Technical Memorandum

EnviroTrac Engineering PE, PC

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Prepared for: ZWorldwide Enterprises, LLC

Project Title: Former Baron Blakeslee Property Site Number C152204

Project No.: 01.991448.00

Technical Memorandum

Subject: 2020 Annual Periodic Review Report and Certification

Sub-Slab Depressurization System Date: June 10, 2020

To: Robert Corcoran, PE; New York State Department of Environmental Conservation

From: Dale Konas, PE; EnviroTrac Engineering PE, PC

Copy to: Mr. Peter Zimiles, ZWorldwide Enterprises, LLC



Prepared by:

Dale Konas, PE, License No. 081035, Expiration Date 08/31/2020



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Section 1: Background

EnviroTrac Engineering, PE, PC (EnviroTrac) is submitting this 2020 Periodic Review Report (PRR) and Certification for the Former Baron Blakeslee Property, Site Number C152204, located at 86 Cleveland Avenue in Bay Shore, Suffolk County, New York 11706 (hereinafter referred to as the "Site").

The Site location is shown on Figure 1-1. The site is an approximately 1.84-acre area bounded by South 3rd Street to the north, a sand and gravel facility to the south, Cleveland Avenue to the east, and a construction materials recycling facility to the west (Figure 1-2). The property includes an approximately 47,000-square foot structure, comprising three interconnected buildings constructed of concrete block and corrugated steel on concrete slabs. At the time of the remedy implementation, the southern building was used by General Electric (GE) as an air conditioning appliance repair shop; the rest of the structure was vacant. The grounds consist of asphalt-paved parking and driveway areas with landscaped and limited vegetated areas occurring along the northern, eastern, and southern property boundaries. A chain link fence separates the abutting commercial and industrial properties to the west and south from the property.

The current owner of the Site is ZWorldwide Enterprises LLC, which acquired the property from GE in March 2017. The new owner's tenant is Long Island Tent and Party Rental, Inc. The Site investigation and remedy implementation were conducted by GE. Brown and Cadwell (BC), on behalf GE, implemented the remedy and provided operation and maintenance services. The Site remedy, described in the NYSDEC-approved Site Management Plan (SMP) dated February 2016, includes the soil cover, the soil vapor extraction (SVE) system, the sub-slab depressurization system (SSDS), as well as institutional controls (ICs). The soil cover, the SSDS and the ICs are intended to limit the exposure to the contamination remaining at the Site. The SVE system has since been removed from the Site, but was operated until VOC concentrations in the shallow, unsaturated soil under the buildings were reduced to levels that meet the 6 NYCRR Part 375-6 SCOs for Protection of Public Health - Restricted Residential use. The NYSDEC approved the shutdown of the SVE system on October 17, 2017. Soil sampling data collected from the beneath the slab in the southern warehouse in September, 2016 showed that the SVE was effective in decreasing levels of tetrachloroethylene. The SVE trailer was removed from the property and the SVE wells were abandoned according to NYSDEC protocols by BC. The SMP requires the documentation of the annual certification of the SSDS.

This report covers the reporting and certification of the following elements and time periods of the remedy:

- The SSDS from July 2019 –through June 2020.
 - BC operated the SSDS on behalf of GE until March of 2017. Following that, the operation of the SSDS was transferred to ZWorldwide Enterprises LLC. EnviroTrac currently monitors the SSDS on behalf of ZWorldwide Enterprises, LLC

The remaining reporting/certification requirements as set forth in the SMP have been transferred to ZWorldwide Enterprises LLC.



Section 2: SSDS

The SSDS is described in detail in the February 2016 FER provided by BC. The layout of the system is shown on Drawings 3 and 1A of the FER (Appendix A of this PRR). The objective of the system is to mitigate soil vapor intrusion into the onsite structure by creating a negative pressure underneath the floor slab of the structure. The SSDS consists of a total of 4 roof mounted Obar GBR 76 Compact Radial Blowers, 14 suction points (SP1-1 through SP1-6, SP2-1 through SP2-3, SP3-1 through SP3-3 and SP4-1 through SP4-2), 18 manual monitoring points identified on the as-built drawings as permanent test holes (PT-1 through PT-18) and 4 Radonaway Checkpoint IIA Mitigation System Alarms. EnviroTrac installed the alarms in May 2018 to replace the previous 4 remote monitoring points tied into the Vapor Guardian 5500 monitoring system. This remote monitoring system is no longer operating.

