RADON INVESTIGATION REPORT

SOUTH GROVE ELEMENTARY SCHOOL AND SOUTH GROVE ANNEX 60 COLONY LANE SYOSSET, NEW YORK 11791

PREPARED FOR: SYOSSET CENTRAL SCHOOL DISTRICT 99 PELL LANE SYOSSET, NEW YORK 11791

> JCB PROJECT #: 23-54133 JUNE 2023

J.C. BRODERICK & ASSOCIATES, INC. Environmental Consulting & Testing

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Section No. 1.0: Introduction

J.C. Broderick and Associates (JCB) was retained by the Syosset Central School District (District) to perform additional radon testing at the South Grove Elementary School and Annex. The additional radon in air survey included investigating radon gas in the subsurface soil vapors beneath Rooms 123 and 124, continuous short-term monitoring of Rooms 123 and 124, and long-term testing of all spaces previously sampled as part of the annual testing protocol. This additional testing was performed to confirm the detection of radon within specific spaces of the school building and to investigate possible sources of radon.

Section No. 2.0: Site Description and Location

The Subject Site is located at 60 Colony Lane, Syosset, New York 11971 and consists of two (2) buildings, the South Grove Elementary School and the South Grove Annex. The Subject Site is located on the west side of Colony Lane between Marsak Lane to the north and Southwood Circle to the south. According to the United States Geological Survey (USGS) Hicksville, New York, 2013 7.5 Minute Series Topographical Map, the Subject Site is situated at an approximate elevation of 200 feet (ft) above mean sea level.

The South Grove Elementary School and Annex are located adjacent and down groundwater gradient from the former Syosset Landfill. The 38-acre landfill operated from about 1933 to 1975. Between 1933 and 1967, no restrictions were imposed on the types of wastes accepted at the landfill. Waste types included commercial, industrial, residential, demolition, agricultural, sludge material and ash. In 1967 the town stopped using the landfill for disposal of domestically generated wastes. Some industrial wastes continued to be disposed of at the landfill until its closure in 1975. After undergoing a cleanup process, the US Environmental Protection Agency (USEPA) removed the site from the National Priorities List of the Superfund program in April 2005. Presently, the Town of Oyster Bay manages the site as a maintenance yard. The location of the Subject Site is shown on the Site Location Map, Appendix-A Figure-1.

Section No. 3.0: Previous Radon in Air Sampling and Analysis

Since at least 2002, South Grove Elementary School and other district buildings have undergone scheduled radon testing in both occupied and non-occupied areas. Both short-term and long-term testing revealed concentrations of radon in air above the USEPA Action Level of 4 pCi/L (picocuries per liter) in the crawlspaces and certain occupied spaces of the elementary school. In late 2003, a Radon Mitigation System (RMS) was designed and installed to actively vent radon gas from beneath the building foundation through a series of pipes to fans located on the roof. The RMS, deemed flawlessly designed by an independent consultant, required operational improvements that were subsequently implemented.

From at least 2002 to 2011, bi-annual short-term and/or long-term radon testing took place during winter and summer months. The results consistently showed radon in air concentrations to be below 4.0 pCi/L. In 2012, to be consistent with the USEPA Radon Measurement in Schools, Revised Edition, guidance document (EPA 402-R-92-014), JCB prepared a Radon Measurement Plan, initiating annual radon in air sampling and testing during the heating season. The testing scope was also expanded from seven (7) to 33 occupied spaces, including the gym addition and the Annex (13 additional spaces).

JCB's annual testing from 2012 through 2022 consistently indicated radon in air levels below the USEPA recommended action level of 4.0 pCi/L in all tested areas. It is important to note that the RMS has remained operational throughout each testing event. Except for two occupied spaces, Room 123 and

Room 124 in the 2004 gym addition, the annual testing consistently revealed radon in air levels below 2.0 pCi/L in all areas. The detection of radon concentrations between 2.0 and 3.9 pCi/L in these and other spaces prompted the expansion of testing to include data confirmation through short-term testing, long-term testing, and source identification sampling.

