075-15-0	2.77E-01	1.30E-01	0.00E+00	0.00E+00	0.41
Carbon tetrachloride	00056-23-5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Chlorodifluoromethane (Freon 22)	00075-45-6	5.79E-01	2.60E-01	6.78E-01	3.86E-01	1.90
Chloromethane	00074-87-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Dichlorodifluoromethane (Freon 12)	00075-71-8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Tetrachloroethene	00127-18-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Toluene	00108-88-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Trichloroethene	00079-01-6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Vinyl chloride	00075-01-4	1.71E+00	0.00E+00	0.00E+00	0.00E+00	1.71

See notes on last page.

Appendix C — AGC Calculation (OU1 Groundwater Treatment System and Cumulative Treatment Systems)
through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Quarterly Weighted Percent of AGC (%)[4]		AGC[5]					
Compound	CAS #	µg/m^3	3Q 2014	4Q 2014	1Q 2015	2Q 2015	Cumulative[6]
1,1-Dichloroethene	00075-35-4	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	63	2.07E-03	0.00E+00	0.00E+00	0.00E+00	0.00
2-Butanone	00078-93-3	5,000	1.74E-06	8.32E-07	4.62E-06	2.50E-06	0.00
Acetone	00067-64-1	30,000	0.00E+00	0.00E+00	1.06E-05	5.76E-06	0.00
Carbon disulfide	00075-15-0	700	5.26E-05	2.51E-05	0.00E+00	0.00E+00	0.00
Carbon tetrachloride	00056-23-5	0.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Chlorodifluoromethane (Freon 22)	00075-45-6	50,000	1.54E-06	7.04E-07	1.82E-06	9.87E-07	0.00
Chloromethane	00074-87-3	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Dichlorodifluoromethane (Freon 12)	00075-71-8	12,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Tetrachloroethene	00127-18-4	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Toluene	00108-88-3	5,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Trichloroethene	00079-01-6	0.2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Trichlorotrifluoroethane (Freon 113)	00076-13-1	180,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Vinyl chloride	00075-01-4	0.068	3.35E+00	0.00E+00	0.00E+00	0.00E+00	3.35

See notes on last page.

Appendix C — AGC Calculation (OU1 Groundwater Treatment System and Cumulative Treatment Systems) through June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Notes:

1. AGC calculations were completed following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
2. Analytical results presented in this table represent the larger of the individual compound concentration detected in the effluent and effluent duplicate samples.
3. The total lbs emitted during all events is the summation of the lbs emitted for the specified analyte for the most recent 12-month monitoring period of full-time operation.
4. Quarterly weighted %AGC for a given compound was calculated by following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
5. AGC refers to the compound-specific AGC per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
6. Values shown summarize the calculated percent AGC results for the most recent 12 month monitoring period of full-time operation.

acfm	actual cubic feet per minute
AGC	Annual Guideline Concentration
CAS #	chemical abstract services number
DAR-1	Division of Air Resources Air Guide-1
ft	feet
fps	feet per second
ft^4/sec^2	feet to the fourth per square second
lbs	pounds
NYSDEC	New York State Department of Environmental Conservation
$^{\circ}R$	degrees Rankine
scfm	standard cubic feet per minute
SGC	Short-term Guideline Concentration
VOC	volatile organic compound
$\mu g/m^3$	micrograms per cubic meter
%	percentage

APPENDIX D — AGC CALCULATION (OU1 SOIL VAPOR EXTRACTION SYSTEM)

