BAE SYSTEMS, BUILDING 2
GREENLAWN, NEW YORK

SUB SLAB VAPOR MITIGATION SYSTEM STARTUP REPORT

SUBMITTED TO:

New York State Department of Environmental Conservation
Department of Environmental Remediation
625 Broadway
Albany, New York 11207

ON BEHALF OF:

BAE Systems
Greenlawn, New York

PREPARED BY:

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PWGC Project Number: BAE1102

SEPTEMBER 2013

P.W. GROSSER CONSULTING INC.

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BAE SYSTEMS
BUILDING 2
GREENLAWN, NEW YORK

NYSDEC Site Number: 1-52-005

SEPTEMBER 2013

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1.0 INTRODUCTION

P.W. Grosser Consulting, Inc. (PWGC) has prepared this Sub-Slab Vapor Mitigation System Startup Report on behalf of BAE Systems (BAE) in order to document the startup activities for the sub-slab vapor mitigation (SSVM) system installed at BAE Systems Building 2 in Greenlawn, New York. The site is currently listed on the New York State Department of Environmental Conservation (NYSDEC) Legacy Site Listing (Site Code 1-52-005), due to the detection of chlorinated volatile organic compounds (VOCs) in the subject building's sub-slab vapors.

1.1 Site Description

BAE Building 2 is one of five main buildings located at a facility which covers approximately 23 acres in Greenlawn, New York. The facility is located southeast of the intersection of Cuba Hill Road and the Port Jefferson Branch of the Long Island Railroad as illustrated on **Figure 1**. Building 2 resides on the east side of Cuba Hill Road as illustrated on **Figure 2**.

1.2 Background

The BAE site was classified as a Class 2 Inactive Hazardous Waste Disposal site in March 1994 as a result of the detection of VOCs, specifically tetrachloroethylene (PCE), in shallow soils beneath the former Alodine Room. The site was reclassified as a Class 4 site in May 1995 and delisted in September 1997. The presence of the PCE was documented in the early 1990s during a Resource Conservation Recovery Act (RCRA) Closure of the Alodine Room by BAE's predecessor, Hazeltine Corp. While the conditions at the site were known to the NYSDEC at that time, the conditions were not actionable by the Department and no action beyond an application of an epoxy floor coating for the Alodine Room was required. Recent (2006) guidance policy changes in the New York State Department of Health (NYSDOH) regarding the potential for soil vapor intrusion has required the NYSDEC to review their closed case files to identify known sites where previously documented conditions have the potential to create a vapor intrusion problem. Over 400 sites are currently listed as Legacy Sites as a result of the vapor intrusion policy changes.

In March and April of 2010, the NYSDEC, through its subcontractor AECOM Technical Services Northeast, Inc of Bloomfield, NJ, performed an investigation in and around

Building 2 to evaluate current subsurface conditions. The investigation primarily focused on the soil quality and soil vapor conditions beneath, and in the vicinity of, the former Alodine Room. While the investigation revealed the presence of PCE in soil samples, the detected concentrations were not actionable as they were below NYSDEC's Industrial Soil Cleanup Objectives (SCOs). The investigation did confirm the presence of soil vapor conditions beneath portions of the Building 2 floor slab that, when compared to NYSDOH soil vapor criteria, would require mitigation measures to prevent the potential for migration of the soil vapors into the occupied building space. The results of the AECOM investigation are contained in their draft report entitled *Draft Soil Vapor Evaluation, Hazeltine Corporation, Site No. 1-52-005, June 2010*.

BAE met with the NYSDEC in September 2010 to discuss the project and gain their concurrence for the path forward. In response to the findings of AECOM's investigation, BAE voluntarily performed extensive investigation in order to define the extent of the soil vapor condition at Building 2 and design a mitigation measure, the SSVM system. The system was installed in December 2012.

2.0 SSVM INSTALLATION

2.1 System Description

The engineering control installed at the site consists of the installation of four SSVM pits which are utilized to create a negative pressure gradient in the sub-slab environment of Building 2 through the use of four high-flow vacuum pumps. Each system creates a radius of influence (ROI) which covers a portion of the building's sub-slab.

Each system is comprised of an SSVM pit with indoor and outdoor piping running to a dedicated roof mounted blower unit. A detail drawing of the system is included as **Appendix A**. Photos of the system and its construction are included as **Appendix B**.

Each blower system has integral local and remote monitoring capabilities tied to Building 2's Building Management System (BMS). The variable frequency drives (VFDs) operate the blower's electric motors, allowing the vacuum and flow rate produced by the blower to be adjusted manually or remotely via the BMS. Each individual blower system operates at a vacuum and flow rate which has been field-calibrated to provide the ROI required for each respective blower system. The BMS monitors pressure transmitters within each of the systems' process streams to provide operating consistency.

2.2 System Details

The initial pit (pit location 3) was constructed for the pilot test with the intent of incorporating it into the final system design. The design of the pit is based on EPA/625/R-92/016, June 1994. As the final design called for a total of four main SSVM pits, three additional pits were constructed identical to the pilot test pit as described below.

At each pit location, a 4'x4' square was saw cut out of the concrete floor slab. The underlying material was excavated to a depth of approximately 19 inches. A 3" thick non-reinforced concrete support slab was installed at the bottom of the excavation. Once the concrete cured, a 3'x3'x1' prefabricated metal box, consisting of a 2"x 2"x1/4" metal frame with 304 stainless steel expanded metal welded to the frame on all six sides, was placed upon the concrete support slab. A 4" diameter galvanized steel pipe penetrates the expanded metal on one side, extending approximately 10" into the center

of the prefabricated box. On the exterior of the box, the steel pipe angles up at 90 degrees to run parallel to the nearest wall. The excavation was backfilled around the box and riser pipe with crushed aggregate meeting specifications as defined in ASTMC-33-90. A vapor barrier was installed above the metal box and surrounding aggregate backfill. A new 4" thick, reinforced concrete slab was poured flush with the existing slab. The riser pipe penetration through the new slab was sealed with non-voc emitting elastomeric joint sealant. The riser pipes penetrate the roof and run horizontally to the blower assembly and ultimately the final exhaust stack location.

2.3 Vacuum Blower Systems

Four (4) 2-HP Ametek Rotron regenerative vacuum blower systems are located on the roof in the vicinity of the riser pipe roof penetrations. The blower assemblies were fabricated off-site by J. E. Gasho and Associates, Inc. and are housed in a custom steel weatherproof blower enclosure. A rubber vibration pad was installed between the roof and the blower assembly to reduce potential noise and vibration created by the blower.

2.4 BMS and VFD Functionality

The vacuum blower system electric motors are operated by VFD. The operating speeds of the VFDs were adjusted during start-up so that the blower systems provide optimal coverage for vapor mitigation while operating most efficiently. The optimization process for the subject system is described in Section 3.3.

Each vacuum blower process stream is equipped with pressure transmitters. These transmitters are connected to the BMS. The BMS is programmed with adjustable set points which are utilized to indicate if the vacuum blower systems are functioning outside of the field-calibrated operation parameters. The BMS is programmed to provide an alarm to alert facilities management personnel of deviations from the operational set points. The setting of these system alarms is currently in the calibration stage.

3.0 SYSTEM STARTUP

The objectives of the commissioning and start-up phase of the SSVM system were to:

- Confirm that the system has been constructed as designed;
- Check that the equipment operates as specified;
- Facilitate modifications to the system based on observations of site conditions that were different than expected during system installation; and
- Gather and evaluate operational data.

3.1 Pre-Commissioning Check

The pre-commissioning check is an inspection performed in order to verify that components of the system have been properly installed. A checklist for pre-commissioning activities was prepared by PWGC based upon the final system design. The initial checklist is included as **Appendix C.** The pre-commissioning checklist is a working document that determines if an aspect of the system meets requirements or requires further action. The components of the system were properly installed. The functionality of the pressure alarms is in the calibration stage.

3.2 Pre-Startup Functional Performance System Inspection

After the pre-commissioning checks and individual component testing were successfully completed, the entire system was inspected to verify integrity prior to actual operation. The system was inspected for piping leaks, loose equipment, and to verify that individual components do not interfere with each other. No such deficiencies were noted during the pre-startup functional performance inspection.

3.3 System Startup / Full Scale Demonstration

During the start-up phase, the entire system was put into operation beginning in March 2013. The strategy for start-up was to conduct activities sequentially, comparing observations and test data against design and performance criteria. This allowed the system to be brought on line in a systematic and safe manner.

The initial speed for each blower was set at 45 Hz. To test the system's performance, communication testing was performed utilizing a digital manometer, which measures the pressure differential between the indoor air and the sub-slab of the subject building. The

initial communication testing was performed utilizing 10 permanent sub-slab vapor monitoring points and 6 temporary sub-slab monitoring points. Monitoring points are indicated on **Figure 3**. The permanent points are the sampling ports previously utilized for VOC vapor sampling, while the temporary points were installed specifically to test the SSVM system and are generally in areas furthest from the suction pits, where the influence would most likely be weakest.

During startup, leaks were audible in the areas of each of the suction pits. The leaks were due to the vapor barrier and adhesive along the edge of the slab creating a pathway for air along the border between the existing floor and the newly-poured floor above the suction pits. In April 2013, the leaks were sealed with StegoTack™ and Stego™ vapor retarding tape. Subsequent communication testing results indicated improved functionality of the system.

Following leak sealing, temperature readings at blower #4 became significantly higher, putting into question the operational ability of blower #4. Therefore, an individual function test was performed on the blower #4 and, for comparison, blower #1. Based on the results of the test, blower #4 is operating correctly and within specifications.

The procedure for the tests was to operate the blower with the pit valve closed and the dilution valve on the roof open. This setup enabled the blower to be run with minimal head loss on the system and no effect from the subsurface pit. The dilution valve was opened incrementally at each blower to create different flow conditions. Pressure and flow rates were measured at each increment to generate the flow rate vs. pressure curve shown in **Appendix D**. The test was repeated with each blower running at 45Hz and at 51Hz, then compared to the manufacturer's blower curve.

The tests show no difference in functionality between the two blowers and that the performance of each blower was in accordance with the manufacturer's specifications. The blowers at pits #4 and #1 were determined to be operating as expected. The increased temperature at the blower #4 location appears to be the result of an unexpectedly tight soil formation in Pit #4, limiting vapor flow through the system. In order to reduce the effluent temperature, the blower speed was reduced to 30 Hz.

Subsequent temperature readings confirmed that the temperature reduced to an acceptable level.

The blower #1 speed was increased to 51 Hz in an attempt to increase the area of influence in the southern area of the model shop (the area of MP-8 and TMP-9). The results obtained from TMP-9 following the speed increase indicated a greater negative pressure differential, indicating that the system was operating more effectively in that area.

Negative pressure readings were measured in a majority of the monitoring points. A table indicating the results of the communication testing is included as **Appendix E.** However, there was no pressure differential measured at temporary measuring points TMP-1 (Facilities Storage), TMP-2 (Compressor Room), TMP-3 (Loading Dock), TMP-4 (Model Shop Storage), and TMP-5 (Model Shop). During drilling, it was noted that the soils at monitoring points TMP-1, TMP-4, and TMP-5 consisted of clay. It appears that clay soils prevail near the building footings, where these monitoring points are located. The clay prevents a pathway for sub-slab vapors at these locations and therefore no further response is deemed necessary in these areas.

Based on the initial rounds of communication testing, the effectiveness of the system was confirmed for most of the building. However, PWGC concluded that additional monitoring points would be necessary to further evaluate system effectiveness.

In August 2013, five additional temporary monitoring points TMP-7 (Metrology), TMP-8 (Metrology), TMP-9 (Model Shop), TMP-10 (Model Shop), and TMP-11 (Mail Room) were installed to obtain additional data regarding system functionality in areas that exhibited low to no pressure gradients in the preliminary communication testing. Due to weak responses at location MP-2 in the Facilities Storage garage, and at MP-3 in the mail room, temporary points TMP-7, TMP-8, and TMP-11were installed to further evaluate the areas between blower Pits 3 and 4. Results indicated negative pressure beneath the slab at these locations. Based on these readings, the system is functioning as intended in the area between Pits 3 and 4. The results suggest that a blockage may have developed in the MP-3 tubing.