Section No. 4.0: Annual Short-Term Radon Sampling and Analysis – January 12, 2023

On January 12, 2023, JCB conducted the annual short-term sampling and analysis of radon in air of 34 spaces at South Grove Elementary School and 13 spaces at the Annex. Notably, during this sampling event, the Radon Mitigation System (RMS) was deactivated for a minimum of 48 hours before the testing began and remained off throughout the entire sampling period. This modification was implemented to gather data that would support a potential reduction or discontinuation of the RMS. The laboratory analysis of the submitted samples revealed that the concentration of radon in air was below the guidance value established by the USEPA in all tested spaces, with the exception of Room 123, which had a concentration of 4.0 pCi/L. Additionally, eight (8) other spaces indicated concentrations ranging from 2.0 to 3.9 pCi/L. Based on these findings, JCB recommended conducting duplicate short-term testing in Room 123, as well as in Room 124 due to its proximity. The district also included the gym vestibule and the gym (stage) in the sampling plan. For further details, please refer to JCB's document titled "Indoor Radon Sampling and Methane Monitoring South Grove Elementary School," dated January 31, 2023 (JCB Project No.: 22-52916).

Section No. 4.1: Duplicate Short-Term Radon Sampling and Analysis – February 8, 2023

On February 8, 2023, JCB conducted duplicate short-term sampling and analysis of radon in air. This included two (2) spaces that were previously tested in January 2023, as well as two (2) additional spaces requested by the district. The testing conditions were similar to those in January 2023, with the Radon Mitigation System (RMS) turned off for at least 48 hours prior to the start of testing and throughout the sampling period. The laboratory analysis of the submitted samples indicated radon in air levels below the USEPA recommended action level of 4.0 pCi/L in all tested areas. Both the Room 123 sample and the duplicate sample indicated a radon in air level of 2.6 pCi/L. For further details, please refer to JCB's document titled "Indoor Radon Sampling South Grove Elementary School," dated February 15, 2023 (JCB Project No.: 22-52916).

Section No. 4.2: Duplicate Short-Term Radon Sampling and Analysis – February 15, 2023

On February 15, 2023, JCB conducted duplicate short-term sampling and analysis of radon in air. This included the same four (4) spaces previously tested on February 8, 2023. The purpose of this testing was to determine the effectiveness, if any of the RMS to the gym addition. To perform the sampling under normal building conditions, the existing RMS was operational throughout the duration of the sampling. It should also be noted that air purifiers containing activated carbon filtration were operating in Rooms 123 and 124 during the sampling period. The laboratory analysis of the submitted samples indicated radon in air levels below the USEPA recommended action level of 4.0 pCi/L in all tested areas. The samples from Room 123 and Room 124 indicated radon in air levels of 2.1 pCi/L and 1.8 pCi/L, respectively. For further details, please refer to JCB's document titled "Indoor Radon Sampling South Grove Elementary School," dated February 15, 2023 (JCB Project No.: 22-52916).

Section No. 4.3: Duplicate Short-Term Radon Sampling and Analysis – March 6, 2023

On March 6, 2023, JCB conducted duplicate short-term sampling and analysis of radon in air. This testing was targeted to Rooms 123 and 124 only. To perform the sampling under normal building conditions, the existing RMS was operational throughout the duration of the sampling. It should also

be noted that air purifiers containing activated carbon filtration were operating in these rooms during the sampling period. The laboratory analysis of the submitted samples indicated radon in air levels below the USEPA recommended action level of 4.0 pCi/L in both areas tested. The samples from Room 123 and Room 124 indicated radon in air levels of 1.3 pCi/L and 0.8 pCi/L, respectively. For further details, please refer to JCB's document titled "Indoor Radon Sampling South Grove Elementary School," dated March 10, 2023 (JCB Project No.: 22-52916).