Appendix D-1 — AGC Calculation (OU1 Soil Vapor Extraction System)
April 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Monthly Maximum VOC Concentrations (µg/m^3)													
Compound	**CAS #**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**	**Apr-15**
1,1-Dichloroethene	00075-35-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cis-1,2-Dichloroethene	00156-59-2	0.0	0.0	0.0	0.0	76.0	76.0	48.0	19.0	4.8	4.0	0.0	3.2
2-Butanone	00078-93-3	2.6	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acetone	00067-64-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon disulfide	00075-15-0	0.0	6.9	6.9	0.0	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0
Carbon tetrachloride	00056-23-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chlorodifluoromethane (Freon 22)	00075-45-6	5.4	7.0	7.0	6.7	5.7	6.1	7.6	7.6	8.0	9.1	9.1	5.5
Chloromethane	00074-87-3	3.3	2.3	2.3	2.2	2.2	3.3	3.3	3.1	4.0	4.0	3.3	2.5
Dichlorodifluoromethane (Freon 12)	00075-71-8	6.7	5.5	5.5	4.2	0.0	6.2	6.2	3.6	5.0	5.0	4.3	8.2
Tetrachloroethene	00127-18-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	00108-88-3	11.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3
Trichloroethene	00079-01-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vinyl chloride	00075-01-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Monthly Average Variables (Parameters Per Sampling Event)	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15
Ambient Temperature (°R)	530	538	543	537	528	526	521	510	501	488	489	508
Discharge Temperature (°R)	547	551	555	554	550	537	528	521	508	498	498	515
Average Discharge Flow Rate (scfm)	175	175	155	145	150	150	150	150	150	158	168	173
Average Discharge Flow Rate (acfm)	181	183	163	152	156	152	150	148	144	148	158	168
Days of Operation (time between events)	31	30	31	31	30	31	30	31	31	28	31	30
Days of Operation (operational)	31	30	31	30	28	31	29	30	29	28	30	29

Constants	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15
Height of Building, h_b, (ft)	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Height of Stack, h_s, (ft)	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
Radius of Stack, R, (ft)	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167

DAR-1 Calculations	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15
Discharge Velocity (fps)	34.49	34.73	31.00	28.94	29.72	28.99	28.51	28.16	27.45	28.25	30.06	32.02
Height Ratio, h_s/h_b>1.5	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
Buoyancy Flux (ft^4/sec^2)	32.14	32.82	26.19	22.64	23.65	22.98	22.38	21.62	20.71	21.82	24.73	28.17
Effective Stack Height, h_e, (ft)	18.58	18.61	18.35	18.20	18.24	18.21	18.18	18.15	18.10	18.16	18.29	18.43

See notes on last page.

Appendix D-1 — AGC Calculation (OU1 Soil Vapor Extraction System)
April 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Actual Monthly Emission Rates (lbs)														Total Pounds Emitted Over All Events (lbs)[2]
Compound	**CAS #**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**	**Apr-15**	
1,1-Dichloroethene	00075-35-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.84E-02	3.18E-02	1.84E-02	7.78E-03	1.90E-03	1.58E-03	0.00E+00	1.46E-03	0.09
2-Butanone	00078-93-3	1.27E-03	1.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Acetone	00067-64-1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Carbon disulfide	00075-15-0	0.00E+00	3.24E-03	2.98E-03	0.00E+00	8.96E-04	1.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.01
Carbon tetrachloride	00056-23-5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Chlorodifluoromethane (Freon 22)	00075-45-6	2.63E-03	3.29E-03	3.02E-03	2.63E-03	2.13E-03	2.55E-03	2.92E-03	3.11E-03	3.16E-03	3.59E-03	4.16E-03	2.51E-03	0.04
Chloromethane	00074-87-3	1.61E-03	1.08E-03	9.93E-04	8.63E-04	8.21E-04	1.38E-03	1.27E-03	1.27E-03	1.58E-03	1.58E-03	1.51E-03	1.14E-03	0.02
Dichlorodifluoromethane (Freon 12)	00075-71-8	3.27E-03	2.59E-03	2.37E-03	1.65E-03	0.00E+00	2.59E-03	2.38E-03	1.48E-03	1.97E-03	1.97E-03	1.97E-03	3.74E-03	0.03
Tetrachloroethene	00127-18-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Toluene	00108-88-3	5.36E-03	5.17E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-03	0.01
Trichloroethene	00079-01-6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Vinyl chloride	00075-01-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00