Temporary monitoring points TMP-9 were installed to confirm the results obtained from permanent monitoring point MP-8 located in the Model Shop, where a pressure difference was not detectable. Upon re-testing, an acceptable pressure differential was measured at TMP-9 suggesting a blockage may have developed in the MP-8 tubing.

Temporary monitoring point TMP-10 confirmed the system effectiveness in the northwest area of the building.

Temporary monitoring point TMP-2 is located in the Compressor room. This room is located in what is suspected to be a separate building from Building 2, with a separate foundation. PWGC will perform indoor air sampling in this building as part of the operations and maintenance phase for the system. Specifically, a sample will be collected in the security office adjacent to the compressor room, to determine if elevated VOCs are present in that space.

A monitoring point was not installed in the office located in the southwest corner of the building as this space is a former loading dock which currently has a raised wood floor. PWGC will perform indoor air sampling in this office during the operations and maintenance phase for the system, to determine if elevated VOCs are present in that space.

Temporary monitoring point TMP-3 is located in the building's current loading dock which is surrounded by footings. It is likely that these footings prevent the system from effecting the loading dock.

Figure 4 indicates the pressure differentials at monitoring locations throughout the building. The negative pressure readings indicate that the system is operating as intended. Based on this, the startup phase for the system is complete and the system is ready for transition into the operations and maintenance phase.

4.0 CARBON TREATMENT

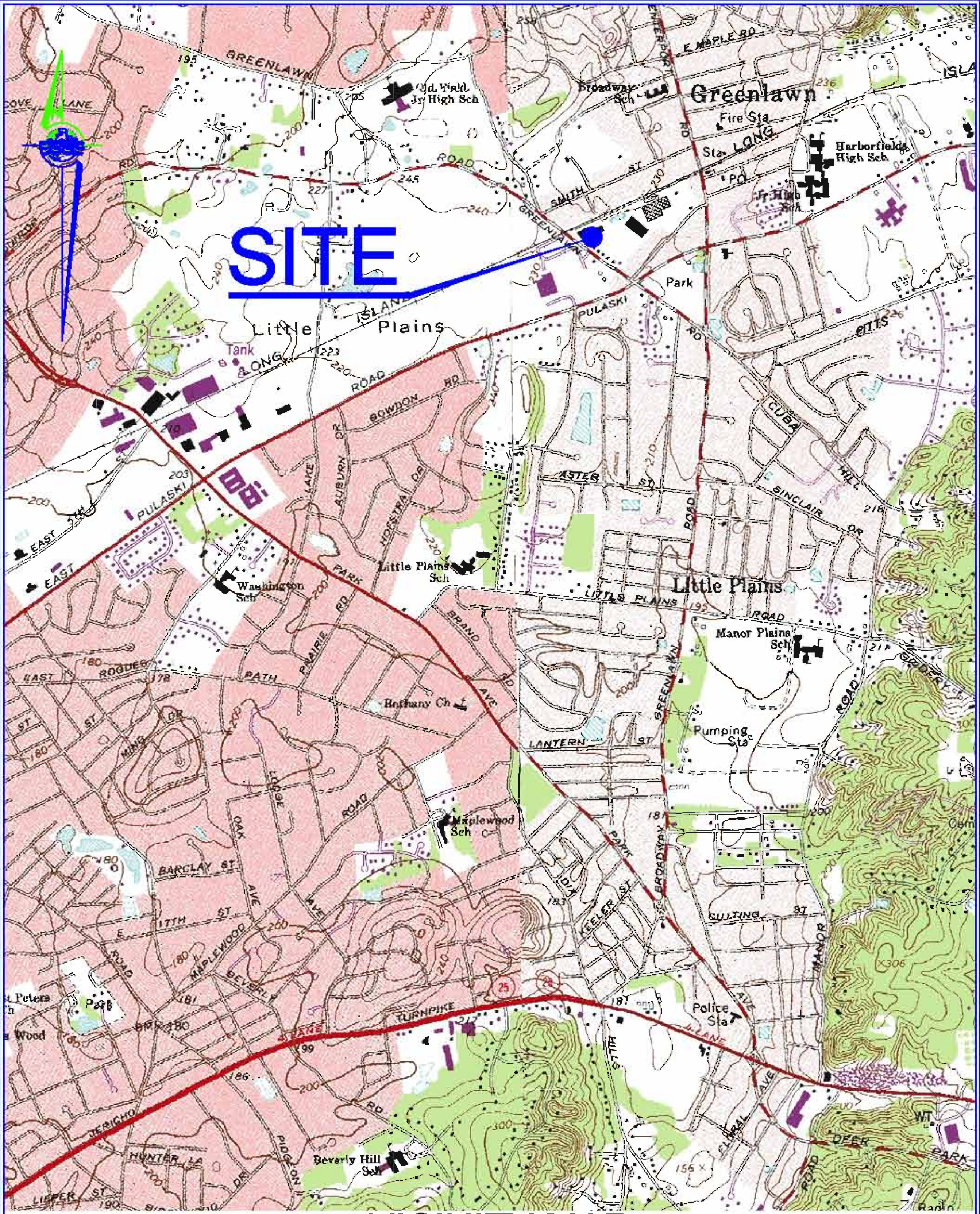
PWGC used data from the SSVM pilot test input into the NYSDEC Division of Air Resources DAR-1 software version 3.6 for initial impact screening. The highest PCE concentration from the pilot test was used in determining emission rates. Based on the DAR-1 impact screening analysis, there was one predicted exceedence above NYSDEC Annual and Short-term Guideline Concentrations (AGC/SGC) thresholds. Therefore, carbon treatment was placed on Blower 3.

Emissions samples were collected from each of the four blowers following startup. Screening results indicated that emissions were within AGC/SGC thresholds for Blowers 1,2, and 4. Sampling and carbon treatment of Blower 3 continued on a monthly basis until the Blower 3 screening results indicated that levels decreased below the AGC/SGC thresholds. Screening results are included as **Appendix F**. Based on these results, carbon treatment is no longer required for Blower 3.

5.0 CONCLUSIONS

An SSVM system was installed at BAE Systems Building 2 which creates a negative pressure beneath the building's slab, mitigating potential VOC vapors from intruding into the indoor air. Extensive communication testing performed throughout the building has confirmed the effectiveness of the system. Based on the results, the startup phase for the system is complete and the system is ready for transition into the operations and maintenance phase. Tasks included for the O&M phase will include calibration and testing of the pressure alarms, indoor air sampling to confirm system effectiveness, and routine inspection of SSVM components.

FIGURES



Mapped, edited, and published by the Geological Survey
Revised in cooperation with New York
Department of Transportation
Control by USGS, USC&GS, and New Jersey Geodetic Survey

VICINITY MAP

SCALE: 1:24000

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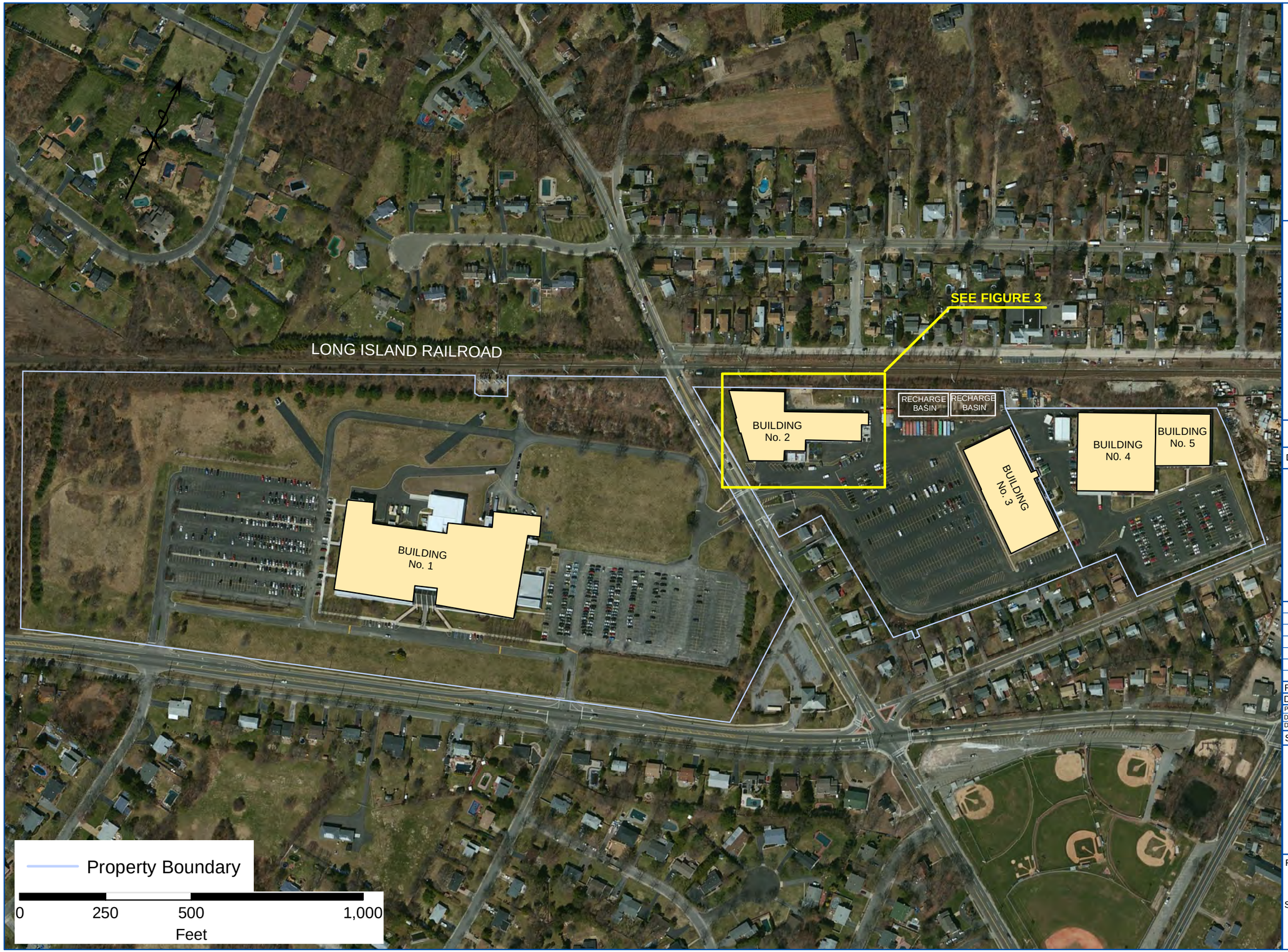
Project: BAE0902	Figure No: 1
Designed by: RWW	
Approved By: PWG	
Drawn By: LLG	Date: 10/20/09



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DATA SOURCE:
ESRI: 2010 BING MAPS

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DRAWN BY:	IB	SCALE:	AS SHOWN

