JLN Engineering Services, PLLC 90 State Street, Suite 700, New York, NY 10020
Email james.napoli@jlnengineering.com/Phone 631-387-3170

July 30, 2024

Mr. Mark Domaracki, P.G.
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7014

Re: **Interim Remedial Measures Pilot Test Workplan**
5 Westchester Plaza
Elmsford, New York 10523
NYSDEC Site #: C360205
Project No. 2847

Dear Mr. Domaracki:

The 2021 Remedial Investigation Workplan (RIWP) was submitted and subsequently approved by the New York State Department of Environmental Conservation's (NYSDEC) on December 22, 2021. After implementation of the RIWP, a December 2022 Remedial Investigation Report (RIR) was submitted to the NYSDEC. Pursuant to the NYSDEC February 6, 2023 RIR rejection letter and our conversation of March 7, 2023, Peak Environmental, A Nova Group, GBC Company (Peak) prepared an August 11, 2023, Remedial Investigation Workplan on behalf of the applicant, Mack-Cali CW Realty Associates L.L.C. (Mack-Cali). Pursuant to the NYSDEC August 30, 2023, February 14, 2024, and May 28, 2024 comment letters, JLN Engineering Services, PLLC, a New York State certified Professional Engineering Firm (PE) (Company ID 140111, License # 095911) has prepared this Interim Remedial Measures (IRM) Pilot Test Workplan on behalf of Mack-Cali for NYSDEC's approval, prior to conducting diagnostic testing to obtain the necessary information needed to design a Sub-Slab Depressurization System (SSDS).

Please note that JLN Engineering Services, PLLC has been retained directly by Mack-Cali, and that Nova Group (dba Peak Environmental, a Nova Group GBC Company) will be subcontracted by JLN Engineering Services, PLLC to perform the field services outlined in this RIWP. James Napoli of JLN Engineering Services, PLLC is also employed by the Nova Group, GBC but he will not be performing services for the Nova Group, GBC for this Site.

The specific objectives of the Pilot Test are to obtain the information needed to design an SSDS capable of depressurizing the sub slab soils to a predefined sub slab pressure differential requirement. Results of the proposed diagnostic testing and SSDS design will be presented in an IRM Report.

Background

Previous Site investigations conducted during a Phase II environmental assessment in August 2020 identified impacts to the sub-slab soil vapor (SSSV) beneath the Site. Subsequent VI investigations conducted on-Site by Peak in March 2022 confirmed CVOC impacts in the SSSV and indoor air. The results of the March 2022 VI investigation are presented on **Drawing 1**.

The current tenants occupying 5 Westchester Plaza are presented in the table below:

Tenant Name	Square Footage of Leasehold
Prompt Care	4,923
Dolphin Construction Corporation	2,464
Apria Healthcare	7,410
Willemin-Macodel Inc.	2,567
Apple Maintenance & Services, Inc.	2,383

Based upon the results of the prior vapor intrusion investigations, a vapor mitigation system is required at the Site.

SSDS Diagnostic Testing Protocols

The purpose of diagnostic testing is to obtain the information necessary to design an SSDS capable of depressurizing the sub slab soils to a predefined sub slab pressure differential requirement. A SSDS is a system that depressurizes the soil beneath the slab of the building. The concept is that by creating a vacuum beneath the slab, the soil gases will be drawn into the system where they can be discharged above the roofline, thus circumventing the building interior. The defining metric for an SSDS is a negative sub slab pressure differential, most typically this pressure is -0.004 inches of water column ("w.c.). A diagnostic survey will be completed by a vapor mitigation contractor, OBAR Systems Inc. (Obar), retained by JLN. The diagnostic survey will include a visual investigation of the building to identify any potential physical routes of soil vapor entry and a series of mechanical tests to determine the volume of air and applied vacuum needed to influence the slab areas of concern. Once completed, a report will be generated which will include the results of the diagnostic tests and the design of the mitigation system. The design will include a drawing showing all relevant extraction wells, fan(s), and pipe locations. Fan selection will be made by comparing the diagnostic data to the flow rate and vacuum of blowers used specifically for mitigation systems.

Extraction Well Details

The method for diagnostic testing and system design will involve coring temporary 2 ½" extraction wells in the floor and temporary 5/16" monitoring points at various distances from the extraction wells. After coring through the approximately 6-in thick building slab, the extraction well will be hand excavated to a depth of approximately 6-in below the building slab. Soil excavated during the installation of the extraction wells will be screened with a photoionization detector (PID).