Monthly Weighted Percent of AGC (%)[3]		AGC[4]												
Compound	**CAS #**	**µg/m³**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**	**Apr-15**	**Cumulative[5]**
1,1-Dichloroethene	00075-35-4	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.95E-04	3.31E-04	1.93E-04	8.18E-05	2.00E-05	1.66E-05	0.00E+00	1.48E-05	0.00
2-Butanone	00078-93-3	5,000	1.59E-07	1.53E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Acetone	00067-64-1	30,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00

Monthly Weighted Percent of AGC (%)[3]		AGC[4]												
Compound	**CAS #**	**µg/m³**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**	**Apr-15**	**Cumulative[5]**
Carbon disulfide	00075-15-0	700	0.00E+00	2.90E-06	2.75E-06	0.00E+00	8.38E-07	9.41E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.43E-06
Carbon tetrachloride	00056-23-5	0.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorodifluoromethane (Freon 22)	00075-45-6	50,000	3.31E-08	4.12E-08	3.90E-08	3.46E-08	2.79E-08	3.35E-08	3.85E-08	4.12E-08	4.21E-08	4.75E-08	5.42E-08	3.20E-08	4.65E-07
Chloromethane	00074-87-3	90	1.12E-05	7.52E-06	7.12E-06	6.31E-06	5.97E-06	1.01E-05	9.28E-06	9.34E-06	1.17E-05	1.16E-05	1.09E-05	8.09E-06	1.09E-04
Dichlorodifluoromethane (Freon 12)	00075-71-8	12,000	1.71E-07	1.35E-07	1.28E-07	9.03E-08	0.00E+00	1.42E-07	1.31E-07	8.14E-08	1.10E-07	1.09E-07	1.07E-07	1.99E-07	1.40E-06
Tetrachloroethene	00127-18-4	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	00108-88-3	5,000	6.73E-07	6.47E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-07	1.75E-06
Trichloroethene	00079-01-6	0.2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichlorotrifluoroethane (Freon 113)	00076-13-1	180,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vinyl chloride	00075-01-4	0.068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

See notes on last page.

Appendix D-1 — AGC Calculation (OU1 Soil Vapor Extraction System)
April 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Notes:

1. AGC calculations were completed following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
2. The total lbs emitted during all events is the summation of lbs emitted for the specified analyte for the most recent 12-month monitoring period of full-time operation.
3. Monthly weighted %AGC for a given compound was calculated by following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
4. AGC refers to the compound-specific AGC per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
5. Values shown summarize the calculated percent AGC results for the most recent 12 month monitoring period of full-time operation.

$^{\circ}R$	degrees Rankine
acfm	actual cubic feet per minute
AGC	Annual Guideline Concentration
CAS #	chemical abstract services number
DAR-1	Division of Air Resources Air Guide-1
fps	feet per second
ft	feet
ft^4/sec^2	teet to the fourth per square second
lbs	pounds
NS	not sampled
NYSDEC	New York State Department of Environmental Conservation
scfm	standard cubic feet per minute
SGC	Short-term Guideline Concentration
VOC	volatile organic compound
$\mu g/m^3$	micrograms per cubic meter
%	percentage