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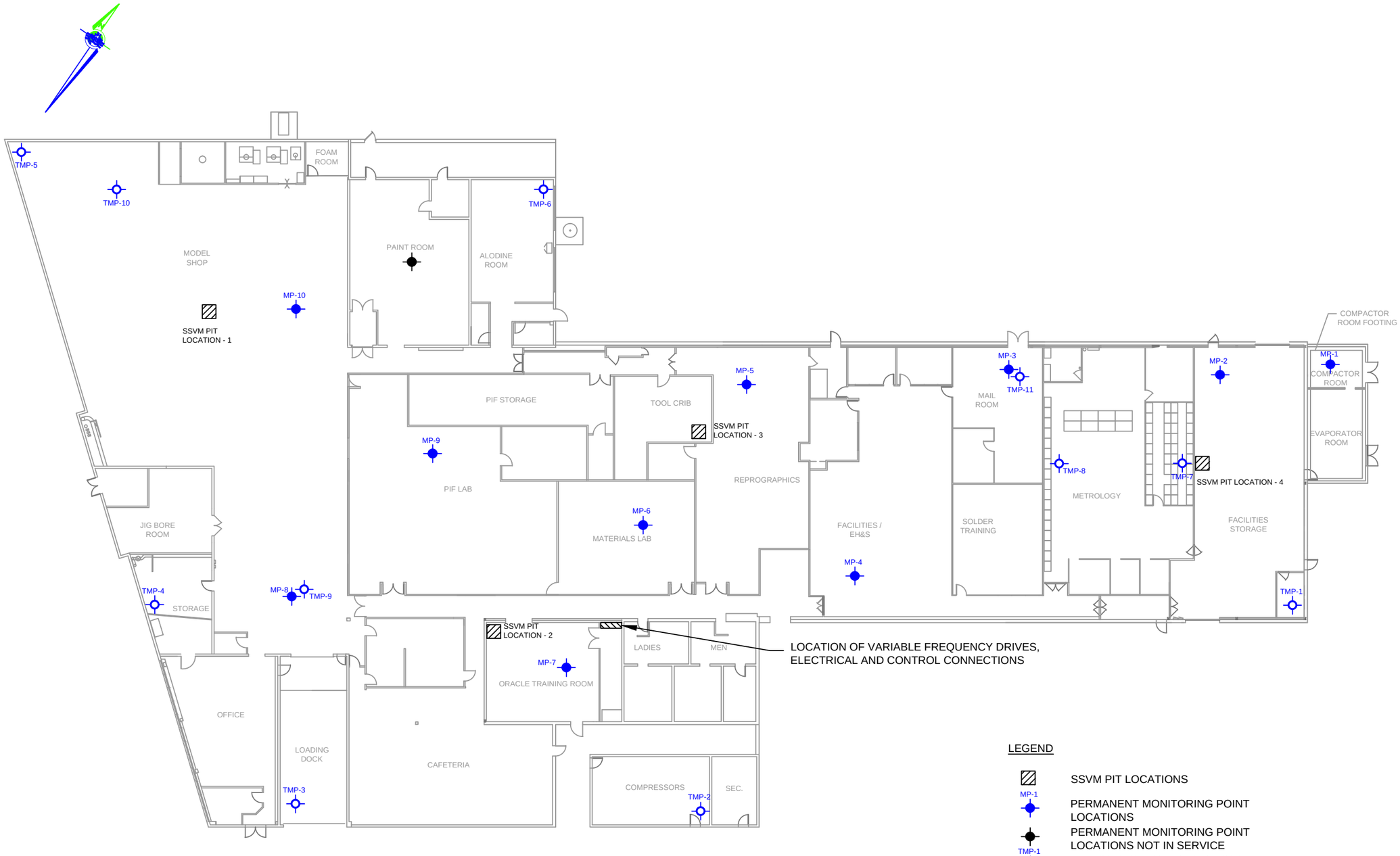
BAE SYSTEMS
BUILDING 2

5 CUBA HILL ROAD
GREENLAWN, NY 11740

FIGURE NO:

2

SHEET:



FLOOR PLAN
GROUND FLOOR

SCALE: 1" = 30'

LEGEND

- SSVM PIT LOCATIONS
- MP-1 — PERMANENT MONITORING POINT LOCATIONS
- PERMANENT MONITORING POINT LOCATIONS NOT IN SERVICE
- TMP-1 — TEMPORARY MONITORING POINT LOCATIONS FOR START-UP

0 30 60

SCALE: 1" = 30'

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DESIGNED BY:	DH	DATE:	9-12-13
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SHEET TITLE

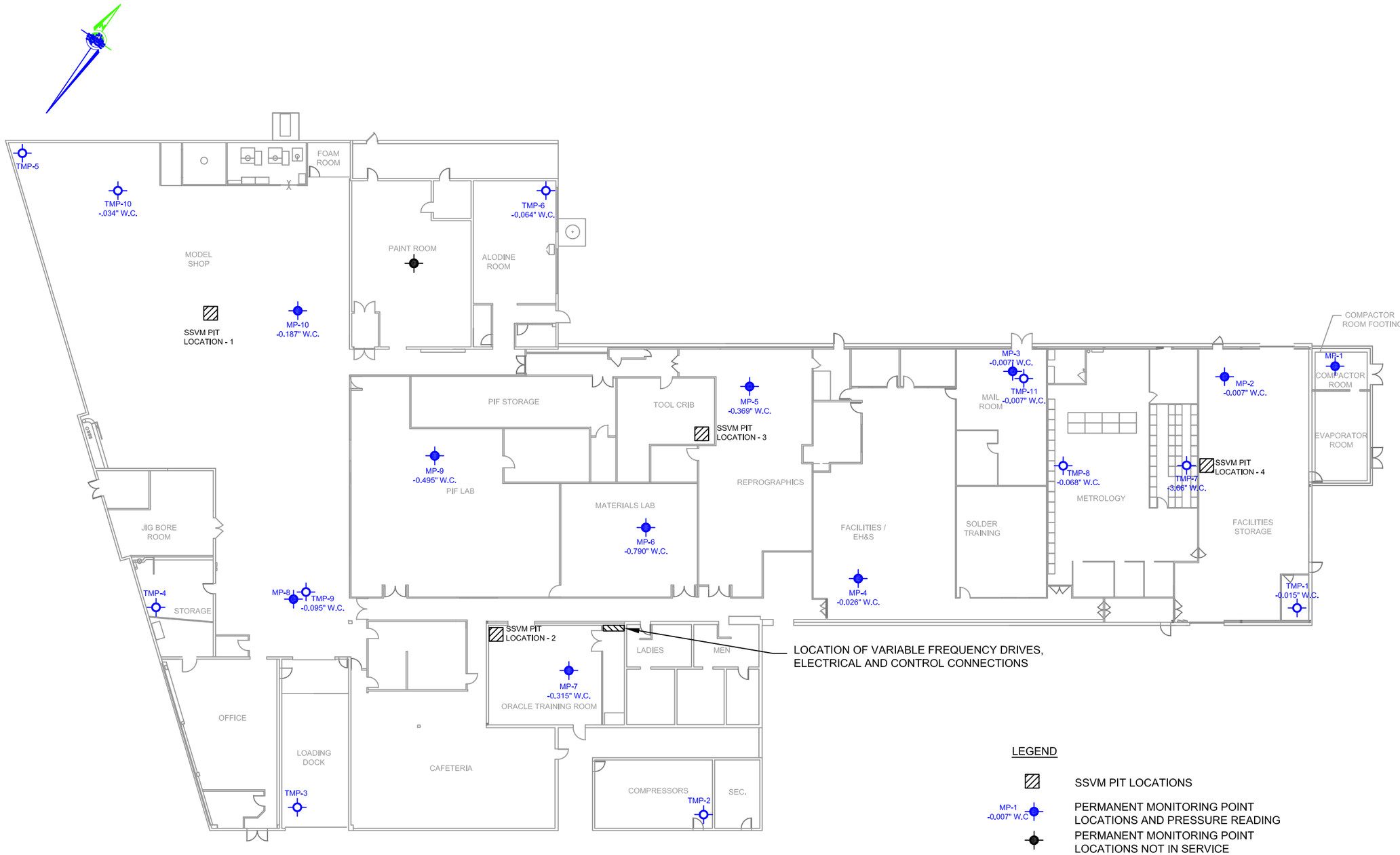
SUB SLAB VAPOR MITIGATION SYSTEM START-UP

PIT AND MONITORING POINT LOCATIONS

FIGURE NO

3

SHEET OF



LEGEND

- SSVM PIT LOCATIONS
- MP-1 -0.007" W.C — PERMANENT MONITORING POINT LOCATIONS AND PRESSURE READING
- PERMANENT MONITORING POINT LOCATIONS NOT IN SERVICE
- TMP-6 -0.064" W.C — TEMPORARY MONITORING POINT LOCATIONS AND PRESSURE READING

FLOOR PLAN
GROUND FLOOR

SCALE: 1" = 30'

0 30 60

SCALE: 1" = 30'