A specialized Sub Slab Diagnostic Vacuum (SSDV), capable of up to 200 CFM and an applied vacuum of up to 100 "w.c. will be used with a variable speed controller to apply vacuum to the sub slab material via the extraction well. The SSDV uses the same motor as Obar's GBR 76-UD blower. Obar has provided the attached fan curve which is included as **Attachment 1**. By varying the applied vacuum, the flow and vacuum characteristics of the soil beneath the slab can be defined. This will be completed for three different vacuum speeds, and the following information will be recorded: extraction well velocity, vacuum at extraction well and associated monitoring points, temperature prior to carbon, and PID readings pre and post carbon. The SSDV has a built-in pitot tube to measure air velocity and the suction tube has a port for measuring vacuum at the extraction well. Proposed diagnostic testing locations are presented on **Drawing 2**. A detail of the diagnostic set up is provided as **Attachment 2.** This detail includes suction point

and test hole construction details as well as the inclusion of an inline carbon vessel. A carbon replacement unit will be on-site as a contingency, should breakthrough of the carbon occur. After the testing is complete the extraction well and the vapor monitoring points will be backfilled and patched with concrete or, if required by field conditions, the extraction well cavity will be backfilled with gravel.

Testing Parameters and Monitoring

During the diagnostic testing, the pressure and flow values will be monitored using a vacuum meter capable of measuring 60 "w.c. and a micromanometer capable of reading 0.0001 "w.c. The 5/16" test holes will be used to monitor the pressure differential created by the SSDV with a micromanometer capable of reading down to 0.0001"w.c. The data produced by this process will determine the area of the slab that can be depressurized to the required sub slab pressure differential by using a specific volume of air flow at a specific applied vacuum. Once the area of influence (AOI) per suction point has been determined, a design will be prepared by mapping out the building to provide the proper amount of vacuum coverage with the appropriate number of suction points. As the testing is an iterative process, additional extraction wells and monitoring points will be installed until the proper AOI information is obtained for proper design of the SSDS. The vacuum readings will be recorded and will later be provided in data tables as evidence of sufficient sub-slab vacuum and AOI. An AOI figure will be created with the extent of documented vacuum.

Effluent Sampling

In addition to the diagnostic testing described above, one effluent sample will be conducted at each of the six proposed extraction wells prior to being run through the inline carbon vessel, for a total of six air samples. This sampling will be used to determine if carbon treatment is required for the SSDS design. The effluent samples will be collected in batch-certified 2.7-Liter (L) Summa® passivated stainless-steel canisters with a regulator-controlled collection time not exceeding 0.2 liters per minute, provided by an ELAP accredited laboratory. The proposed sample duration for these samples will be 15 minutes. The effluent samples will be analyzed by an ELAP accredited laboratory for TO-15 analysis. Analytical results will then be input into the Air Screen Model to determine if carbon treatment is required for the SSDS design.

Following the completion of the diagnostic testing, the contractor will prepare a vapor intrusion mitigation system design plan that contains the diagnostic data collected along with an explanation of the diagnostics performed. The design will include all information including drawings and specifications required for the installation of the mitigation system.

Schedule

An anticipated schedule for the proposed diagnostic activities, including timelines and target dates for the start and completion of field activities and receipt of analytical results (dependent on the availability of subcontractors) is between 2-5 weeks after NYSDEC approval of the IRM Pilot Test Workplan.

The NYSDEC will be notified at least 7 days in advance of, and be allowed to attend, any field activities. Sample results will be reported in a subsequent revised RIR and the SSDS design plan will be included and summarized in the subsequent IRM Report for NYSDEC review and approval.