Appendix D-2 — AGC Calculation (OU1 Soil Vapor Extraction System)
May 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Monthly Maximum VOC Concentrations (µg/m^3)																
Compound	**CAS #**	**Mar-14**	**Apr-14**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**	**Apr-15**	**May-15**
1,1-Dichloroethene	00075-35-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cis-1,2-Dichloroethene	00156-59-2	0.0	0.0	0.0	0.0	0.0	0.0	76.0	76.0	48.0	19.0	4.8	4.0	0.0	3.2	3.4
2-Butanone	00078-93-3	0.0	0.0	2.6	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acetone	00067-64-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon disulfide	00075-15-0	0.0	0.0	0.0	6.9	6.9	0.0	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon tetrachloride	00056-23-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chlorodifluoromethane (Freon 22)	00075-45-6	6.3	6.3	5.4	7.0	7.0	6.7	5.7	6.1	7.6	7.6	8.0	9.1	9.1	5.5	5.5
Chloromethane	00074-87-3	3.0	3.3	3.3	2.3	2.3	2.2	2.2	3.3	3.3	3.1	4.0	4.0	3.3	2.5	2.9
Dichlorodifluoromethane (Freon 12)	00075-71-8	4.1	6.7	6.7	5.5	5.5	4.2	0.0	6.2	6.2	3.6	5.0	5.0	4.3	8.2	8.2
Tetrachloroethene	00127-18-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	00108-88-3	0.0	0.0	11.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	7.3
Trichloroethene	00079-01-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vinyl chloride	00075-01-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Monthly Average Variables (Parameters Per Sampling Event)	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
Ambient Temperature (°R)	491	511	530	538	543	537	528	526	521	510	501	488	489	508	522
Discharge Temperature (°R)	516	545	547	551	555	554	550	537	528	521	508	498	498	515	532
Average Discharge Flow Rate (scfm)	114	160	175	175	155	145	150	150	150	150	150	158	168	173	155
Average Discharge Flow Rate (acfm)	113	165	181	183	163	152	156	152	150	148	144	148	158	168	156
Days of Operation (time between events)	31	30	31	30	31	31	30	31	30	31	31	28	31	30	31
Days of Operation (operational)	27	30	31	30	31	30	28	31	29	30	29	28	30	29	31

Constants	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
Height of Building,h_b, (ft)	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Height of Stack,h_s, (ft)	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
Radius of Stack,R, (ft)	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167

See notes on last page.

Appendix D-2 — AGC Calculation (OU1 Soil Vapor Extraction System)
May 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

DAR-1 Calculations	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
Discharge Velocity (fps)	21.44	31.43	34.49	34.73	31.00	28.94	29.72	28.99	28.51	28.16	27.45	28.25	30.06	32.02	29.68
Height Ratio, h_s/h_b>1.5	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
Buoyancy Flux (ft^4/sec^2)	12.20	25.83	32.14	32.82	26.19	22.64	23.65	22.98	22.38	21.62	20.71	21.82	24.73	28.17	24.10
Effective Stack Height, h_e (ft)	17.62	18.33	18.58	18.61	18.35	18.20	18.24	18.21	18.18	18.15	18.10	18.16	18.29	18.43	18.26

Actual Monthly Emission Rates (lbs)																Total Pounds Emitted Over All Events (lbs)[2]
Compound	CAS #	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	
1,1-Dichloroethene	00075-35-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.84E-02	3.18E-02	1.84E-02	7.78E-03	1.90E-03	1.58E-03	0.00E+00	1.46E-03	1.46E-03	0.09
2-Butanone	00078-93-3	0.00E+00	0.00E+00	1.27E-03	1.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Acetone	00067-64-1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Carbon disulfide	00075-15-0	0.00E+00	0.00E+00	0.00E+00	3.24E-03	2.98E-03	0.00E+00	8.96E-04	1.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.01
Carbon tetrachloride	00056-23-5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Chlorodifluoromethane (Freon 22)	00075-45-6	1.75E-03	2.72E-03	2.63E-03	3.29E-03	3.02E-03	2.63E-03	2.13E-03	2.55E-03	2.92E-03	3.11E-03	3.16E-03	3.59E-03	4.16E-03	2.51E-03	2.37E-03	0.04
Chloromethane	00074-87-3	8.32E-04	1.42E-03	1.61E-03	1.08E-03	9.93E-04	8.63E-04	8.21E-04	1.38E-03	1.27E-03	1.27E-03	1.58E-03	1.58E-03	1.51E-03	1.14E-03	1.25E-03	0.01
Dichlorodifluoromethane (Freon 12)	00075-71-8	1.14E-03	2.89E-03	3.27E-03	2.59E-03	2.37E-03	1.65E-03	0.00E+00	2.59E-03	2.38E-03	1.48E-03	1.97E-03	1.97E-03	1.97E-03	3.74E-03	3.53E-03	0.03
Tetrachloroethene	00127-18-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Toluene	00108-88-3	0.00E+00	0.00E+00	5.36E-03	5.17E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-03	3.14E-03	0.01
Trichloroethene	00079-01-6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Vinyl chloride	00075-01-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00