Table No. 1: Summary of Short-Term Radon Samples Analysis Results							
AHERA Room Identification	Radon Activity pCi/L – 3/6/23	Radon Activity pCi/L – 2/15/23	Radon Activity pCi/L – 2/8/23	Radon Activity pCi/L – 1/12/23	Radon Activity pCi/L – 4/25/22	Radon Activity pCi/L – 2/25/22	
Gym Vestibule		0.6	0.8				
Gym Vestibule - Duplicate		0.5	0.9				
Gym (stage)		1.3	1.7				
Gym (stage) - Duplicate		1.3	1.4				
Room 123	1.3	2.1	2.6	4.0	0.8	2.3	
Room 123 - Duplicate	1.4	0.6	2.6				
Room 124	0.8	1.8	1.6	3.8	0.9	2.0	
Room 124 - Duplicate	0.7	1.5	1.2				

The following table summarizes the Radon Analytical Results for the last several sampling events:

Section No. 5.0: Real-Time Radon Screening - March 31, 2023

In order to further investigate and potentially determine the origin of radon in air detected in Rooms 123 and 124 as associated with materials within the rooms or subsurface conditions, a targeted plan for realtime radon screening plan was implemented. Unlike previous short-term canister testing, which provides an average reading over a 3-day period, the real-time screening consisted of continuous data collection over the same duration. From March 27, 2023, at 7:00pm to March 31, 2023, at 7:00am, JCB utilized portable real-time monitoring devices that provided hourly detection and logging of radon, temperature, and humidity levels. The screening took place under normal building conditions, with the existing RMS operational throughout the monitoring period. It should also be noted that air purifiers containing activated carbon filtration were operating in each space during the sampling period.

The RadonEye Pro model RD200P professional continuous radon monitoring devises are certified for use by the American Association of Radon Scientists and Technologists (AARST) National Radon Proficiency Program (NRPP). The manufacturer's specifications and certification of calibration documents are available upon request.

The data collected from the two (2) monitoring devices were downloaded and graphed. The results provide the following observations:

- The samples collected from Room 123 and Room 124 exhibited a similar pattern in the detected level of radon in air over time, suggesting that they share a common source of radon and are not specific to any particular room.
- The radon in air levels detected did not show any consistent correlation with specific times of the day or night, such as during outdoor daytime heating or cooling.

- The radon in air levels detected did not show any consistent correlation with the school day, i.e., occupancy of the rooms.
- Despite district personnel providing the operating cycle of the HVAC system, the radon in air levels detected appeared to be unaffected by the HVAC system.
- There was some correlation between the radon in air levels and the recorded atmospheric pressure, although further investigation is required to determine the exact nature of this correlation as the indoor space is under relatively constant temperature, humidity, and pressure.
- In Room 123, the average radon concentration in the air was calculated as 1.8 pCi/L, which correlates with the results obtained from previous short-term canister testing. The lowest concentration of 0.3 pCi/L was recorded on March 28, 2023, at 14:03 hours, while the highest concentration of 5.4 pCi/L was recorded on March 30, 2023, at 00:03 hours.
- In Room 124, the average radon concentration in the air was calculated as 1.9 pCi/L, which correlates with the results obtained from previous short-term canister testing. The lowest concentration of 0.5 pCi/L was recorded on March 28, 2023, at 22:03 hours and on March 30, 2023, at 08:03 hours and 12:03 hours, while the highest concentration of 5.1 pCi/L was also recorded on March 30, 2023, at 00:03 hours, similar to Room 123.



Graph No. 1: Radon in Air in Rooms 123 & 124

Section No. 6.0: Soil Vapor Screening for Radon - March 31, 2023

To confirm the possible origin of radon from a subsurface source, JCB conducted soil vapor sampling from outside the school building adjacent to Rooms 123 and 124 along with an additional sample from the west building wall at the gym complex. This short-term sampling event (24-hours) was targeted to identify if the detected radon in these rooms could be attributed from soil vapor beneath these spaces.

The testing was performed utilizing a Durridge RAD7 Electronic Radon Detector. The RAD7 provides 30-minute detection and logging of radon, temperature, and humidity. The manufacturer's specifications and certification of calibration documents are available upon request.

A screened vapor point was driven into the subsurface soil at each location to a depth of four (4) feet below surface grade. The RAD7 was connected to the vapor point by new and dedicated polyethylene tubing and operated continuously for 24-hours from Friday, April 7, 2023, at 9:30 am to Saturday, April 8, 2023, at 9:30am. The screening took place under normal building conditions, with the existing RMS operational throughout the monitoring period.