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SHEET TITLE

SUB SLAB VAPOR MITIGATION SYSTEM START-UP

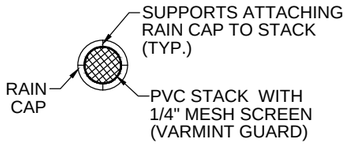
MONITORING POINT PRESSURE READINGS

FIGURE NO
4

SHEET OF

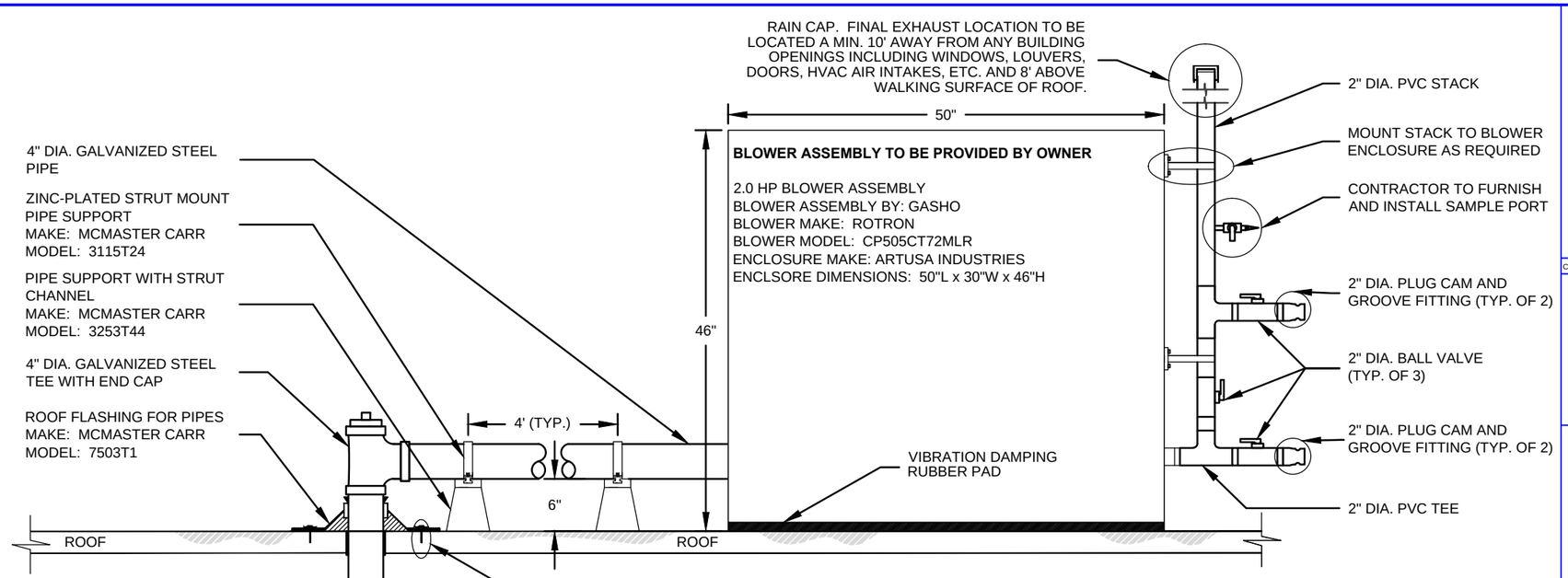
APPENDIX A

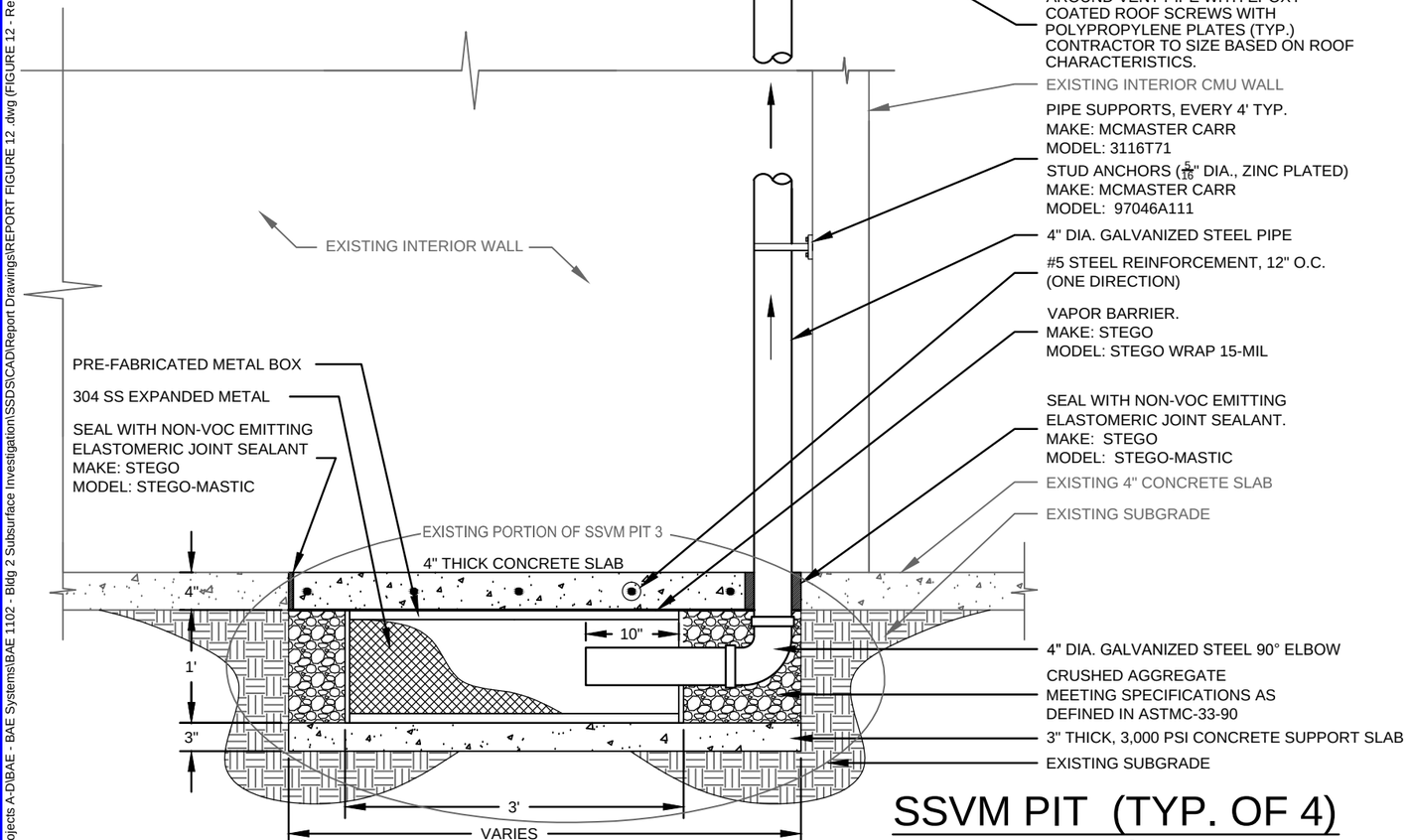
SSVM Detail Drawing



RAIN CAP

SCALE: NOT TO SCALE





SSVM PIT (TYP. OF 4)

SCALE: 3/4" = 1'

NOTE:

1. CONTRACTOR TO PROVIDE UNI-STRUT SUPPORT FOR SSVM PIT 1 VERTICAL PIPING. PROVIDE 2 VERTICAL STRUTS AND HORIZONTAL STRUTS AT 4' INTERVALS. SUPPORTS TO BE ANCHORED TO SLAB AND SUPPORTED AT ROOF TR USS.

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SHEET TITLE

SUB SLAB VAPOR MITIGATION

SSVM PIT DETAILS

FIGURE NO 12

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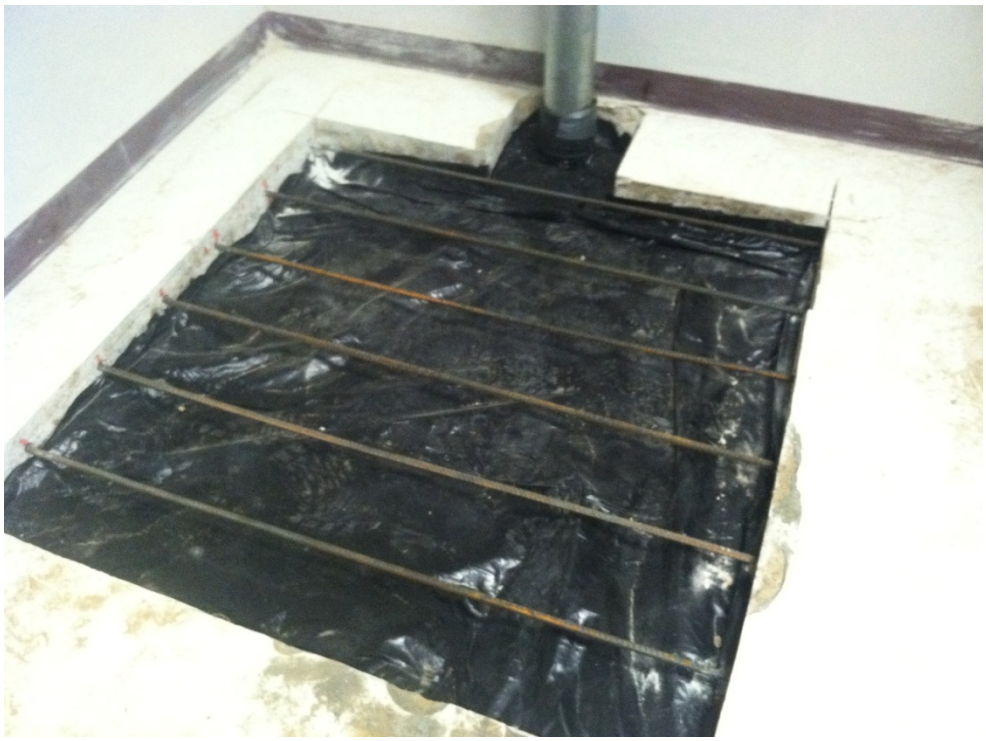
J:\Projects A-D\BAE - BAE Systems\BAE 1102 - Bldg 2 Subsurface Investigation\SSDS\CAD\Report Drawings\REPORT FIGURE 12 .dwg (FIGURE 12 - Report) Sep 12,2012-1:27pm By: mccabe

APPENDIX B

Photographs

SSVM Suction Pit with expanded steel cage

SSVM Suction Pit with surrounding stone



SSVM suction pit with vapor barrier and re-bar

SSVM suction pit with new floor

Blower #2 within enclosure

Variable Frequency Drives

APPENDIX C

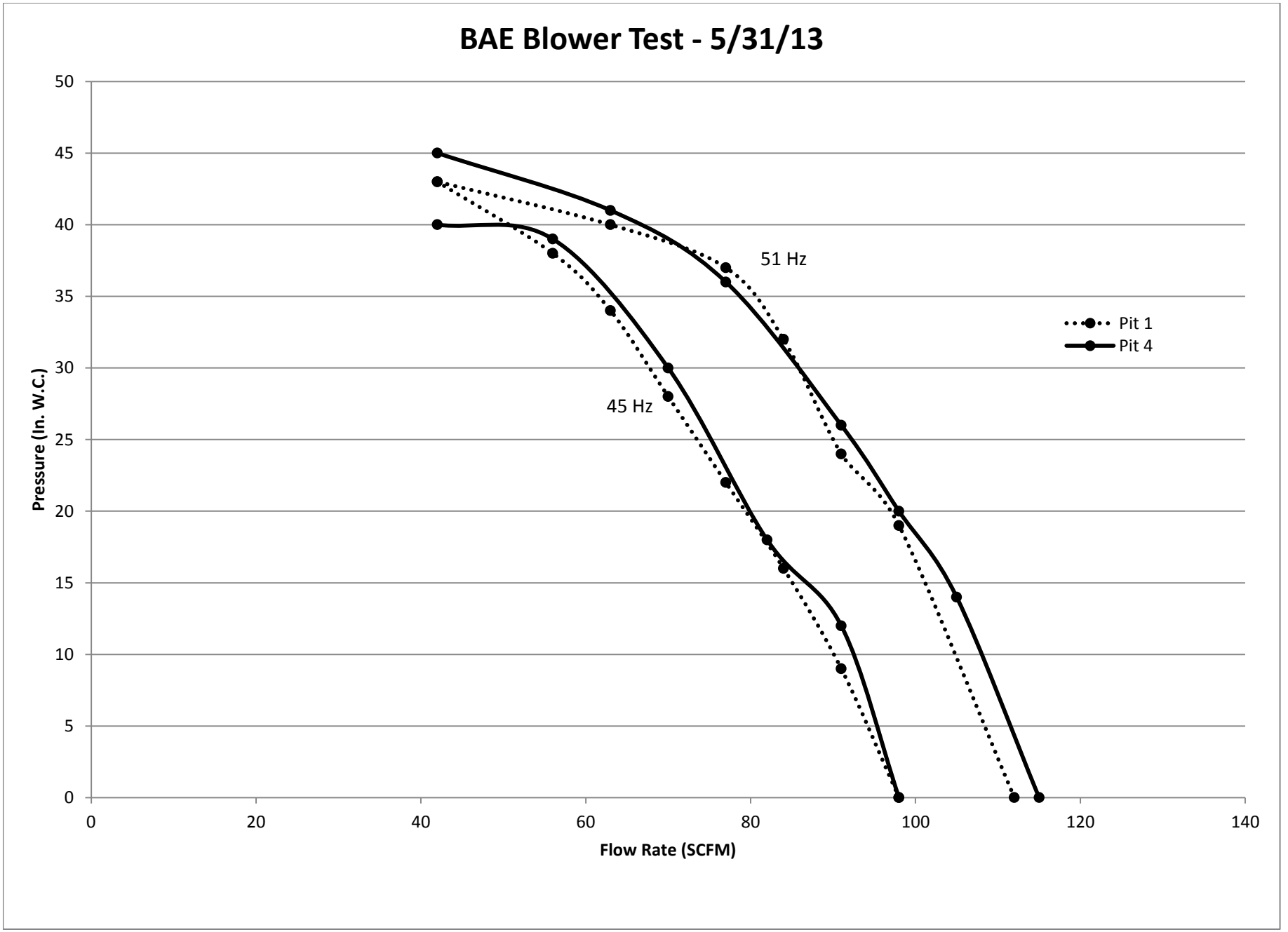
Pre-Commissioning Check List

BAE SSVM Start-Up
Pre-Operation Checklist

		Pit 1 - Model Shop	Pit 2 - Oracle Training Room	Pit 3 - Tool Crib	Pit 4 - Facilities Storage	Comments
1	**Inspect Electrical Connections**					
	At VFD	Connections are as designed	Connections are as designed	Connections are as designed	Connections are as designed	All electrical connections appear to be connected as designed
	At Blower	Connections are as designed	Connections are as designed	Connections are as designed	Connections are as designed	All electrical connections appear to be connected as designed
2	**Inspect Mechanical Piping Connections**					
	Inside	Connections are as designed	Connections are as designed	Connections are as designed	Connections are as designed	All piping connections appear to be connected as designed
	On Roof	Connections are as designed	Connections are as designed	Connections are as designed	Connections are as designed	All piping connections appear to be connected as designed
3	**Inspect Monitoring Equipment Connections**					
	Vacuum Transmitter	Not connected to BMS	Not connected to BMS	Not connected to BMS	Not connected to BMS	The vacuum transmitters are NOT connected to the BMS as designed
	Flow Meter	Not connected to BMS	Not connected to BMS	Not connected to BMS	Not connected to BMS	The flow meters are NOT connected to the BMS as designed
4	**Start all four blowers simultaneously at 50% capacity**	Blower started up as expected	Blower started up as expected	Blower started up as expected	Blower started up as expected	All blowers started up at 50% and appear to run as expected
5	**Inspect exhaust piping for leaks**					
	Inside	Whistling through the concrete slab needs to be sealed	Whistling through the concrete slab needs to be sealed	Whistling through the concrete slab needs to be sealed	Whistling through the concrete slab needs to be sealed	Whistling through the concrete slab needs to be sealed, especially for Pits 1 and 4
	On Roof	No leaks detected	No leaks detected	No leaks detected	No leaks detected	No leaks detected
6	**Increase VFD to attain desired ROI**	Blower speeds adjusted	Blower speeds adjusted	Blower speeds adjusted	Blower speeds adjusted	Blower speeds adjusted, see communication testing log for details