2.1 SSDS Status and Operations

During the period of the SSDS operation covered by this PRR (July 2019 to June 2020), the onsite structure was occupied by Long Island Tent and Party Rental, Inc. and utilized for the storage of party tents, tables, chairs, and other miscellaneous party rental items.

The SSDS was constructed in October-November 2015, the system start-up occurred in November 2015 – January 2016. Additional system adjustments were performed in February 2016. Following that, quarterly system inspections were performed starting with March 2016, with the exception of September 2016, when the operation of the system was suspended to allow for the completion of the soil sampling program. SSDS inspection data are shown in Appendix B. The following parameters were recorded:

- Air flow rate at suction pits
- · Vacuum at suction points
- Vacuum at monitoring points

Equipment used to obtain SSDS system performance data are as follows:

- SSDS system blower performance data were obtained from systeminstrumentation;
- SSDS riser system flow measurements were obtained using an anemometer (TSI Model VelociCalc 9545):
- SSDS riser vacuum data were obtained using a (0-40 inches water column) digital micromanometer (UEI Model EM201B); and
- All permanent test ports (PT) sub-slab vacuum data were obtained using a low range (0-40 inches water column) digital micromanometer (UEI Model EM201B).

Data are summarized in Table 2-1 (flow rates and vacuums at suction points) and 2-2 (vacuums at monitoring points).

2.2 SSDS Performance Evaluation

Vacuum levels at the monitoring points were recorded during one (1) event on June 9, 2020. No access issues were reported for the monitoring points.

2.2.1 SSDS Suction Points

The total extraction rate for the SSDS was stable on June 9, 2020, at approximately 345.51 acfm. The vacuum at the suction points for the points tributary to the blowers serving the southern warehouse (SP1-1



through 6) was between 1.410 and 1.529 in. w.c. The vacuum at the suction points for the points tributary to the blowers serving the main building (SP-2-1 through SP-2-3 and SP-3-1 through SP-3-3) was between approximately 9.381 and 16.30 in w.c. The vacuum at the suction points for the points tributary to the blowers serving the northern building (SP4-1 and -2) was between approximately 3.888 and 4.169 in w.c., These flow rates and vacuums indicate that the SSDS was operating as designed.

2.2.2 SSDS Monitoring Points

The sub-slab vacuums recorded in the monitoring points located in the southern warehouse (PT-1 through 6) were maintained at levels higher than the SMP criterion of 0.004 in w.c. The vacuums at the monitoring points in the main part of the building (PT-7 through 14) were also greater than 0.004 in w.c. In the north office building, the vacuums were also greater than 0.004 in w.c.

In summary, the SSDS system operated as designed as shown during the annual monitoring event that occurred on June 9, 2020, and maintained sub-slab vacuums levels higher than 0.004 in w.c.



Section 3: Certification

3.1 SSDS Certification

I certify that all of the following statements are true:

- The SSDS employed at this site was unchanged from the date the system was put in place November 2015 through the end of the period covered by this PRR (June 2020);
- Nothing has occurred that would impair the ability of the SSDS to protect the public health and environment during the period covered by this PRR (July 2019 to June 2020);
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for the SSDS during the period covered by this PRR (July 2019 to June 2020);
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program; and
- The information presented in this report is accurate and complete.

3.2 Signature

I certify that all information and statements in Sections 3.1 above are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Dale Konas, of EnviroTrac Engineering, PE, PC, 5 Old Dock Road, Yaphank, NY 11980, am certifying as ZWorldwide Enterprises, LLC, for the Site for the periods indicated above.