The data collected from the three (3) soil vapor probes was downloaded and graphed. The results provide the following observations:

- The levels of radon in soil detected adjacent to Room 123 and Room 124 fluctuated in a similar manner but were much lower than those detected along the west wall of the building.
- The radon in soil detected did not show any consistent correlation with specific times of the day or night, such as during outdoor daytime heating or cooling.
- There was some correlation between the radon in soil levels and the recorded atmospheric pressure.
- The average concentration of radon in the subsurface soil vapor adjacent to Room 123 was 277 pCi/L.
- The average concentration of radon in the subsurface soil vapor adjacent to Room 124 was 261 pCi/L.
- The average concentration of radon in the subsurface soil vapor along the west building wall was 537 pCi/L.
- Research indicates that most soils in the United States contain radon between 200 and 2,000 pCi/L.



Graph No. 2: Radon in Soil Vapor

Section No. 7.0: Long-Term Radon Sampling and Analysis

The American Association of Radon Scientists and Technologists (AARST) Consortium on National Radon Standards <u>Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools</u> <u>and Large Buildings, 2014</u> guidance document recommends that a long-term radon in air test be performed after a short-term test and a follow-up short-term test indicates radon concentrations equal to or greater than 4.0 pCi/L. A long-term test is considered over 90-days with preferred durations of a full year or significant occupancy (school year).

A follow up short-term test was performed after the annual short-term test indicated a radon in air concentration of 4.0 pCi/L in Room 123 as recommended in the guidance document. The laboratory analysis results indicated radon levels below 4.0 pCi/L at all sampling locations tested; however, the radon in air concentration in Room 123 was 2.6 pCi/L. A subsequent follow up short-term test was performed under normal building conditions with the existing RMS operational throughout the duration of the sampling indicated a radon in air concentration in Room 123 of 2.1 pCi/L (see Section 4.0).

Since radon in air was recorded at 4.0 pCi/L in Room 123 and eight other spaces indicated radon in air concentrations ranging from 2.0 to 3.9 pCi/L, the district considered it prudent to conduct a long-term test. Also, the USEPA recommends that any mitigation decision should only be considered after conducting a long-term test, as this more accurately indicates a normalized radon in air concentration in these spaces.

On February 24, 2023, JCB deployed long-term radon in air test kits in 34 spaces at South Grove Elementary School and 13 spaces at the Annex repeating the annual short-term testing spaces.

The long-term radon in air sampling was performed utilizing laboratory supplied test kits, assigned individual identification numbers, and were secured. Chain of Custody documents were prepared, and the samples were then delivered to an ISO/IEC 17025:2017 accredited laboratory.

RSSI laboratory in Morton Grove, Illinois provided laboratory analytical services. Copies of RSSI's certifications are available upon request.

The laboratory analytical results for the radon in air samples were reviewed and compared to the United States Environmental Protection Agency (USEPA) recommended action level of 4.0 pCi/L as reported in *Radon Measurement in Schools Revised Edition* (EPA 402-R-92-014), dated July 1993.

The following table summarizes the radon analytical results for South Grove Elementary School:

Table No. 2: Summary of Radon Samples Analysis Results – South Grove ES					
AHERA Room Identification	Long-Term Radon Activity pCi/L 5/30/23	Short-Term Radon Activity pCi/L 1/12/23			
Room 2002	0.8	1.5			
Room 2002 – Blank	< 0.1	0.4			
Room 2005	0.5	1.9			
Room 2008	0.8	1.9			
Room 2008 – Duplicate	0.9	1.9			
Room 2011	1.1	1.3			
Room 2015	1.1	1.3			
Room 2018	0.8	2.2			
Room 2023	0.8	1.4			
Room 2027	0.5	1.7			
Room 2030	0.7	1.5			
Room 2032	0.8	1.6			
Room 2041	0.6	2.0			
Room 2043	1.2	1.6			
Room 2044	0.5	1.6			
Room 2045	0.2	0.8			
Room 2050	0.6	1.6			
Room 2052	0.6	2.0			
Room 2052 – Duplicate	0.6	1.9			
Room 2054	0.9	2.2			
Room 2056	0.6	1.6			
Room 2058	0.7	2.4			
Room 2060	0.6	2.1			
Room 2062	0.6	1.9			
Room 2062 – Blank	Did Not Recover	0.2			
Room 2068	0.4	1.2			