Monthly Weighted Percent of AGC (%)[3]		AGC[4]															
Compound	CAS #	µg/m³	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Cumulative[5]
1,1-Dichloroethene	00075-35-4	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.95E-04	3.31E-04	1.93E-04	8.18E-05	2.00E-05	1.66E-05	0.00E+00	1.48E-05	1.52E-05	0.00
2-Butanone	00078-93-3	5,000	0.00E+00	0.00E+00	1.59E-07	1.53E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Acetone	00067-64-1	30,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00

See notes on last page.

Appendix D-2 — AGC Calculation (OU1 Soil Vapor Extraction System)
May 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Monthly Weighted Percent of AGC (%)[3]		AGC[4]																
Compound	CAS #	µg/m^3	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Cumulative[5]
Carbon disulfide	00075-15-0	700	0.00E+00	0.00E+00	0.00E+00	2.90E-06	2.75E-06	0.00E+00	8.38E-07	9.41E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.43E-06
Carbon tetrachloride	00056-23-5	0.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorodifluoromethane (Freon 22)	00076-13-1	50,000	2.47E-08	3.52E-08	3.31E-08	4.12E-08	3.90E-08	3.46E-08	2.79E-08	3.35E-08	3.85E-08	4.12E-08	4.21E-08	4.75E-08	5.42E-08	3.20E-08	3.09E-08	4.63E-07
Chloromethane	00074-87-3	90	6.55E-06	1.02E-05	1.12E-05	7.52E-06	7.12E-06	6.31E-06	5.97E-06	1.01E-05	9.28E-06	9.34E-06	1.17E-05	1.16E-05	1.09E-05	8.09E-06	9.05E-06	1.07E-04
Dichlorodifluoromethane (Freon 12)	00075-71-8	12,000	6.71E-08	1.56E-07	1.71E-07	1.35E-07	1.28E-07	9.03E-08	0.00E+00	1.42E-07	1.31E-07	8.14E-08	1.10E-07	1.09E-07	1.07E-07	1.99E-07	1.92E-07	1.42E-06
Tetrachloroethene	00127-18-4	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	00108-88-3	5,000	0.00E+00	0.00E+00	6.73E-07	6.47E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-07	4.10E-07	1.48E-06
Trichloroethene	00079-01-6	0.2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichlorotrifluoroethane (Freon 113)	00075-45-6	180,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vinyl chloride	00075-01-4	0.068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Notes:

1. AGC calculations were completed following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
2. The total lbs emitted during all events is the summation of lbs emitted for the specified analyte for the most recent 12-month monitoring period of full-time operation.
3. Monthly weighted %AGC for a given compound was calculated by following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
4. AGC refers to the compound-specific annual guideline concentration per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
5. Values shown summarize the calculated percent AGC results for the most recent 12 month monitoring period of full-time operation.

°R	degrees Rankine
acfm	actual cubic feet per minute
AGC	Annual Guideline Concentration
CAS #	chemical abstract services number
DAR-1	Division of Air Resources Air Guide-1
fps	feet per second
ft	feet
ft^4/sec^2	teet to the fourth per square second
lbs	pounds
NS	not sampled
NYSDEC	New York State Department of Environmental Conservation
scfm	standard cubic feet per minute
SGC	Short-term Guideline Concentration
VOC	volatile organic compound
µg/m^3	micrograms per cubic meter
%	percentage

Appendix D-3 — AGC Calculation (OU1 Soil Vapor Extraction System)
June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [(1)]