Dale Konas. PE

Dal C. Kr



TABLES



Table 2-1
Vacuum Monitoring Point Measurements
86 Cleveland Avenue, Bay Shore, NY

Vacuum Manitarina Daint					Vacuum Me	asurement					Vacuum Monitoring Point	Vacuum Measurement											
Vacuum Monitoring Point					inches o	f water					vacaum monitoring rount					inches o	of water						
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/2020	Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/2020		
PT-1	NA	NA	-0.063	-0.027	-0.029	-0.031	-0.052	-0.061	NA	-0.031	PT-11	-0.060	NA	-0.052	-0.045	-0.044	-0.05	-0.48	-0.062	NA	-0.047		
PT-2	-0.040	NA	-0.042	-0.020	-0.020	-0.020	-0.039	-0.044	NA	-0.277	PT-12	-0.015	NA	-0.368	-0.236	-0.222	-0.148	-0.098	-0.319	NA	-0.145		
PT-3	-0.030	NA	-0.127	-0.042	-0.040	-0.121	-0.145	-0.155	NA	-0.064	PT-13	-0.004	NA	-0.051	-0.046	-0.045	-0.126	0.114	NA	-0.094	-0.071		
PT-4	-0.060	-0.150	-0.382	-0.020	-0.020	-0.020	-0.121	-0.091	NA	-0.080	PT-14	-0.020	NA	-0.046	-0.105	-0.100	-0.096	-0.026	NA	-0.026	-0.014		
PT-5	-0.010	NA	-0.001	-0.064	-0.066	-0.036	-0.046	-0.087	NA	-0.409	PT-15	-0.100	NA	-0.015	-0.488	-0.400	-0.022	-0.014	NA	-0.019	-0.010		
PT-6	-0.030	NA	-0.007	-0.022	-0.028	-0.210	-0.193	-0.261	NA	-0.108	PT-16	-0.004	NA	-0.001	-0.717	-0.722	-0.02	-0.016	NA	-0.021	-0.010		
PT-7	-0.004	NA	-0.027	-0.017	-0.016	-0.018	-0.010	-0.024	NA	-0.013	PT-17	-0.005	NA	-0.043	-0.071	-0.071	-0.028	NA	NA	-0.044	-0.012		
PT-8	-0.005	NA	-0.523	-0.059	-0.044	-0.040	NA	NA	-0.036	-0.011	PT-18	-0.004	NA	-0.002	-0.230	-0.219	-0.026	-0.021	NA	-0.032	-0.009		
PT-9	-0.004	NA	-0.005	-0.022	-0.020	-0.127	NA	NA	-0.114	-0.024													
PT-10	-0.280	NA	-0.444	-0.114	-0.111	-0.768	-1.088	-0.415	NA	-0.139													

Notes:

PT - Test Point



Table 2-2 ADS Blower and Riser Pipe Vacuum and Air Flow Measurements 86 Cleveland Avenue, Bay shore, NY

				Vacuum Me										Vacuum Me										Air F	1					
ADS Blowers				vacuum ivie	easurement				Riser					vacuum ivie	asurement									AIF	·iow					
				inches o	of water									inches o	of water					cubic feet per miter										
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/9/2020	Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/2020	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/2020	
B-1	NA	NA	-2	-1.6	-1	-3	-1.8	-2.0	1-1	NA	NA	-1.875	-0.072	-0.673	-2.728	-1.371	-4.29	NA	-1.529	NA	NA	1.31	2.22	1.980	1.66	1.83	7.98	NA	2.52	
B-2	NA	NA	-12	-13	-11	-15	-12.5	-9.0	1-2	NA	NA	-1.821	-0.036	-0.612	-2.78	-1.687	-3.902	NA	-1.503	NA	NA	2.40	1.45	3.790	1.74	2.71	15.3	NA	2.19	
B-3	NA	NA	-10	-17.5	-9	-10	-10.5	-16.0	1-3	NA	NA	-1.837	-0.212	-0.547	-2.549	-1.647	-4.264	NA	-1.477	NA	NA	1.27	5.95	3.850	10.19	8.93	9.42	NA	7.50	
B-4	NA	NA	-4.2	-4.5	-4	-4	-4.2	-4.0	1-4	NA	NA	-1.76	-0.939	-0.513	-2.626	-1.6	-4.154	NA	-1.468	NA	NA	21.41	41.02	22.250	29.23	21.93	32.95	NA	20.70	
									1-5	NA	NA	-1.785	-0.744	-0.381	-2.546	-1.693	-3.998	NA	-1.410	NA	NA	20.03	65.16	45.240	40.7	28.36	39.67	NA	27.50	
									1-6	NA	NA	-1.822	-1.059	-0.558	-2.511	-1.617	-4.071	NA	-1.475	NA	NA	14.93	26.35	15.420	25.39	16.1	30.94	NA	19.60	
									2-1	NA	NA	-12.37	-14.390	-11.580	-15.38	-15.12	-15.13	NA	-9.536	NA	NA	10.06	21.43	10.010	17.07	17.38	23.75	NA	25.80	
									2-2	NA	NA	-12.26	-0.348	-11.530	-15.3	-15.03	-15.19	NA	-9.381	NA	NA	19.37	18.39	14.610	16.52	17.15	16.25	NA	28.40	
									2-3	NA	NA	-12.46	-14.410	-11.700	-16.42	-14.98	-15.8	NA	-9.672	NA	NA	16.55	27.36	24.420	21.47	16.39	25.08	NA	18.60	
									3-1	NA	NA	-10.49	-0.358	-9.384	-10.43	-12.31	NA	-20.82	-16.30	NA	NA	13.07	22.54	11.190	12.66	21.01	NA	25.64	25.40	
									3-2	NA	NA	-10.28	-0.475	-8.764	-10.22	-9.34	NA	-20.28	-15.41	NA	NA	25.26	65.54	40.490	27.08	26.12	NA	42.33	53.50	
									3-3	NA	NA	-10.30	-0.255	-8.898	-10.28	-10.49	NA	-20.43	-15.87	NA	NA	15.60	40.33	24.660	18.56	17.51	NA	33.82	37.40	
									4-1	NA	NA	NA	NA	-4.222	-4.113	-4.01	-4.429	NA	-4.169	NA	NA	NA	NA	22.47	21.26	20.39	19.91	NA	34.50	
									4-2	NA	NA	NA	NA	-4.016	-4.039	-3.981	-4.088	NA	-3.888	NA	NA	NA	NA	50.98	32.49	30.68	42.48	NA	41.90	