Table No. 2: Summary of Radon Samples Analysis Results – South Grove ES					
AHERA Room Identification	Long-Term Radon Activity pCi/L 5/30/23	Short-Term Radon Activity pCi/L 1/12/23			
Room 2068B	0.3	1.0			
Room 2068B – Duplicate	0.4	1.4			
Room 2070	0.6	1.2			
Room 2071	0.7	1.6			
Room 2071 – Blank	<0.1	0.1			
Room 2075	0.9	2.1			
Room 2078	0.9	1.7			
Room 2081	1.2	1.8			
Room 2086	1.0	1.3			
Room 2086 – Duplicate	0.9	1.5			
Room 2089	0.9	1.7			
Room 2096	0.6	1.8			
Room 123	1.8	4.0			
Room 123 - Duplicate	2.2	1.4*			
Room 124	1.5	3.8			
Gym Vestibule	0.6	0.6**			
Gym (stage)	1.0	1.3**			

* Last analyzed on 3/6/2023 ** Last analyzed on 2/15/2023

The following table summarizes the radon analytical results for the Annex:

Table No. 3: Summary of Radon Samples Analysis Results – Annex					
AHERA Room Identification	Long-Term Radon Activity pCi/L 5/30/23	Short-Term Radon Activity pCi/L 1/12/23			
Room 2006A	0.3	0.3			
Room 2009	0.3	0.6			
Room 2009 - Duplicate	0.3	0.5			
Room 2013	0.3	0.4			
Room 2015	0.2	0.2			
Room 2016	0.4	0.4			
Room 2018	0.5	0.4			
Room 2020	0.3	0.4			
Room 2022	0.4	0.4			
Room 2022A	0.3	0.5			
Room 2024	0.3	0.2			
Room 2025	0.3	0.3			
Room 2027	0.2	0.4			

Table No. 3: Summary of Radon Samples Analysis Results – Annex					
AHERA Room Identification	Long-Term Radon Activity pCi/L 5/30/23	Short-Term Radon Activity pCi/L 1/12/23			
Room 2027 - Duplicate	0.3	0.3			
Room 2029	0.4	0.4			
Room 2029 - Blank	<0.1	0.2			

The laboratory analysis results from the long-term radon in air samples submitted did not indicate detectable concentrations of radon exceeding the guidance value established by the USEPA at both the South Grove Elementary School and Annex.

Section No. 8.0: Findings

Since at least 2002, radon has been discovered at the South Grove Elementary School and Annex. To address this issue, a Radon Mitigation System was installed in the Elementary School in late 2003, and it has proven effective in reducing radon levels to acceptable concentrations within the building and occupied areas. During the annual sampling event for the 2022/2023 period, a radon concentration of 4.0 pCi/L was recorded in Room 123, which is a coaches office located in the gym addition. A targeted investigation was conducted in this space, involving multiple short-term follow-up tests, real-time radon monitors, and subsurface soil vapor sampling. Additionally, a long-term radon test was carried out in all previously tested areas.

The follow up short-term tests did not confirm radon concentrations exceeding the guidance value set by the USEPA. The average radon concentration from the short-term tests conducted in Room 123 was 2.0 pCi/L, while in Room 124, it was 1.4 pCi/L.

The real-time radon screening determined that the source of radon was not specific to a particular room and was not affected by factors such as time of day, occupancy, or HVAC system operation. There seemed to be some correlation between radon levels and atmospheric pressure, but further investigation is required. During the screening period, the average radon concentration in Room 123 was calculated at 1.8 pCi/L, and in Room 124, it was 1.9 pCi/L, aligning with the results obtained from the follow up short-term testing.

The soil vapor screening for radon revealed elevated levels of radon in the subsurface soil vapor adjacent to Rooms 123 and 124. The variation in radon concentration appeared to correlate with atmospheric pressure. The screening also identified higher levels of radon in the subsurface soil vapor along the west side of the school building. Further investigation is necessary to confirm the exact source of radon. Studies indicate that most soils in the United States contain radon concentrations between 200 and 2,000 pCi/L. Therefore, it is likely that the subsurface soil vapor is the source of the radon in air detected in Room 123 and Room 124.