Monthly Maximum VOC Concentrations (µg/m^3)												
Compound	**CAS #**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**	**Apr-15**	**May-15**	**Jun-15**
1,1-Dichloroethene	00075-35-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cis-1,2-Dichloroethene	00156-59-2	0.0	0.0	76.0	76.0	48.0	19.0	4.8	4.0	0.0	3.2	3.4	3.4
2-Butanone	00078-93-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acetone	00067-64-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon disulfide	00075-15-0	6.9	0.0	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon tetrachloride	00056-23-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chlorodifluoromethane (Freon 22)	00075-45-6	7.0	6.7	5.7	6.1	7.6	7.6	8.0	9.1	9.1	5.5	5.5	5.1
Chloromethane	00074-87-3	2.3	2.2	2.2	3.3	3.3	3.1	4.0	4.0	3.3	2.5	2.9	2.9
Dichlorodifluoromethane (Freon 12)	00075-71-8	5.5	4.2	0.0	6.2	6.2	3.6	5.0	5.0	4.3	8.2	8.2	6.8
Tetrachloroethene	00127-18-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	00108-88-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3	7.3	0.0
Trichloroethene	00079-01-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vinyl chloride	00075-01-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Monthly Average Variables (Parameters Per Sampling Event)	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15
Ambient Temperature (°R)	543	537	528	526	521	510	501	488	489	508	522	534
Discharge Temperature (°R)	555	554	550	537	528	521	508	498	498	515	532	545
Average Discharge Flow Rate (scfm)	155	145	150	150	150	150	150	158	168	173	155	143
Average Discharge Flow Rate (acfm)	163	152	156	152	150	148	144	148	158	168	156	147
Days of Operation (time between events)	31	31	30	31	30	31	31	28	31	30	31	30
Days of Operation (operational)	31	30	28	31	29	30	29	28	30	29	31	30

Constants	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15
Height of Building,h_b, (ft)	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Height of Stack,h_s, (ft)	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
Radius of Stack,R, (ft)	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167

See notes on last page.

Appendix D-3 — AGC Calculation (OU1 Soil Vapor Extraction System)
June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

DAR-1 Calculations	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15
Discharge Velocity (fps)	31.00	28.94	29.72	28.99	28.51	28.16	27.45	28.25	30.06	32.02	29.68	28.00
Height Ratio, h_s/h_b>1.5	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
Buoyancy Flux (ft^4/sec^2)	26.19	22.64	23.65	22.98	22.38	21.62	20.71	21.82	24.73	28.17	24.10	21.43
Effective Stack Height, h_e, (ft)	18.35	18.20	18.24	18.21	18.18	18.15	18.10	18.16	18.29	18.43	18.26	18.14

Actual Monthly Emission Rates (lbs)													Total Pounds Emitted Over All Events (lbs)[2]
Compound	CAS #	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	
1,1-Dichloroethene	00075-35-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	0.00E+00	0.00E+00	2.84E-02	3.18E-02	1.84E-02	7.78E-03	1.90E-03	1.58E-03	0.00E+00	1.46E-03	1.46E-03	1.28E-03	0.09
2-Butanone	00078-93-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Acetone	00067-64-1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Carbon disulfide	00075-15-0	2.98E-03	0.00E+00	8.96E-04	1.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Carbon tetrachloride	00056-23-5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Chlorodifluoromethane (Freon 22)	00075-45-6	3.02E-03	2.63E-03	2.13E-03	2.55E-03	2.92E-03	3.11E-03	3.16E-03	3.59E-03	4.16E-03	2.51E-03	2.37E-03	1.93E-03	0.03
Chloromethane	00074-87-3	9.93E-04	8.63E-04	8.21E-04	1.38E-03	1.27E-03	1.27E-03	1.58E-03	1.58E-03	1.51E-03	1.14E-03	1.25E-03	1.10E-03	0.01
Dichlorodifluoromethane (Freon 12)	00075-71-8	2.37E-03	1.65E-03	0.00E+00	2.59E-03	2.38E-03	1.48E-03	1.97E-03	1.97E-03	1.97E-03	3.74E-03	3.53E-03	2.57E-03	0.03
Tetrachloroethene	00127-18-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Toluene	00108-88-3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-03	3.14E-03	0.00E+00	0.01
Trichloroethene	00079-01-6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Trichlorotrifluoroethane (Freon 113)	00076-13-1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Vinyl chloride	00075-01-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00