Notes:

B = Blower



FIGURES



TOPOGRAPHIC MAP

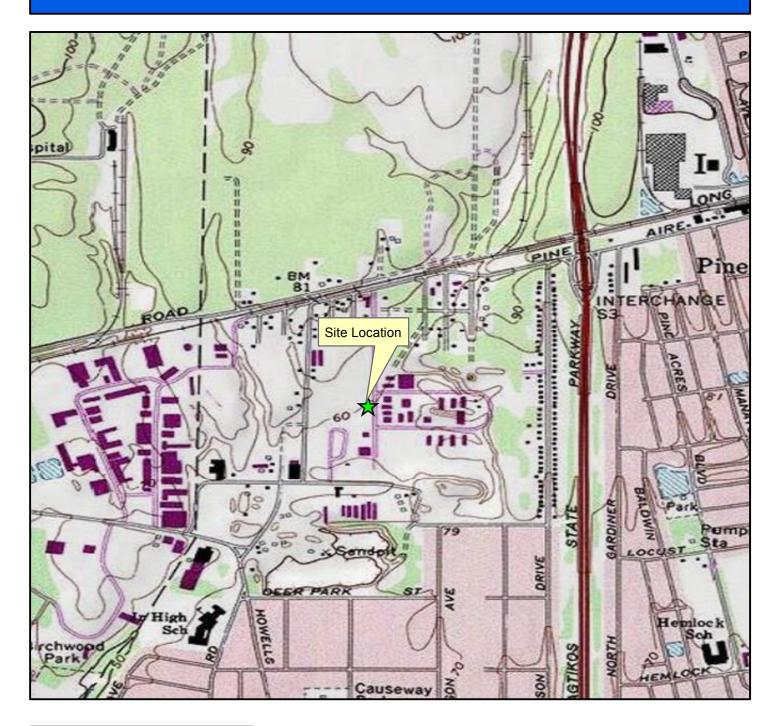


Figure 1-1 Site Location

86 Cleveland Avenue Bay Shore, NY 11706

USGS Quadrangle: Greenlawn

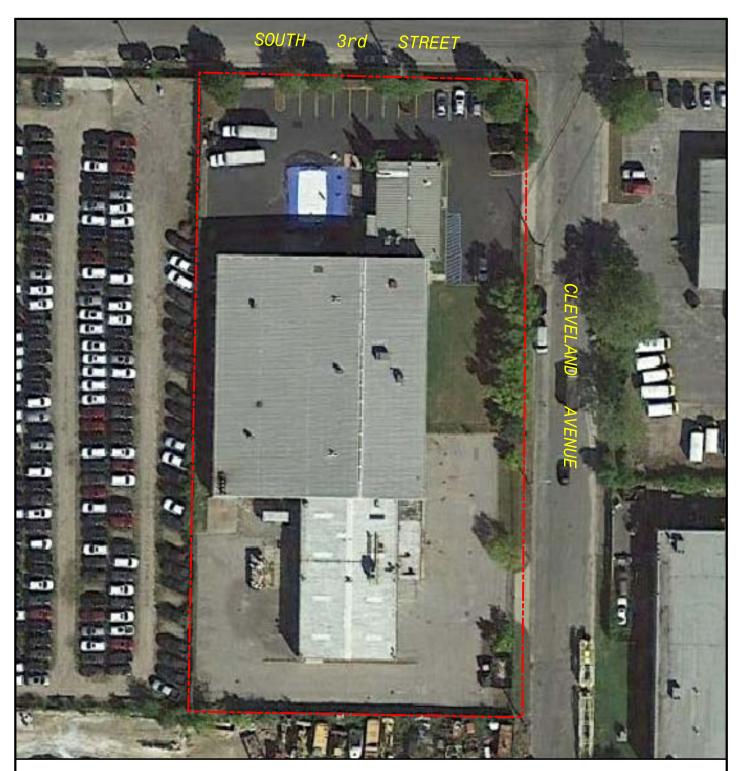
Approx. Elevation: 60 feet





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LEGEND:

PROPERTY BOUNDARY





FIGURE #

1-2

SITE PLAN

FORMER BARON BLAKESLEE SITE 86 CLEVELAND AVENUE BAY SHORE, NEW YORK DRAWN BY: B.S.