Sincerely,
JLN Engineering Services, PLLC

James Napoli
New York State Professional Engineer License # 095911

cc. Jay Jaffe, Esq., Greenbaum, Rowe, Smith & Davis LLP
Jeffrey Campbell, PG, Campbell Geological Services, PLLC
Michael Stopen, Senior Project Manager, Peak Environmental, a Nova Group GBC Company
Robert M. Edgar, Managing Principal, Peak Environmental, a Nova Group GBC Company

JLN Engineering Services, PLLC
90 State Street, Suite 700, New York, NY 10020
Email james.napoli@jlnengineering.com/Phone 631-387-3170

DRAWINGS

Soil Vapor/Indoor Air Matrix 1

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)		
SUB-SLAB VAPOR CONCENTRATION of COMPOUND ($\mu g/m^3$)	< 0.2	0.2 to < 1	1 and above
< 6	1. No further action	2. No further action	3. Identify source(s) and resample or mitigate
6 to < 60	4. No further action	5. MONITOR	6. MITIGATE
60 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes

Matrix obtained from New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York

Decision Matrix 1 for carbon tetrachloride and trichloroethene

Analytes Assigned:
Trichloroethene (TCE), cis-1,2-Dichloroethene (c-1,2-DCE), 1,1-Dichloroethene (1,1-DCE), Carbon Tetrachloride

Soil Vapor/Indoor Air Matrix 2

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)		
SUB-SLAB VAPOR CONCENTRATION of COMPOUND ($\mu g/m^3$)	< 3	3 to < 10	10 and above
< 100	1. No further action	2. No further action	3. Identify source(s) and resample or mitigate
100 to < 1,000	4. No further action	5. MONITOR	6. MITIGATE
1,000 and above	7. MITIGATE	8. MITIGATE	9. MITIGATE

Notes

Matrix obtained from New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York

Decision Matrix 2 for tetrachloroethene and 1,1,1-trichloroethane

Analytes Assigned:
Tetrachloroethene (PCE), 1,1,1-Trichloroethane (1,1,1-TCA), Methylene Chloride

WESTCHESTER PLAZA WEST

APPLE MAINTENANCE & SERVICES, INC

FORMER CLINICAL TECHNOLOGIES ASSOCIATION

WILLEMIN-MACODEL INC

APRIA HEALTHCARE

DOLPHIN CONSTRUCTION CORP.

PROMPTCARE

SS-1	
Methylene chloride	2.52
Tetrachloroethene	133
Trichloroethene	ND

SS-2	
Methylene chloride	2.5
Tetrachloroethene	38.7
Trichloroethene	ND

SS-3	
Methylene chloride	ND
Tetrachloroethene	1370
Trichloroethene	ND

SS-4	
Methylene chloride	2.07
Tetrachloroethene	670
Trichloroethene	ND

SS-5	
Methylene chloride	ND
Tetrachloroethene	10,200
Trichloroethene	14,200

SS-6	
Methylene chloride	ND
Tetrachloroethene	136
Trichloroethene	5.35

SS-7	
Methylene chloride	24.7
Tetrachloroethene	2.69
Trichloroethene	12.7

IA-1	
Methylene chloride	ND
Tetrachloroethene	0.17
Trichloroethene	ND

IA-2	
Methylene chloride	2.37
Tetrachloroethene	0.149
Trichloroethene	ND

IA-3	
Methylene chloride	57
Tetrachloroethene	3.47
Trichloroethene	ND

IA-4	
Methylene chloride	6.53
Tetrachloroethene	0.868
Trichloroethene	0.403

IA-5	
Methylene chloride	7.54
Tetrachloroethene	0.976
Trichloroethene	0.548

IA-6	
Methylene chloride	2.41
Tetrachloroethene	0.325
Trichloroethene	0.14

IA-7	
Methylene chloride	22.1
Tetrachloroethene	0.468
Trichloroethene	0.193

AA-1	
Methylene chloride	ND
Tetrachloroethene	ND
Trichloroethene	ND

0 10 20 40
SCALE: 1"=20'

PEAK ENVIRONMENTAL
A Nova Group, GBC Company
26 KENNEDY BOULEVARD, SUITE A, EAST BRUNSWICK, NJ 08816
PHONE: 732-326-1010 WWW.PEAK-ENVIRONMENTAL.COM

LEGEND

- PROPERTY BOUNDARY
- BROWNFIELD SITE BOUNDARY LINE
- LEASEHOLD BOUNDARY
- INDOOR/AMBIENT AIR SAMPLE LOCATION
- SUB-SLAB SOIL VAPOR SAMPLE LOCATION

NOTE:

1. SAMPLE RESULTS WERE COMPARED TO THE NYDOH DECISION MATRICES.

SOURCES:

1. MAP CREATED IN HARN/NY.NY-EF, NEW YORK STATE PLANE, EAST ZONE, U.S. SURVEY FOOT
2. AERIAL IMAGE FROM 2019 GOOGLE MAPS.
3. SITE BOUNDARY GRAPHICALLY SHOWN PER THE WESTCHESTER COUNTY GEOGRAPHIC INFORMATION SYSTEMS WEBSITE.
4. BUILDING LAYOUT DETAIL OBTAINED FROM CLIENT SUPPLIED PDF ENTITLED "FLOOR PLAN". UNDATED.