Monthly Weighted Percent of AGC (%)[3]		AGC[4]												
Compound	CAS #	µg/m³	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Cumulative[5]
1,1-Dichloroethene	00075-35-4	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
cis-1,2-Dichloroethene	00156-59-2	63	0.00E+00	0.00E+00	2.95E-08	3.31E-08	1.93E-08	8.18E-09	2.00E-09	1.66E-09	0.00E+00	1.48E-09	1.52E-09	1.35E-09	0.00
2-Butanone	00078-93-3	5,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00
Acetone	00067-64-1	30,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00

See notes on last page.

Appendix D-3 — AGC Calculation (OU1 Soil Vapor Extraction System)
June 2015
Lockheed Martin Corporation; Former Unisys Facility Great Neck
Lake Success, New York [1]

Monthly Weighted Percent of AGC (%)[3]		AGC[4]													
Compound	CAS #	µg/m^3	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Cumulative[5]
Carbon disulfide	00075-15-0	700	2.75E-10	0.00E+00	8.38E-11	9.41E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.53E-10
Carbon tetrachloride	00056-23-5	0.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chlorodifluoromethane (Freon 22)	00076-13-1	50,000	3.90E-12	3.46E-12	2.79E-12	3.35E-12	3.85E-12	4.12E-12	4.21E-12	4.75E-12	5.42E-12	3.20E-12	3.09E-12	2.55E-12	4.47E-11
Chloromethane	00074-87-3	90	7.12E-10	6.31E-10	5.97E-10	1.01E-09	9.28E-10	9.34E-10	1.17E-09	1.16E-09	1.09E-09	8.09E-10	9.05E-10	8.07E-10	1.08E-08
Dichlorodifluoromethane (Freon 12)	00075-71-8	12,000	1.28E-11	9.03E-12	0.00E+00	1.42E-11	1.31E-11	8.14E-12	1.10E-11	1.09E-11	1.07E-11	1.99E-11	1.92E-11	1.42E-11	1.43E-10
Tetrachloroethene	00127-18-4	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	00108-88-3	5,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.25E-11	4.10E-11	0.00E+00	8.36E-11
Trichloroethene	00079-01-6	0.2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichlorotrifluoroethane (Freon 113)	00075-45-6	180,000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vinyl chloride	00075-01-4	0.07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Notes:

1. AGC calculations were completed following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
2. The total lbs emitted during all events is the summation of lbs emitted for the specified analyte for the most recent 12-month monitoring period of full-time operation.
3. Monthly weighted %AGC for a given compound was calculated by following procedures described in NYSDEC DAR-1 Guidelines for the Control of Toxic Ambient Air Contaminants (NYSDEC 1991).
4. AGC refers to the compound-specific annual guideline concentration per the NYSDEC DAR-1 AGC/SGC tables, revised February 28, 2014.
5. Values shown summarize the calculated percent AGC results for the most recent 12 month monitoring period of full-time operation.

˚R	degrees Rankine
acfm	actual cubic feet per minute
AGC	Annual Guideline Concentration
CAS #	chemical abstract services number
DAR-1	Division of Air Resources Air Guide-1
fps	feet per second
ft	feet
ft^4/sec^2	teet to the fourth per square second
lbs	pounds
NS	not sampled
NYSDEC	New York State Department of Environmental Conservation
scfm	standard cubic feet per minute
SGC	Short-term Guideline Concentration
VOC	volatile organic compound
µg/m^3	micrograms per cubic meter
%	percentage