REVISION DATE: 8/7/2018



APPENDICES



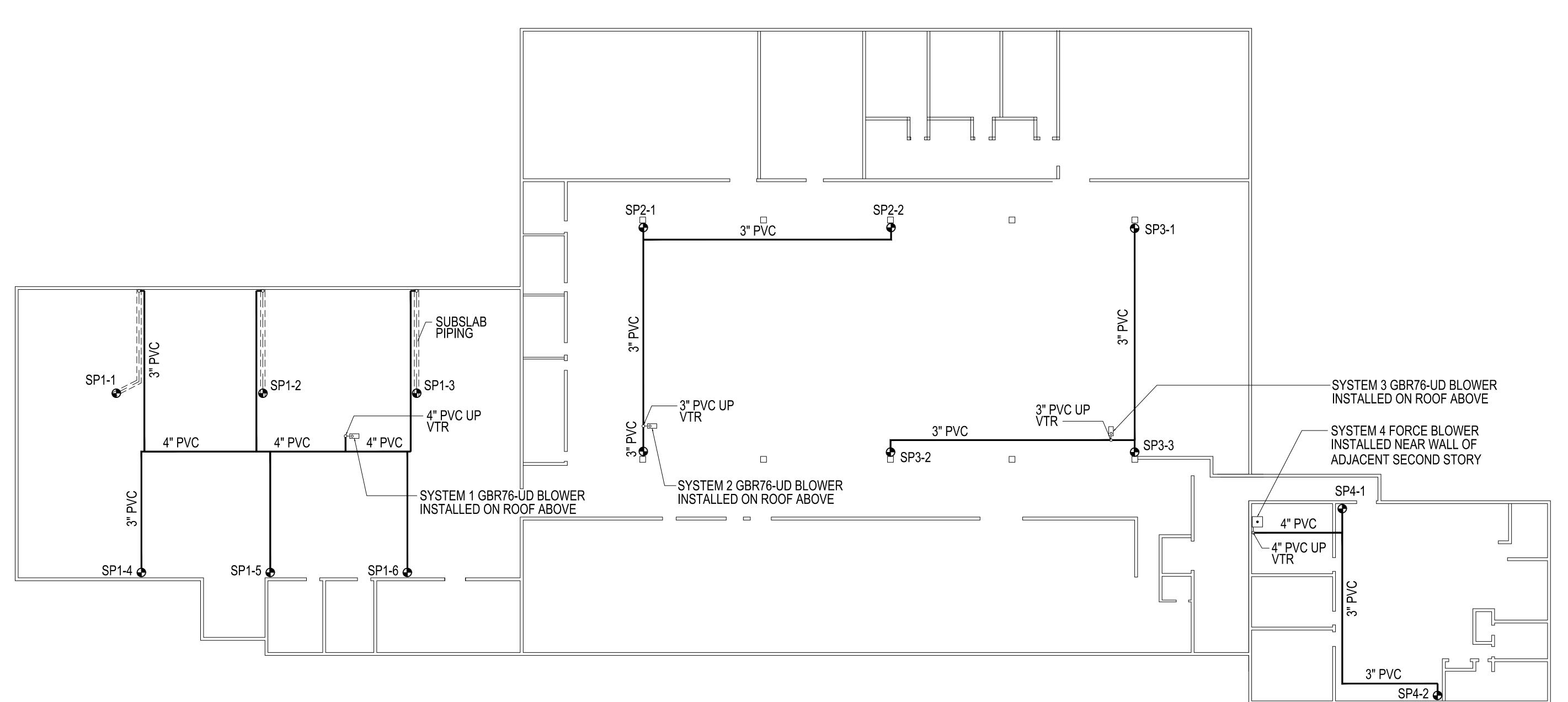
APPENDIX A

SSDS Layouts (from Final Engineering Report)



SUCTION PT. & BLOWERS

T NO.



FLOOR PLAN

LEGEND

SP#-#	SUCTION POINT
0 0	MAGNEHELIC PANEL
H	VAPOR GUARDIAN PANEL
0	OBAR GBR76-UD BLOWER
•	FRT FORCE BLOWER
□ PB#1	PRESSURE PROBES

FIRE COLLAR (as req'd.)

0 12' 36'