APPENDIX D

Blower #4 Function Test Results


BAE Blower Test - 5/31/13
Pressure (In. W.C.)
Flow Rate (SCFM)
0
5
10
15
20
25
30
35
40
45
50
0
20
40
60
80
100
120
140
51 Hz
45 Hz
Pit 1
Pit 4

APPENDIX E

Startup Log

Date	Iteration #	Parameter	Pit 1 - Model Shop	Pit 2 - Oracle Training	Pit 3 - Tool Crib	Pit 4 - Facilities Storage	Vacuum at Monitoring Point ("WC)													
							MP-1	MP-2	TMP-1	MP-3	MP-4	TMP-2	MP-5	MP-6	MP-7	MP-8	TMP-3	TMP-4	MP-9	MP-10	TMP-5	TMP-6
							Comp.	Fac. Stor.	Facilities	Mail	Fac. EH&S	Sec. out	Reprog.	Mat. Lab.	Oracle	Model	Load. Bay	Storage	PIF Lab	Model	Model	Alodine
Tuesday March 26, 2013	1	VFD Motor Speed	OFF	OFF	OFF	OFF	0	0	+0.012	+0.025	0	0	0	+0.008	0	0	0	0	0	+0.379	0	0
		VFD Current	Baseline																			
		Flow Rate																				
		Temperature																				
		Vacuum at Blower																				
		PID																				
Tuesday March 26, 2013	2	VFD Motor Speed	OFF	OFF	45 Hz	OFF	0	0	0	0	-0.042	0	-0.358	-0.245	-0.009	0	0	0	-0.080	+0.386	+0.004	-0.016
		VFD Current																				
		Flow Rate																				
		Temperature			80 F																	
		Vacuum at Blower			-18" WC																	
		PID																				
Tuesday March 26, 2013	3	VFD Motor Speed	45 Hz	45 Hz	45 Hz	45 Hz	0	-0.007	-0.015	-0.006	-0.060	0	-0.225	-0.491	-0.195	0	0	0	-0.256	+0.328	0	-0.032
		VFD Current																				
		Flow Rate																				
		Temperature	90 F	90 F	95 F	97 F																
		Vacuum at Blower	-26" WC	-22" WC	-18" WC	-34" WC																
		PID	3.7 ppmV	8.6 ppmV	61.4 ppmV	1.9 ppmV																
Friday March 29, 2013	4	VFD Motor Speed	45 Hz 2570 rpm	45 Hz 2580 rpm	45 Hz 2568 rpm	45 Hz 2555 rpm	0	-0.007	-0.005	0	-0.054	0	-0.233	-0.451	-0.18	0	0	0	-0.25	+0.297	0	-0.02
		VFD Current	4.5 A	4.3 A	4.7 A	5.0 A																
		Flow Rate																				
		Temperature	96 F	94 F	98 F	104 F																
		Vacuum at Blower	-27" WC	-20" WC	-18" WC	-37" WC																
		PID	0.5 ppmV	0.5 ppmV	27.9 ppmV	0.3 ppmV																
Monday May 6, 2013	5	VFD Motor Speed	45 Hz 2560 rpm	45 Hz 2570 rpm	45 Hz 2570 rpm	45 Hz 2570 rpm	0	-0.001	0	0	-0.044	0	-0.371	-0.715	-0.268	0	0	0	-0.431	-0.120	0	-0.016
		VFD Current	4.9 A	4.5 A	4.7 A	4.9 A																
		Flow Rate																				
		Temperature	114 F	110 F	106 F	138 F																
		Vacuum at Blower	-34" WC	-25" WC	-19" WC	-40" WC																
		PID																				
Monday May 6, 2013	6	VFD Motor Speed	50 Hz 3000 rpm	45 Hz 2575 rpm	45 Hz 2570 rpm	OFF								-0.716		-0.010	0	-0.028	-0.428	-0.137	0	-0.003
		VFD Current	5.6 A	4.5 A	4.7 A																	
		Flow Rate																				
		Temperature																				
		Vacuum at Blower																				
		PID																				
Monday May 6, 2013	7	VFD Motor Speed	50 Hz 3000 rpm	52 Hz 3100 rpm	45 Hz 2570 rpm	OFF						0		-0.781	-0.297	-0.002	0	0	-0.479	-0.148		-0.018
		VFD Current	5.6 A	5.6 A	4.7 A																	
		Flow Rate																				
		Temperature	125 F	110 F																		
		Vacuum at Blower	-38" WC	-25" WC																		
		PID																				

Date Date	Iteration #	Parameter	Pit 1 - Model Shop	Pit 2 - Oracle Training	Pit 3 - Tool Crib	Pit 4 - Facilities Storage	Vacuum at Monitoring Point ("WC)																
							MP-1	MP-2	TMP-1	MP-3	MP-4	TMP-2	MP-5	MP-6	MP-7	MP-8	TMP-3	TMP-4	MP-9	MP-10	TMP-5	TMP-6	TMP-7	TMP-8	TMP-9	TMP-10	TMP-11
							Comp.	Fac. Stor.	Facilities	Mail	Fac. EH&S	Sec. out	Reprog.	Mat. Lab.	Oracle	Model	Load. Bay	Storage	PIF Lab	Model	Model	Alodine	Metrology	Metrology	Model	Model	Mail
Thursday May 9, 2013	8	VFD Motor Speed	50 Hz 3000 rpm	45 Hz 2574 rpm	45 Hz 2570 rpm	OFF																					
		VFD Current	5.6 A																								
		Flow Rate								-0.007	-0.026	0	-0.364	-0.740	-0.276	0	0	0	-0.426	-0.187	0	-0.064					
		Temperature	110 F																								
		Vacuum at Blower	-38" WC	-26" WC	-20" WC																						
		PID																									
Thursday May 9, 2013	9	VFD Motor Speed	50%	50%	50%	OFF																					
		VFD Current																									
		Flow Rate																									
		Temperature	104 F							0	-0.026		-0.369	-0.790	-0.315	0	0	0	-0.495	-0.148	0	0					
		Vacuum at Blower	-34" WC																								
		PID																									
Monday August 19, 2013	10	VFD Motor Speed	50 Hz	45 Hz	45 Hz	30 Hz																					
		VFD Current																									
		Flow Rate																									
		Temperature																					-3.66	-0.068	-0.095	-0.034	-0.007
		Vacuum at Blower																									
		PID																									
	11	VFD Motor Speed																									
		VFD Current																									
		Flow Rate																									
		Temperature																									
		Vacuum at Blower																									
		PID																									
	12	VFD Motor Speed																									
		VFD Current																									
		Flow Rate																									
		Temperature																									
		Vacuum at Blower																									
		PID																									
	13	VFD Motor Speed																									
		VFD Current																									
		Flow Rate																									
		Temperature																									
		Vacuum at Blower																									
		PID																									
	14	VFD Motor Speed																									
		VFD Current																									
		Flow Rate																									
		Temperature																									
		Vacuum at Blower																									
		PID																									

APPENDIX F

Air Screen Results

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

No Title

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     0.250000E-02
   STACK HEIGHT (M)       =       7.3152
   STK INSIDE DIAM (M)    =       0.0509
   STK EXIT VELOCITY (M/S)=      18.6257
   STK GAS EXIT TEMP (K)  =     293.1500
   AMBIENT AIR TEMP (K)   =     293.1500
   RECEPTOR HEIGHT (M)    =       0.0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =       4.8768
   MIN HORIZ BLDG DIM (M) =      60.9600
   MAX HORIZ BLDG DIM (M) =     121.9200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =    0.225 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
100.	6.162	6	1.5	1.5	10000.0	7.43	4.07	4.10	SS
200.	6.328	6	1.0	1.0	10000.0	7.81	7.73	5.15	SS
300.	5.330	6	1.0	1.0	10000.0	7.81	11.23	6.60	SS
400.	4.221	6	1.0	1.0	10000.0	7.81	14.64	7.97	SS
500.	3.350	6	1.0	1.0	10000.0	7.81	17.97	9.28	SS
600.	2.702	6	1.0	1.0	10000.0	7.81	21.24	10.54	SS
700.	2.261	6	1.0	1.0	10000.0	7.81	24.46	11.37	SS
800.	1.905	6	1.0	1.0	10000.0	7.81	27.63	12.40	SS
900.	1.629	6	1.0	1.0	10000.0	7.81	30.78	13.39	SS
1000.	1.424	6	1.0	1.0	10000.0	7.81	33.88	14.17	SS
1100.	1.251	6	1.0	1.0	10000.0	7.81	36.96	15.03	SS
1200.	1.111	6	1.0	1.0	10000.0	7.81	40.01	15.86	SS
1300.	0.9938	6	1.0	1.0	10000.0	7.81	43.04	16.67	SS
1400.	0.8958	6	1.0	1.0	10000.0	7.81	46.05	17.45	SS
1500.	0.8126	6	1.0	1.0	10000.0	7.81	49.03	18.22	SS
1600.	0.7414	6	1.0	1.0	10000.0	7.81	51.99	18.97	SS
1700.	0.6798	6	1.0	1.0	10000.0	7.81	54.94	19.70	SS
1800.	0.6262	6	1.0	1.0	10000.0	7.81	57.87	20.41	SS
1900.	0.5792	6	1.0	1.0	10000.0	7.81	60.78	21.11	SS
2000.	0.5414	6	1.0	1.0	10000.0	7.81	63.68	21.63	SS
2100.	0.5061	6	1.0	1.0	10000.0	7.81	66.56	22.21	SS
2200.	0.4745	6	1.0	1.0	10000.0	7.81	69.42	22.78	SS
2300.	0.4460	6	1.0	1.0	10000.0	7.81	72.28	23.34	SS
2400.	0.4204	6	1.0	1.0	10000.0	7.81	75.12	23.89	SS

2500.	0.3972	6	1.0	1.0	10000.0	7.81	77.95	24.42	SS
2600.	0.3760	6	1.0	1.0	10000.0	7.81	80.76	24.95	SS
2700.	0.3567	6	1.0	1.0	10000.0	7.81	83.57	25.47	SS
2800.	0.3390	6	1.0	1.0	10000.0	7.81	86.37	25.98	SS
2900.	0.3227	6	1.0	1.0	10000.0	7.81	89.15	26.48	SS
3000.	0.3077	6	1.0	1.0	10000.0	7.81	91.92	26.98	SS
3500.	0.2506	6	1.0	1.0	10000.0	7.81	105.65	28.98	SS
4000.	0.2097	6	1.0	1.0	10000.0	7.81	119.17	30.84	SS
4500.	0.1792	6	1.0	1.0	10000.0	7.81	132.50	32.57	SS
5000.	0.1556	6	1.0	1.0	10000.0	7.81	145.67	34.21	SS
5500.	0.1369	6	1.0	1.0	10000.0	7.81	158.69	35.76	SS
6000.	0.1219	6	1.0	1.0	10000.0	7.81	171.58	37.23	SS
6500.	0.1094	6	1.0	1.0	10000.0	7.81	184.34	38.64	SS
7000.	0.9908E-01	6	1.0	1.0	10000.0	7.81	196.99	40.00	SS
7500.	0.9062E-01	6	1.0	1.0	10000.0	7.81	209.54	41.16	SS
8000.	0.8335E-01	6	1.0	1.0	10000.0	7.81	221.98	42.28	SS
8500.	0.7706E-01	6	1.0	1.0	10000.0	7.81	234.34	43.36	SS
9000.	0.7156E-01	6	1.0	1.0	10000.0	7.81	246.61	44.40	SS
9500.	0.6673E-01	6	1.0	1.0	10000.0	7.81	258.79	45.41	SS
10000.	0.6244E-01	6	1.0	1.0	10000.0	7.81	270.90	46.38	SS
15000.	0.3695E-01	6	1.0	1.0	10000.0	7.81	388.43	54.88	SS
20000.	0.2613E-01	6	1.0	1.0	10000.0	7.81	500.95	60.29	SS
25000.	0.1998E-01	6	1.0	1.0	10000.0	7.81	609.75	64.86	SS
30000.	0.1605E-01	6	1.0	1.0	10000.0	7.81	715.59	68.84	SS
40000.	0.1155E-01	6	1.0	1.0	10000.0	7.81	920.22	74.49	SS
50000.	0.8949E-02	6	1.0	1.0	10000.0	7.81	1117.42	79.19	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