MARCH 2022 VAPOR INTRUSION SAMPLE LOCATION MAP WITH BUILDING INTERIOR WALLS

5 WESTCHESTER PLAZA
ELMSFORD, NEW YORK

NYSDEC SITE #: C360205

PROJECT: 2847

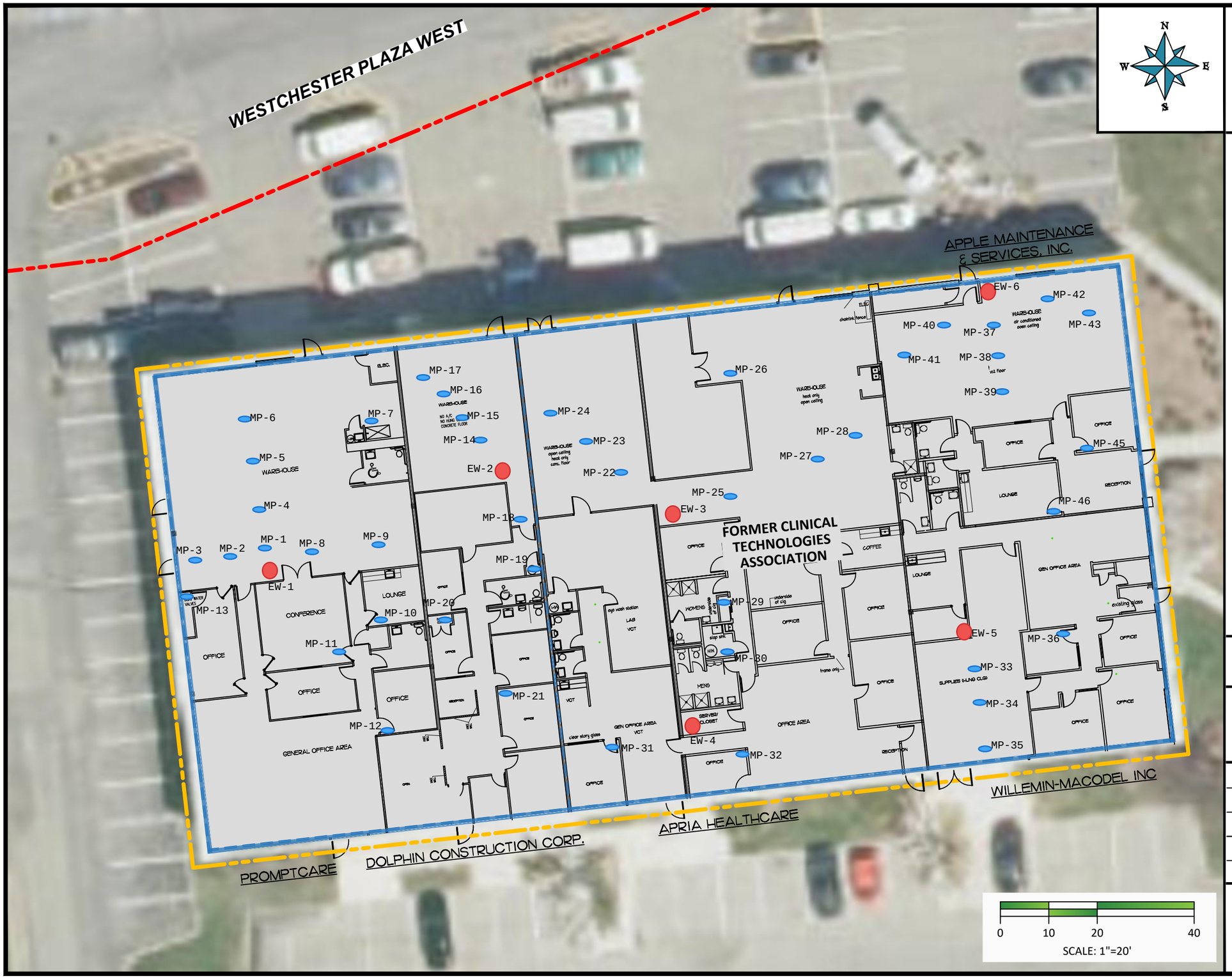
DATE: JUNE 11, 2024

DRAWN BY: MG

CHECKED BY: DRAFT

DRAWING 1

Z:\2000_PROJECTS\2847_MACOCAL - WESTCHESTER, NY\01-CAD\2024-06-11_RIR MAP SET.DWG



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A Nova Group, GBC Company
26 KENNEDY BOULEVARD, SUITE A, EAST BRUNSWICK, NJ 08816
PHONE: 732-326-1010 WWW.PEAK-ENVIRONMENTAL.COM