6' 24' 48

GRAPHIC SCALE





REVISION AS-BUILTS DATE 11-23-15 11/23/15 DAB TEH CHECKED BY SHEET TITLE

LEGEND

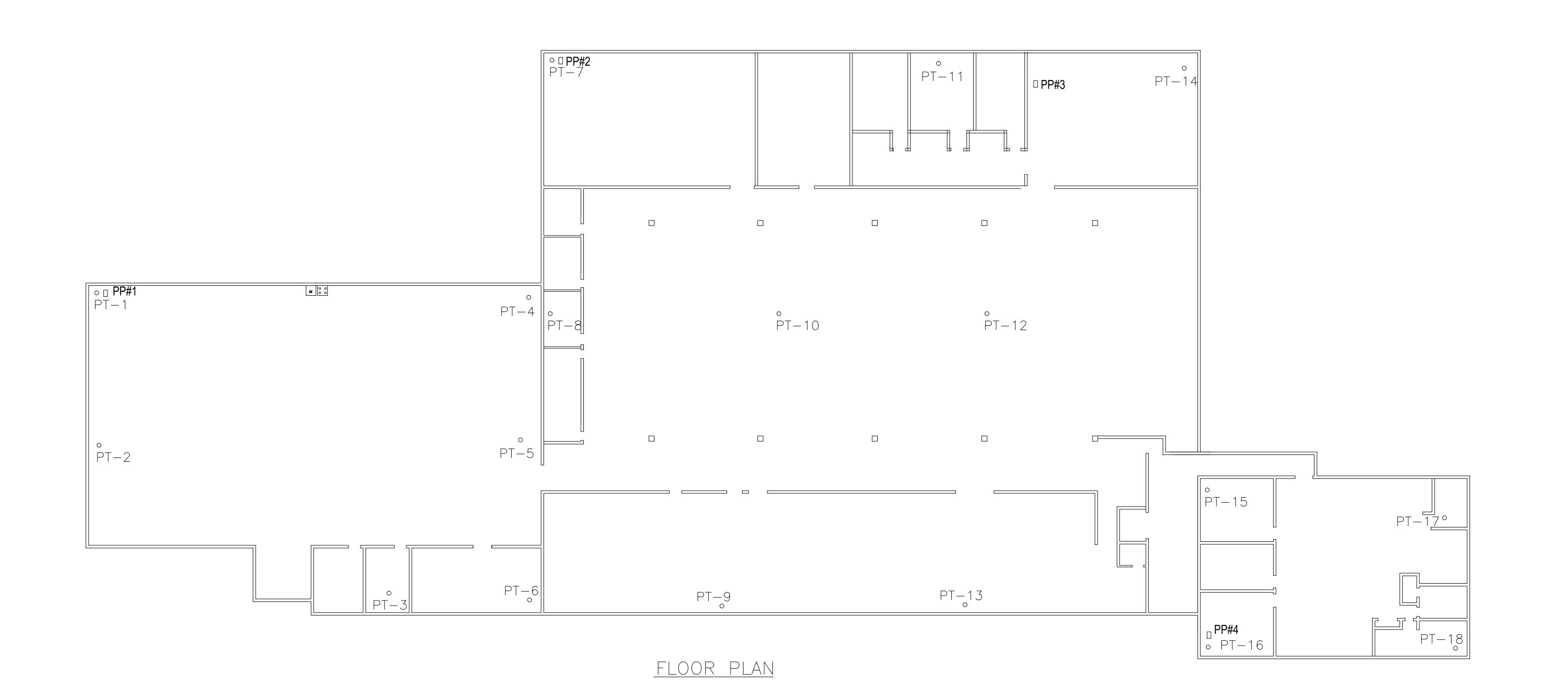
PT-1 PERMENANT TESTHOLE

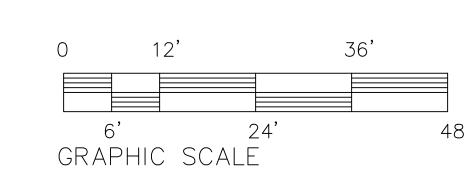
MAGNEHELIC PANEL

VAPOR GUARDIAN PANEL

REMOTE MONITORING PORT

MONITORING CONTROLS





APPENDIX B SSDS Operation Data



Table 2-1
Vacuum Monitoring Point Measurements
86 Cleveland Avenue, Bay Shore, NY

acuum Monitoring Point					asurement f water					Vacuum Monitoring Point	Vacuum Measurement inches of water											
Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/2020	Date	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/2020	
PT-1	NA	NA	-0.063	-0.027	-0.029	-0.031	-0.052	-0.061	NA	-0.031	PT-11	-0.060	NA	-0.052	-0.045	-0.044	-0.05	-0.48	-0.062	NA	-0.04	
PT-2	-0.040	NA	-0.042	-0.020	-0.020	-0.020	-0.039	-0.044	NA	-0.277	PT-12	-0.015	NA	-0.368	-0.236	-0.222	-0.148	-0.098	-0.319	NA	- 0.145	