178.	6.387	6	1.0	1.0	10000.0	7.81	6.98	4.83	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** REGULATORY (Default) ***
PERFORMING CAVITY CALCULATIONS
WITH ORIGINAL SCREEN CAVITY MODEL
(BRODE, 1988)
****

*** CAVITY CALCULATION - 1 ***			*** CAVITY CALCULATION - 2 ***		
CONC (UG/M**3)	=	0.000	CONC (UG/M**3)	=	0.000
CRIT WS @10M (M/S)	=	99.99	CRIT WS @10M (M/S)	=	99.99
CRIT WS @ HS (M/S)	=	99.99	CRIT WS @ HS (M/S)	=	99.99
DILUTION WS (M/S)	=	99.99	DILUTION WS (M/S)	=	99.99
CAVITY HT (M)	=	4.88	CAVITY HT (M)	=	4.88
CAVITY LENGTH (M)	=	29.43	CAVITY LENGTH (M)	=	25.86
ALONGWIND DIM (M)	=	60.96	ALONGWIND DIM (M)	=	121.92

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

****
END OF CAVITY CALCULATIONS
****

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	6.387	178.	0.

Screen3 for Windows [New]

File Edit Windows Help

Output Text

Summary | Auto-Distances | Discrete | Complex | Cavity

Maximum Concentrations

Calculation Procedure	Distance To Max.	Maximum 1-Hr Conc	Maximum 3-Hr Conc	Maximum 8-Hr Conc	Maximum 24-Hr Conc	Maximum Ann Conc
	(m)	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)
Simple Ter	178.00	6.387390	5.748651	4.471173	2.554956	0.510991

Note: Distance to Max is cavity length and Terrain Height is cavity height for cavity concentions. Scalars for 3-Hr, 8-Hr, 24-Hr and Annual periods can be changed (see File|Preferences...).

View Output File

ANALYTICAL REPORT

Lab Number:	L1313216
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	John Eichler
Phone:	(631) 589-6353
Project Name:	BAE-GREENLAWN
Project Number:	BAE 1102
Report Date:	07/22/13

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: BAE-GREENLAWN
Project Number: BAE 1102

Lab Number: L1313216
Report Date: 07/22/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1313216-01	BLOWER 3A	5 CUBA HILL RD., GREENLAWN, NY	07/12/13 12:09
L1313216-02	BLOWER 3B	5 CUBA HILL RD., GREENLAWN, NY	07/12/13 12:01
L1313216-03	BLOWER 3C	5 CUBA HILL RD., GREENLAWN, NY	07/12/13 11:51

Project Name: BAE-GREENLAWN **Lab Number:** L1313216
Project Number: BAE 1102 **Report Date:** 07/22/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	BAE-GREENLAWN	**Lab Number:**	L1313216
Project Number:	BAE 1102	**Report Date:**	07/22/13

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on July 12, 2013. The canister certification results are provided as an addendum.

Samples L1313216-01 through -03: Prior to sample analysis, the canisters were pressurized with UHP Nitrogen due to canister size. The pressurization resulted in a dilution of the samples. The reporting limits have been elevated accordingly.

Sample L1313216-01 has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

Sample L1313216-01 results for Propylene should be considered estimated due to co-elution with a non-target peak.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative Date: 07/22/13

AIR

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-01 D
Client ID: BLOWER 3A
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 07/18/13 01:21
Analyst: MB

Date Collected: 07/12/13 12:09
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Propylene	105	72.7	--	181	125	--		145.4
Dichlorodifluoromethane	ND	29.1	--	ND	144	--		145.4
Chloromethane	ND	29.1	--	ND	60.1	--		145.4
Freon-114	ND	29.1	--	ND	203	--		145.4
Vinyl chloride	ND	29.1	--	ND	74.4	--		145.4
1,3-Butadiene	ND	29.1	--	ND	64.4	--		145.4
Bromomethane	ND	29.1	--	ND	113	--		145.4
Chloroethane	ND	29.1	--	ND	76.8	--		145.4
Ethanol	ND	364	--	ND	686	--		145.4
Vinyl bromide	ND	29.1	--	ND	127	--		145.4
Acetone	ND	145	--	ND	344	--		145.4
Trichlorofluoromethane	ND	29.1	--	ND	164	--		145.4
Isopropanol	ND	72.7	--	ND	179	--		145.4
1,1-Dichloroethene	ND	29.1	--	ND	115	--		145.4
Methylene chloride	ND	145	--	ND	504	--		145.4
3-Chloropropene	ND	29.1	--	ND	91.1	--		145.4
Carbon disulfide	ND	29.1	--	ND	90.6	--		145.4
Freon-113	ND	29.1	--	ND	223	--		145.4
trans-1,2-Dichloroethene	ND	29.1	--	ND	115	--		145.4
1,1-Dichloroethane	ND	29.1	--	ND	118	--		145.4
Methyl tert butyl ether	ND	29.1	--	ND	105	--		145.4
Vinyl acetate	ND	29.1	--	ND	102	--		145.4
2-Butanone	ND	29.1	--	ND	85.8	--		145.4
cis-1,2-Dichloroethene	53.1	29.1	--	211	115	--		145.4

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-01 D
Client ID: BLOWER 3A
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Date Collected: 07/12/13 12:09
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	72.7	--	ND	262	--		145.4
Chloroform	ND	29.1	--	ND	142	--		145.4
Tetrahydrofuran	ND	29.1	--	ND	85.8	--		145.4
1,2-Dichloroethane	ND	29.1	--	ND	118	--		145.4
n-Hexane	ND	29.1	--	ND	103	--		145.4
1,1,1-Trichloroethane	77.5	29.1	--	423	159	--		145.4
Benzene	ND	29.1	--	ND	93.0	--		145.4
Carbon tetrachloride	ND	29.1	--	ND	183	--		145.4
Cyclohexane	ND	29.1	--	ND	100	--		145.4
1,2-Dichloropropane	ND	29.1	--	ND	134	--		145.4
Bromodichloromethane	ND	29.1	--	ND	195	--		145.4
1,4-Dioxane	ND	29.1	--	ND	105	--		145.4
Trichloroethene	82.6	29.1	--	444	156	--		145.4
2,2,4-Trimethylpentane	ND	29.1	--	ND	136	--		145.4
Heptane	ND	29.1	--	ND	119	--		145.4
cis-1,3-Dichloropropene	ND	29.1	--	ND	132	--		145.4
4-Methyl-2-pentanone	ND	29.1	--	ND	119	--		145.4
trans-1,3-Dichloropropene	ND	29.1	--	ND	132	--		145.4
1,1,2-Trichloroethane	ND	29.1	--	ND	159	--		145.4
Toluene	ND	29.1	--	ND	110	--		145.4
2-Hexanone	ND	29.1	--	ND	119	--		145.4
Dibromochloromethane	ND	29.1	--	ND	248	--		145.4
1,2-Dibromoethane	ND	29.1	--	ND	224	--		145.4
Tetrachloroethene	9520	29.1	--	64600	197	--		145.4
Chlorobenzene	ND	29.1	--	ND	134	--		145.4
Ethylbenzene	ND	29.1	--	ND	126	--		145.4
p/m-Xylene	ND	58.2	--	ND	253	--		145.4
Bromoform	ND	29.1	--	ND	301	--		145.4

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-01 D
Client ID: BLOWER 3A
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Date Collected: 07/12/13 12:09
Date Received: 07/15/13
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	29.1	--	ND	124	--		145.4
1,1,2,2-Tetrachloroethane	ND	29.1	--	ND	200	--		145.4
o-Xylene	ND	29.1	--	ND	126	--		145.4
4-Ethyltoluene	ND	29.1	--	ND	143	--		145.4
1,3,5-Trimethylbenzene	ND	29.1	--	ND	143	--		145.4
1,2,4-Trimethylbenzene	ND	29.1	--	ND	143	--		145.4
Benzyl chloride	ND	29.1	--	ND	151	--		145.4
1,3-Dichlorobenzene	ND	29.1	--	ND	175	--		145.4
1,4-Dichlorobenzene	ND	29.1	--	ND	175	--		145.4
1,2-Dichlorobenzene	ND	29.1	--	ND	175	--		145.4
1,2,4-Trichlorobenzene	ND	29.1	--	ND	216	--		145.4
Hexachlorobutadiene	ND	29.1	--	ND	310	--		145.4

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	110		60-140
Bromochloromethane	117		60-140
chlorobenzene-d5	113		60-140

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-02 D
Client ID: BLOWER 3B
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 07/18/13 02:02
Analyst: MB

Date Collected: 07/12/13 12:01
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Propylene	ND	1.11	--	ND	1.91	--		2.224
Dichlorodifluoromethane	1.33	0.445	--	6.58	2.20	--		2.224
Chloromethane	ND	0.445	--	ND	0.919	--		2.224
Freon-114	ND	0.445	--	ND	3.11	--		2.224
Vinyl chloride	ND	0.445	--	ND	1.14	--		2.224
1,3-Butadiene	ND	0.445	--	ND	0.984	--		2.224
Bromomethane	ND	0.445	--	ND	1.73	--		2.224
Chloroethane	ND	0.445	--	ND	1.17	--		2.224
Ethanol	ND	5.56	--	ND	10.5	--		2.224
Vinyl bromide	ND	0.445	--	ND	1.95	--		2.224
Acetone	ND	2.22	--	ND	5.27	--		2.224
Trichlorofluoromethane	8.05	0.445	--	45.2	2.50	--		2.224
Isopropanol	1.40	1.11	--	3.44	2.73	--		2.224
1,1-Dichloroethene	21.3	0.445	--	84.5	1.76	--		2.224
Methylene chloride	ND	2.22	--	ND	7.71	--		2.224
3-Chloropropene	ND	0.445	--	ND	1.39	--		2.224
Carbon disulfide	ND	0.445	--	ND	1.39	--		2.224
Freon-113	0.620	0.445	--	4.75	3.41	--		2.224
trans-1,2-Dichloroethene	2.75	0.445	--	10.9	1.76	--		2.224
1,1-Dichloroethane	68.9	0.445	--	279	1.80	--		2.224
Methyl tert butyl ether	ND	0.445	--	ND	1.60	--		2.224
Vinyl acetate	ND	0.445	--	ND	1.57	--		2.224
2-Butanone	ND	0.445	--	ND	1.31	--		2.224
cis-1,2-Dichloroethene	40.1	0.445	--	159	1.76	--		2.224