LEGEND

- PROPERTY BOUNDARY
- BROWNFIELD SITE BOUNDARY LINE
- LEASEHOLD BOUNDARY
- Projected Extraction Wells
- Projected Monitoring Points

Note: Locations and IDs for proposed extraction wells and monitoring points are subject to change based on accessibility at the Site at time of installation

SOURCES:

1. MAP CREATED IN HARN/NY.NY-EF, NEW YORK STATE PLANE, EAST ZONE, U.S. SURVEY FOOT
2. AERIAL IMAGE FROM 2019 GOOGLE MAPS.
3. SITE BOUNDARY GRAPHICALLY SHOWN PER THE WESTCHESTER COUNTY GEOGRAPHIC INFORMATION SYSTEMS WEBSITE.
4. BUILDING LAYOUT DETAIL OBTAINED FROM CLIENT SUPPLIED PDF ENTITLED "FLOOR PLAN". UNDATED.

PROPOSED DIAGNOSTIC TESTING LOCATION MAP

5 WESTCHESTER PLAZA
ELMSFORD, NEW YORK

NYSDEC SITE #: C360205

PROJECT: 2847

DATE: NOVEMBER 16, 2022

DRAWN BY: JK

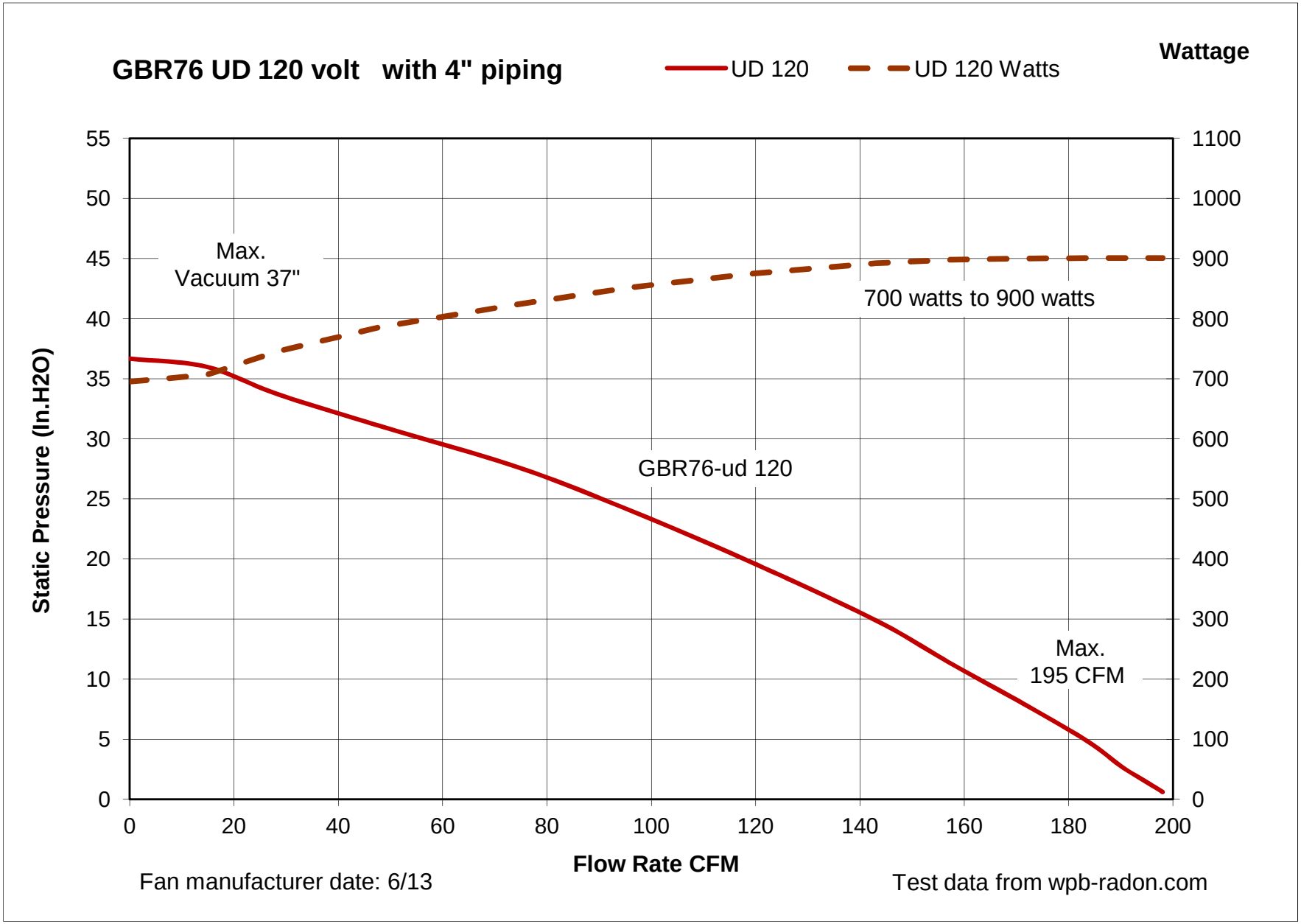
CHECKED BY: DRAFT

DRAWING 2

Z:\0000_PROJECTS\2847_MACKCALI - WESTCHESTER, NY\01-CAD\2022-11-03_RIR_SAMPLE LOCATIONMAP.DWG