PT-3	-0.030	NA	-0.127	-0.042	-0.040	-0.121	-0.145	-0.155	NA	- 0.064	PT-13	-0.004	NA	-0.051	-0.046	-0.045	-0.126	0.114	NA	-0.094	-0.071	
PT-4	-0.060	-0.150	-0.382	-0.020	-0.020	-0.020	-0.121	-0.091	NA	-0.800	PT-14	-0.020	NA	-0.046	-0.105	-0.100	-0.096	-0.026	NA	-0.026	- 0.014	
PT-5	-0.010	NA	-0.001	-0.064	-0.066	-0.036	-0.046	-0.087	NA	-0.409	PT-15	-0.100	NA	-0.015	-0.488	-0.400	-0.022	-0.014	NA	-0.019	-0.010	
PT-6	-0.030	NA	-0.007	-0.022	-0.028	-0.210	-0.193	-0.261	NA	-0.108	PT-16	-0.004	NA	-0.001	-0.717	-0.722	-0.02	-0.016	NA	-0.021	- 0.00	
PT-7	-0.004	NA	-0.027	-0.017	-0.016	-0.018	-0.010	-0.024	NA	-0.013	PT-17	-0.005	NA	-0.043	-0.071	-0.071	-0.028	NA	NA	-0.044	- 0.012	
PT-8	-0.005	NA	-0.523	-0.059	-0.044	-0.040	NA	NA	-0.036	-0.011	PT-18	-0.004	NA	-0.002	-0.230	-0.219	-0.026	-0.021	NA	-0.032	-0.009	
PT-9	-0.004	NA	-0.005	-0.022	-0.020	-0.127	NA	NA	-0.114	-0.024												
PT-10	-0.280	NA	-0.444	-0.114	-0.111	-0.768	-1.088	-0.415	NA	-0.139												