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-02 D
Client ID: BLOWER 3B
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Date Collected: 07/12/13 12:01
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	1.11	--	ND	4.00	--		2.224
Chloroform	ND	0.445	--	ND	2.17	--		2.224
Tetrahydrofuran	1.05	0.445	--	3.10	1.31	--		2.224
1,2-Dichloroethane	ND	0.445	--	ND	1.80	--		2.224
n-Hexane	ND	0.445	--	ND	1.57	--		2.224
1,1,1-Trichloroethane	14.3	0.445	--	78.0	2.43	--		2.224
Benzene	ND	0.445	--	ND	1.42	--		2.224
Carbon tetrachloride	ND	0.445	--	ND	2.80	--		2.224
Cyclohexane	ND	0.445	--	ND	1.53	--		2.224
1,2-Dichloropropane	ND	0.445	--	ND	2.06	--		2.224
Bromodichloromethane	ND	0.445	--	ND	2.98	--		2.224
1,4-Dioxane	ND	0.445	--	ND	1.60	--		2.224
Trichloroethene	ND	0.445	--	ND	2.39	--		2.224
2,2,4-Trimethylpentane	ND	0.445	--	ND	2.08	--		2.224
Heptane	ND	0.445	--	ND	1.82	--		2.224
cis-1,3-Dichloropropene	ND	0.445	--	ND	2.02	--		2.224
4-Methyl-2-pentanone	ND	0.445	--	ND	1.82	--		2.224
trans-1,3-Dichloropropene	ND	0.445	--	ND	2.02	--		2.224
1,1,2-Trichloroethane	ND	0.445	--	ND	2.43	--		2.224
Toluene	ND	0.445	--	ND	1.68	--		2.224
2-Hexanone	ND	0.445	--	ND	1.82	--		2.224
Dibromochloromethane	ND	0.445	--	ND	3.79	--		2.224
1,2-Dibromoethane	ND	0.445	--	ND	3.42	--		2.224
Tetrachloroethene	ND	0.445	--	ND	3.02	--		2.224
Chlorobenzene	ND	0.445	--	ND	2.05	--		2.224
Ethylbenzene	ND	0.445	--	ND	1.93	--		2.224
p/m-Xylene	ND	0.890	--	ND	3.87	--		2.224
Bromoform	ND	0.445	--	ND	4.60	--		2.224

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-02 D
Client ID: BLOWER 3B
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Date Collected: 07/12/13 12:01
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	0.445	--	ND	1.89	--		2.224
1,1,2,2-Tetrachloroethane	ND	0.445	--	ND	3.06	--		2.224
o-Xylene	ND	0.445	--	ND	1.93	--		2.224
4-Ethyltoluene	ND	0.445	--	ND	2.19	--		2.224
1,3,5-Trimethylbenzene	ND	0.445	--	ND	2.19	--		2.224
1,2,4-Trimethylbenzene	ND	0.445	--	ND	2.19	--		2.224
Benzyl chloride	ND	0.445	--	ND	2.30	--		2.224
1,3-Dichlorobenzene	ND	0.445	--	ND	2.68	--		2.224
1,4-Dichlorobenzene	ND	0.445	--	ND	2.68	--		2.224
1,2-Dichlorobenzene	ND	0.445	--	ND	2.68	--		2.224
1,2,4-Trichlorobenzene	ND	0.445	--	ND	3.30	--		2.224
Hexachlorobutadiene	ND	0.445	--	ND	4.75	--		2.224

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	107		60-140
Bromochloromethane	114		60-140
chlorobenzene-d5	111		60-140

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-03 D
Client ID: BLOWER 3C
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 07/18/13 02:34
Analyst: MB

Date Collected: 07/12/13 11:51
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Propylene	ND	1.12	--	ND	1.93	--		2.233
Dichlorodifluoromethane	1.31	0.447	--	6.48	2.21	--		2.233
Chloromethane	ND	0.447	--	ND	0.923	--		2.233
Freon-114	ND	0.447	--	ND	3.12	--		2.233
Vinyl chloride	ND	0.447	--	ND	1.14	--		2.233
1,3-Butadiene	ND	0.447	--	ND	0.989	--		2.233
Bromomethane	ND	0.447	--	ND	1.74	--		2.233
Chloroethane	ND	0.447	--	ND	1.18	--		2.233
Ethanol	ND	5.58	--	ND	10.5	--		2.233
Vinyl bromide	ND	0.447	--	ND	1.95	--		2.233
Acetone	2.34	2.23	--	5.56	5.30	--		2.233
Trichlorofluoromethane	0.480	0.447	--	2.70	2.51	--		2.233
Isopropanol	ND	1.12	--	ND	2.75	--		2.233
1,1-Dichloroethene	ND	0.447	--	ND	1.77	--		2.233
Methylene chloride	ND	2.23	--	ND	7.75	--		2.233
3-Chloropropene	ND	0.447	--	ND	1.40	--		2.233
Carbon disulfide	ND	0.447	--	ND	1.39	--		2.233
Freon-113	ND	0.447	--	ND	3.43	--		2.233
trans-1,2-Dichloroethene	ND	0.447	--	ND	1.77	--		2.233
1,1-Dichloroethane	ND	0.447	--	ND	1.81	--		2.233
Methyl tert butyl ether	ND	0.447	--	ND	1.61	--		2.233
Vinyl acetate	ND	0.447	--	ND	1.57	--		2.233
2-Butanone	ND	0.447	--	ND	1.32	--		2.233
cis-1,2-Dichloroethene	ND	0.447	--	ND	1.77	--		2.233

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-03 D
Client ID: BLOWER 3C
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Date Collected: 07/12/13 11:51
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	1.12	--	ND	4.04	--		2.233
Chloroform	ND	0.447	--	ND	2.18	--		2.233
Tetrahydrofuran	ND	0.447	--	ND	1.32	--		2.233
1,2-Dichloroethane	ND	0.447	--	ND	1.81	--		2.233
n-Hexane	ND	0.447	--	ND	1.58	--		2.233
1,1,1-Trichloroethane	ND	0.447	--	ND	2.44	--		2.233
Benzene	ND	0.447	--	ND	1.43	--		2.233
Carbon tetrachloride	ND	0.447	--	ND	2.81	--		2.233
Cyclohexane	ND	0.447	--	ND	1.54	--		2.233
1,2-Dichloropropane	ND	0.447	--	ND	2.07	--		2.233
Bromodichloromethane	ND	0.447	--	ND	2.99	--		2.233
1,4-Dioxane	ND	0.447	--	ND	1.61	--		2.233
Trichloroethene	ND	0.447	--	ND	2.40	--		2.233
2,2,4-Trimethylpentane	ND	0.447	--	ND	2.09	--		2.233
Heptane	ND	0.447	--	ND	1.83	--		2.233
cis-1,3-Dichloropropene	ND	0.447	--	ND	2.03	--		2.233
4-Methyl-2-pentanone	ND	0.447	--	ND	1.83	--		2.233
trans-1,3-Dichloropropene	ND	0.447	--	ND	2.03	--		2.233
1,1,2-Trichloroethane	ND	0.447	--	ND	2.44	--		2.233
Toluene	ND	0.447	--	ND	1.68	--		2.233
2-Hexanone	ND	0.447	--	ND	1.83	--		2.233
Dibromochloromethane	ND	0.447	--	ND	3.81	--		2.233
1,2-Dibromoethane	ND	0.447	--	ND	3.44	--		2.233
Tetrachloroethene	ND	0.447	--	ND	3.03	--		2.233
Chlorobenzene	ND	0.447	--	ND	2.06	--		2.233
Ethylbenzene	ND	0.447	--	ND	1.94	--		2.233
p/m-Xylene	ND	0.893	--	ND	3.88	--		2.233
Bromoform	ND	0.447	--	ND	4.62	--		2.233

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

SAMPLE RESULTS

Lab ID: L1313216-03 D
Client ID: BLOWER 3C
Sample Location: 5 CUBA HILL RD., GREENLAWN, NY
Date Collected: 07/12/13 11:51
Date Received: 07/15/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Styrene	ND	0.447	--	ND	1.90	--		2.233
1,1,2,2-Tetrachloroethane	ND	0.447	--	ND	3.07	--		2.233
o-Xylene	ND	0.447	--	ND	1.94	--		2.233
4-Ethyltoluene	ND	0.447	--	ND	2.20	--		2.233
1,3,5-Trimethylbenzene	ND	0.447	--	ND	2.20	--		2.233
1,2,4-Trimethylbenzene	ND	0.447	--	ND	2.20	--		2.233
Benzyl chloride	ND	0.447	--	ND	2.31	--		2.233
1,3-Dichlorobenzene	ND	0.447	--	ND	2.69	--		2.233
1,4-Dichlorobenzene	ND	0.447	--	ND	2.69	--		2.233
1,2-Dichlorobenzene	ND	0.447	--	ND	2.69	--		2.233
1,2,4-Trichlorobenzene	ND	0.447	--	ND	3.32	--		2.233
Hexachlorobutadiene	ND	0.447	--	ND	4.77	--		2.233

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	98		60-140
Bromochloromethane	108		60-140
chlorobenzene-d5	101		60-140

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/17/13 14:39

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-03 Batch: WG622360-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1

Project Name: BAE-GREENLAWN **Lab Number:** L1313216

Project Number: BAE 1102 **Report Date:** 07/22/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/17/13 14:39

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-03 Batch: WG622360-4								
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: BAE-GREENLAWN
Project Number: BAE 1102
Lab Number: L1313216
Report Date: 07/22/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/17/13 14:39

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-03 Batch: WG622360-4								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: BAE-GREENLAWN

Project Number: BAE 1102

Lab Number: L1313216

Report Date: 07/22/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 Batch: WG622360-3								
Chlorodifluoromethane	84		-		70-130	-		
Propylene	88		-		70-130	-		
Dichlorodifluoromethane	106		-		70-130	-		
Chloromethane	82		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	97		-		70-130	-		
Methanol	79		-		70-130	-		
Vinyl chloride	86		-		70-130	-		
1,3-Butadiene	86		-		70-130	-		
Butane	77		-		70-130	-		
Bromomethane	92		-		70-130	-		
Chloroethane	82		-		70-130	-		
Ethyl Alcohol	84		-		70-130	-		
Dichlorofluoromethane	89		-		70-130	-		
Vinyl bromide	95		-		70-130	-		
Acrolein	71		-		70-130	-		
Acetone	108		-		70-130	-		
Acetonitrile	81		-		70-130	-		
Trichlorofluoromethane	123		-		70-130	-		
iso-Propyl Alcohol	96		-		70-130	-		
Acrylonitrile	79		-		70-130	-		
Pentane	78		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BAE-GREENLAWN

Project Number: BAE 1102

Lab Number: L1313216

Report Date: 07/22/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 Batch: WG622360-3								
Ethyl ether	78		-		70-130	-		
1,1-Dichloroethene	101		-		70-130	-		
tert-Butyl Alcohol	90		-		70-130	-		
Methylene chloride	97		-		70-130	-		
3-Chloropropene	118		-		70-130	-		
Carbon disulfide	90		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	106		-		70-130	-		
trans-1,2-Dichloroethene	86		-		70-130	-		
1,1-Dichloroethane	95		-		70-130	-		
Methyl tert butyl ether	91		-		70-130	-		
Vinyl acetate	97		-		70-130	-		
2-Butanone	91		-		70-130	-		
cis-1,2-Dichloroethene	110		-		70-130	-		
Ethyl Acetate	86		-		70-130	-		
Chloroform	114		-		70-130	-		
Tetrahydrofuran	75		-		70-130	-		
2,2-Dichloropropane	100		-		70-130	-		
1,2-Dichloroethane	115		-		70-130	-		
n-Hexane	94		-		70-130	-		
Isopropyl Ether	88		-		70-130	-		
Ethyl-Tert-Butyl-Ether	94		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BAE-GREENLAWN

Project Number: BAE 1102

Lab Number: L1313216

Report Date: 07/22/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 Batch: WG622360-3								
1,1,1-Trichloroethane	116		-		70-130	-		
1,1-Dichloropropene	95		-		70-130	-		
Benzene	85		-		70-130	-		
Carbon tetrachloride	120		-		70-130	-		
Cyclohexane	80		-		70-130	-		
Tertiary-Amyl Methyl Ether	82		-		70-130	-		
Dibromomethane	98		-		70-130	-		
1,2-Dichloropropane	86		-		70-130	-		
Bromodichloromethane	105		-		70-130	-		
1,4-Dioxane	88		-		70-130	-		
Trichloroethene	101		-		70-130	-		
2,2,4-Trimethylpentane	86		-		70-130	-		
Methyl methacrylate	116		-		70-130	-		
Heptane	95		-		70-130	-		
cis-1,3-Dichloropropene	95		-		70-130	-		
4-Methyl-2-pentanone	88		-		70-130	-		
trans-1,3-Dichloropropene	87		-		70-130	-		
1,1,2-Trichloroethane	98		-		70-130	-		
Toluene	80		-		70-130	-		
1,3-Dichloropropane	78		-		70-130	-		
2-Hexanone	75		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BAE-GREENLAWN