JLN Engineering Services, PLLC
90 State Street, Suite 700, New York, NY 10020
Email james.napoli@jlnengineering.com/Phone 631-387-3170

ATTACHMENT I


GBR76 UD 120 volt with 4" piping
UD 120
UD 120 Watts
Wattage
Static Pressure (In.H2O)
55
50
45
40
35
30
25
20
15
10
5
0
1100
1000
900
800
700
600
500
400
300
200
100
0
Max.
Vacuum 37"
700 watts to 900 watts
GBR76-ud 120
Max.
195 CFM
0
20
40
60
80
100
120
140
160
180
200
Flow Rate CFM
Fan manufacturer date: 6/13
Test data from wpb-radon.com

JLN Engineering Services, PLLC
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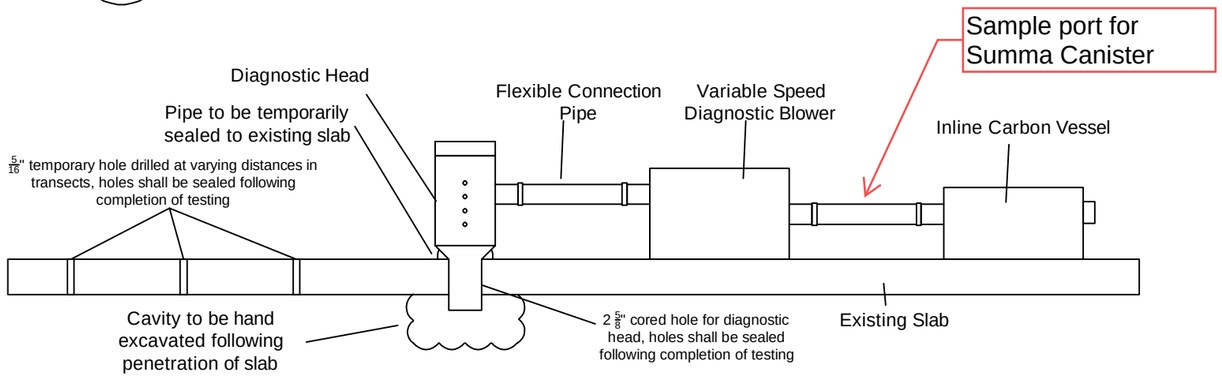
Email james.napoli@jlnengineering.com/Phone 631-387-3170

ATTACHMENT 2

1 Diagnostic Machine Detail

No Scale



General Notes

No.	Revision/Issue	Date
1	Original	

Firm Name and Address
OBAR SYSTEMS, INC.
2969 NJ 23, Newfoundland, NJ, 07435

Project Name and Address

Sheet Name
Diagnostic Details

Sheet #

Date
2/16/24

Sheet Size
ANSI B