Notes:

PT - Test Point



Table 2-2 ADS Blower and Riser Pipe Vacuum and Air Flow Measurements 86 Cleveland Avenue, Bay shore, NY

ADS Blowers					Neasurement of water				Riser	Vacuum Measurement Inches of water										Air Flow cubic feet per miter									
Date	2/22/2017	6/29/2017	9/19/2017	12/29/201	7 3/14/2018	6/15/2018	9/26/2018	6/9/2020	Date	2/22/2017	6/29/201	7 9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/2020	2/22/2017	6/29/2017	9/19/2017	12/29/2017	3/14/2018	6/15/2018	9/26/2018	6/19/2019	7/11/2019	6/9/207
B-1	NA	NA	-2	-1.6	-1	-3	-1.8	-2	1-1	NA	NA	-1.875	-0.072	-0.673	-2.728	-1.371	-4.29	NA	-1.529	NA	NA	1.31	2.22	1.980	1.66	1.83	7.98	NA	2.5
B-2	NA	NA	-12	-13	-11	-15	-12.5	-9	1-2	NA	NA	-1.821	-0.036	-0.612	-2.78	-1.687	-3.902	NA	-1.503	NA	NA	2.40	1.45	3.790	1.74	2.71	15.3	NA	2,19
B-3	NA	NA	-10	-17.5	-9	-10	-10.5	-14	1-3	NA	NA	-1.837	-0.212	-0.547	-2.549	-1.647	-4.264	NA	-1.477	NA	NA	1.27	5.95	3.850	10.19	8.93	9.42	NA	7.50
B-4	NA	NA	-4.2	-4.5	-4	-4	-4.2	-4	1-4	NA	NA	-1.76	-0.939	-0.513	-2.626	-1.6	-4.154	NA	-1.468	NA	NA	21.41	41.02	22.250	29.23	21.93	32.95	NA	20.7
			And the				Balling B	E constant p	1-5	NA	NA	-1.785	-0.744	-0.381	-2.546	-1.693	-3.998	NA	-1.410	NA	NA	20.03	65.16	45.240	40.7	28.36	39.67	NA	27.5
									1-6	NA	NA	-1.822	-1.059	-0.558	-2.511	-1.617	-4.071	NA	-1.475	NA	NA	14.93	26.35	15.420	25.39	16.1	30.94	NA	19.6
									2-1	NA	NA	-12.37	-14.390	-11.580	-15.38	-15.12	-15.13	NA	-9.536	NA	NA	10.06	21.43	10.010	17.07	17.38	23.75	NA	25.8
									2-2	NA	NA	-12.26	-0.348	-11.530	-15.3	-15.03	-15.19	NA	- 9.381	NA	NA	19.37	18.39	14.610	16.52	17.15	16.25	NA	28.4
									2-3	NA	NA	-12.46	-14.410	-11.700	-16.42	-14.98	-15.8	NA	-9.672	NA	NA	16.55	27.36	24.420	21.47	16.39	25.08	NA	18.4
					a starty				3-1	NA	NA	-10.49	-0.358	-9.384	-10.43	-12.31	NA	-20.82	-16,30	NA	NA	13.07	22.54	11.190	12.66	21.01	NA	25.64	25.4
		ing stores		1	bine here			da decesió de	3-2	NA	NA	-10.28	-0.475	-8.764	-10.22	-9.34	NA	-20.28	-15.41	NA	NA	25.26	65.54	40.490	27.08	26.12	NA	42.33	53.5
									3-3	NA	NA	-10.30	-0.255	-8.898	-10.28	-10.49	NA	-20.43	-15.87	NA	NA	15.60	40.33	24.660	18.56	17.51	NA	33.82	37.4
					100/66				4-1	NA	NA	NA	NA	-4.222	-4.113	-4.01	-4.429	NA	-4.169	NA	NA	NA	NA	22.47	21.26	20.39	19.91	NA	34.5
									4-2	NA	NA	NA	NA	-4.016	-4.039	-3.981	-4.088	NA	- 3.88	NA NA	NA	NA	NA	50.98	32.49	30.68	42.48	NA	41.9

Notes:

B = Blower