Project Number: BAE 1102

Lab Number: L1313216

Report Date: 07/22/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 Batch: WG622360-3								
Dibromochloromethane	94		-		70-130	-		
1,2-Dibromoethane	96		-		70-130	-		
Octane	70		-		70-130	-		
Tetrachloroethene	94		-		70-130	-		
1,1,1,2-Tetrachloroethane	92		-		70-130	-		
Chlorobenzene	91		-		70-130	-		
Ethylbenzene	86		-		70-130	-		
p/m-Xylene	90		-		70-130	-		
Bromoform	91		-		70-130	-		
Styrene	84		-		70-130	-		
1,1,2,2-Tetrachloroethane	89		-		70-130	-		
o-Xylene	93		-		70-130	-		
1,2,3-Trichloropropane	80		-		70-130	-		
Nonane (C9)	81		-		70-130	-		
Isopropylbenzene	88		-		70-130	-		
Bromobenzene	83		-		70-130	-		
o-Chlorotoluene	88		-		70-130	-		
n-Propylbenzene	86		-		70-130	-		
p-Chlorotoluene	88		-		70-130	-		
4-Ethyltoluene	83		-		70-130	-		
1,3,5-Trimethylbenzene	94		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BAE-GREENLAWN

Project Number: BAE 1102

Lab Number: L1313216

Report Date: 07/22/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 Batch: WG622360-3								
tert-Butylbenzene	92		-		70-130	-		
1,2,4-Trimethylbenzene	99		-		70-130	-		
Decane (C10)	81		-		70-130	-		
Benzyl chloride	72		-		70-130	-		
1,3-Dichlorobenzene	96		-		70-130	-		
1,4-Dichlorobenzene	96		-		70-130	-		
sec-Butylbenzene	88		-		70-130	-		
p-Isopropyltoluene	87		-		70-130	-		
1,2-Dichlorobenzene	96		-		70-130	-		
n-Butylbenzene	93		-		70-130	-		
1,2-Dibromo-3-chloropropane	99		-		70-130	-		
Undecane	87		-		70-130	-		
1,2,4-Trichlorobenzene	101		-		70-130	-		
Naphthalene	94		-		70-130	-		
1,2,3-Trichlorobenzene	94		-		70-130	-		
Hexachlorobutadiene	101		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: BAE-GREENLAWN
Project Number: BAE 1102

Lab Number: L1313216
Report Date: 07/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG622360-5 QC Sample: L1313177-01 Client ID: DUP Sample						
Propylene	117	106	ppbV	10		25
Dichlorodifluoromethane	0.734	0.678	ppbV	8		25
Chloromethane	ND	ND	ppbV	NC		25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	12.7	12.3	ppbV	3		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethyl Alcohol	13.9	14.3	ppbV	3		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	323	301	ppbV	7		25
Trichlorofluoromethane	ND	ND	ppbV	NC		25
iso-Propyl Alcohol	2.20	1.79	ppbV	21		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	1.42	1.43	ppbV	1		25
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: BAE-GREENLAWN
Project Number: BAE 1102

Lab Number: L1313216
Report Date: 07/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG622360-5 QC Sample: L1313177-01 Client ID: DUP Sample					
1,1-Dichloroethane	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
Vinyl acetate	ND	ND	ppbV	NC	25
2-Butanone	7.79	7.84	ppbV	1	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
Ethyl Acetate	ND	ND	ppbV	NC	25
Chloroform	20.5	19.6	ppbV	4	25
Tetrahydrofuran	ND	ND	ppbV	NC	25
1,2-Dichloroethane	ND	ND	ppbV	NC	25
n-Hexane	19.9	20.0	ppbV	1	25
1,1,1-Trichloroethane	ND	ND	ppbV	NC	25
Benzene	8.02	8.18	ppbV	2	25
Carbon tetrachloride	ND	ND	ppbV	NC	25
Cyclohexane	3.84	3.81	ppbV	1	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
Bromodichloromethane	ND	ND	ppbV	NC	25
1,4-Dioxane	ND	ND	ppbV	NC	25
Trichloroethene	ND	ND	ppbV	NC	25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: BAE-GREENLAWN
Project Number: BAE 1102

Lab Number: L1313216
Report Date: 07/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG622360-5 QC Sample: L1313177-01 Client ID: DUP Sample					
Heptane	13.0	12.5	ppbV	4	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
4-Methyl-2-pentanone	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
Toluene	28.4	29.6	ppbV	4	25
2-Hexanone	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
Tetrachloroethene	ND	ND	ppbV	NC	25
Chlorobenzene	ND	ND	ppbV	NC	25
Ethylbenzene	9.20	9.50	ppbV	3	25
p/m-Xylene	34.9	35.6	ppbV	2	25
Bromoform	ND	ND	ppbV	NC	25
Styrene	0.533	0.544	ppbV	2	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
o-Xylene	12.3	12.6	ppbV	2	25
4-Ethyltoluene	4.20	4.38	ppbV	4	25
1,3,5-Trimethylbenzene	4.00	4.00	ppbV	0	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: BAE-GREENLAWN
Project Number: BAE 1102

Lab Number: L1313216
Report Date: 07/22/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG622360-5 QC Sample: L1313177-01 Client ID: DUP Sample					
1,2,4-Trimethylbenzene	15.0	15.1	ppbV	1	25
Benzyl chloride	ND	ND	ppbV	NC	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC	25
Hexachlorobutadiene	ND	ND	ppbV	NC	25

Project Name: BAE-GREENLAWN

Lab Number: L1313216

Project Number: BAE 1102

Report Date: 07/22/13

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1313216-01	BLOWER 3A	776	1.0L Can	07/12/13	90641	L1312473-02	Pass	-29.3	-1.0	-	-	-	-
L1313216-02	BLOWER 3B	823	1.0L Can	07/12/13	90641	L1312473-02	Pass	-28.8	-1.1	-	-	-	-
L1313216-03	BLOWER 3C	721	1.0L Can	07/12/13	90641	L1312473-02	Pass	-29.3	-1.2	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 07/05/13 17:25
Analyst: RY

Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.200	--	ND	0.361	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:

Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:
Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:
Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:
Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	72		60-140
Bromochloromethane	71		60-140
chlorobenzene-d5	83		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/05/13 17:25
Analyst: RY

Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.050	--	ND	0.247	--		1
Chloromethane	ND	0.500	--	ND	1.03	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	2.00	--	ND	4.75	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.020	--	ND	0.072	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:
Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.020	--	ND	0.092	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.500	--	ND	2.46	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.500	--	ND	2.74	--		1
p-Isopropyltoluene	ND	0.500	--	ND	2.74	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.500	--	ND	2.74	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1312473
Report Date: 07/22/13

Air Canister Certification Results

Lab ID: L1312473-02
Client ID: CAN 841 SHELF 7
Sample Location:
Date Collected: 07/02/13 15:54
Date Received: 07/03/13
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	75		60-140
bromochloromethane	72		60-140
chlorobenzene-d5	83		60-140

Project Name: BAE-GREENLAWN
Project Number: BAE 1102

Lab Number: L1313216
Report Date: 07/22/13

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information **Custody Seal**
Cooler
N/A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1313216-01A	Canister - 1 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1313216-02A	Canister - 1 Liter	N/A	N/A		Y	Absent	TO15-LL(30)
L1313216-03A	Canister - 1 Liter	N/A	N/A		Y	Absent	TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	BAE-GREENLAWN	**Lab Number:**	L1313216
Project Number:	BAE 1102	**Report Date:**	07/22/13

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported

Report Format: Data Usability Report

Project Name:	BAE-GREENLAWN	**Lab Number:**	L1313216
Project Number:	BAE 1102	**Report Date:**	07/22/13

Data Qualifiers

due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certificate/Approval Program Summary

Last revised August 3, 2012 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable). Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Titanium, Vanadium, Zinc, Total Organic Carbon, Corrosivity, TCLP 1311, SPLP 1312. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020A, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

Solid & Chemical Materials (Inorganic Parameters: EPA 1311, 3050B, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

Biological Tissue (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

Air & Emissions (EPA TO-15.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 180.1, 1631E, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B, 3020A, . Organic Parameters: EPA 3510C, 3630C, 3640A, 3660B, 8081B, 8082A, 8270C, 8270D, 8015D.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 1311, 3050B, 3051A, 6020A, 7471B, 9040B, 9045C. Organic Parameters: SW-846 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8015D, 8082A, 8081B.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3020A, SM2320B, SM2540D, 2540G, 4500H-B, EPA 180.1, 1631E, SW-846 7470A, 9040C, 6020A, 9050A. Organic Parameters: SW-846 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D)

Solid & Chemical Materials (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 6020A, 7471B, 7474, 9040B, 9040C, 9045C, 9045D, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8081B, 8082A, 8270C, 8270D, 8015D.)

Atmospheric Organic Parameters (EPA 3C, TO-15, TO-10A, TO-13A-SIM.)

Biological Tissue (Inorganic Parameters: SW-846 6020A. Organic Parameters: SW-846 8270C, 8270D, 3510C, 3570, 3610C, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, 6020A, 1631E, 7470A, 9050A, EPA 180.1, 3020A. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 3510C.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 6020A, 7471B, 7474, 9040C, 9045D. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 1311, 3050B, 3580A, 3570, 3051A.)

Air & Emissions (EPA TO-15, TO-10A.)

Pennsylvania Certificate/Lab ID: 68-02089 ***NELAP Accredited***

Non-Potable Water (Inorganic Parameters: 1312, 1631E, 180.1, 3020A, 6020A, 7470A, 9040B, 9050A, 2320B, 2540D, 2540G, SM4500H+-B. Organic Parameters: 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D .)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 3051A, 6020A, 7471B, 7474 9040B, 9045C, 9060. Organic Parameters: EPA3050B, 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8270D, 8081B, 8015D, 8082A.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via NJ-DEP.***

Refer to NJ-DEP Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID:460194. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters:EPA 3020A, 6020A, 245.7, 9040B. Organic Parameters: EPA 3510C, 3640A, 3660B, 3665A, 8270C, 8270D, 8082A, 8081B, 8015D.)

Solid & Chemical Materials (Inorganic Parameters: EPA 6020A,7470A,7471B,9040B,9045C,3050B,3051, 9060. Organic Parameters: EPA 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 3570, 8270C, 8270D, 8081B, 8082A, 8015D.)

Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 180.1, 1631E.)

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 7474, 9045C, 9050A, 9060. Organic Parameters: EPA 8081, 8082, 8015, 8270.)

U.S. Army Corps of Engineers

Department of Defense, L-A-B Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH, 8082A, 8081B, 8015D-SHC, 8015D.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH 8082A, 8081B, 8015D-SHC, 8015D.

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl. **TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.

Serial No:07221316:19

AIR ANALYSIS

PAGE 1 OF 1

CHAIN OF CUSTODY

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1313216

Client Information

Client: PW Grosser Consulting
Address: 630 Johnson Ave
Bohemia, NY 11716
Phone: (631) 589-6353
Fax: (631) 589-8705
Email: JohnE@PWGrosser.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: BAE - Greenlawn
Project Location: 5 Cuba Hill Road Greenlawn, NY
Project #: BAE 1102
Project Manager: John Eichler
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☒ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☒ EMAIL (standard pdf report)
☐ Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-14A by TO-15	TO-15	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
L1313216-1	BLOWER 3A	7/12/13	1209				SV	JE	1L	776			X						9 ppm PID
-2	BLOWER 3B	↓	1201				SV	JE	↓	813			X						0 PID
-3	BLOWER 3C	↓	1151				SV	JE	↓	721			X						0 PID

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type: CS

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:	Date/Time	Received By:	Date/Time:
	7/15/13 11:30		7/15/13 11:30
	7/15/13 19:10		7/15/13 19:10
	7/16/13 01:10		7/16/13 01:10
	7/16/13 04:00	Mansfield Lab	7/16/13 04:00