The long-term tests did not indicate detectable concentrations of radon exceeding the USEPA's guidance value at both the South Grove Elementary School and Annex. In Room 123, the long-term test indicated a concentration of 1.8 pCi/L; however, the sample duplicate indicated a concentration of 2.2 pCi/L, resulting in an average of 2.0 pCi/L, which is consistent with the follow-up short-term testing. In Room 124, the long-term test indicated a concentration of 1.5 pCi/L.

According to the USEPA "If the testing indicates radon concentrations equal to or greater than 4 pCi/L in any office area, classroom, exercise facility, meeting room, dining area or other common area, reduce the radon to below 4 pCi/L." The USEPA also suggests that radon concentrations below 4 pCi/L still pose a risk to occupants and consider fixing the building when concentrations are greater than half the action level (e.g., between 2 and 4 pCi/L). It is important to note that reducing and accurately confirming radon concentrations around 2 pCi/L or below can be challenging.

Section No. 9.0: Recommendations

The radon mitigation system (RMS) at the South Grove Elementary School has been effective in keeping the concentration of radon in the occupied spaces below 2.0 pCi/L. To achieve the same level within Room 123 and Room 124, the existing RMS could be expanded, or a dedicated RMS designed for the gym addition. Developing an expanded or dedicated mitigation strategy necessitates evaluating conditions throughout the entire building. Additional testing, diagnostic procedures, and engineering would be needed to assess air pressure relationships within and beneath the building to identify the appropriate radon reduction technique and design.

Sincerely, J.C. Broderick & Associates, Inc.

Steven Muller, P.G.

Steven Muller, P.G. Project Manager

Appendix A Figures







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SYOSSET CENTRAL SCHOOL DISTRICT

South Grove Annex

60 Colony Lane, Syosset, NY 11791

Pipe tunnel 1001



Appendix B Field Photograph Logs



Short-Term Radon Sampling Location (typical)



Field Photograph Log

Radon Investigation Report

South Grove Elementary School and South Grove Annex 60 Colony Lane Syosset, New York 11791

Photo No. 01

Real-Time Radon Screening (typical)



Field Photograph Log

Radon Investigation Report

South Grove Elementary School and South Grove Annex 60 Colony Lane Syosset, New York 11791

Photo No. 02

Soil Vapor Screening Adjacent to Room 123





Field Photograph Log

Radon Investigation Report

South Grove Elementary School and South Grove Annex 60 Colony Lane Syosset, New York 11791

Photo No. 03





Field Photograph Log

Radon Investigation Report

South Grove Elementary School and South Grove Annex 60 Colony Lane Syosset, New York 11791

Photo No. 04



Long-Term Radon Sampling Location, with Duplicate



Field Photograph Log

Radon Investigation Report

South Grove Elementary School and South Grove Annex 60 Colony Lane Syosset, New York 11791

Photo No. 05

Appendix C Laboratory Analysis Reports

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June 09, 2023

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Alpha Track Radon Test Results

Detector Number	pCi/L	Test Location	Test Address	Start Date	End Date	Note*
425351	0.4 ±9%	RM 2068	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425352	0.6 ± 8%	RM 2062 - BLANK	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425353	0.7 ±8%	DID NOT RECOVER - NO SAMPLE	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425354	0.6 ± 8%	RM 2070	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425355	0.3±10%	RM 2068B	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425356	0.4 ±9%	RM 2068B - DUP	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425357	< 0.1 ± 13%	DID NOT RECOVER - NO SAMPLE	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	

Analysis was performed at RSSI's laboratory in Morton Grove, Illinois, which is accredited to the ISO/IEC 17025:2017 standard by PJLA under accreditation number 101315. This analysis was performed under the scope of testing certificate L21-761. Analytical results showing the radon concentration relate only to the device(s) tested in the condition as received by RSSI. Results were calculated based on information provided by the client.

Customer Number:

Detector Number	pCi/L	Test Location	Test Address	Start Date	End Date	Note*
425358	0.9 ±7%	RM 2075	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425359	0.9 ± 7%	RM 2078	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425360	1.2 ± 7%	RM 2081	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425361	1.0 ± 7%	RM 2086	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425362	0.9 ± 7%	RM 2086 - DUP	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425363	0.9 ± 7%	RM 2089	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425364	0.6 ± 8%	RM 2096	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425365	0.6 ±8%	VESTIBULE	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425366	1.8 ± 6%	RM 123	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425367	2.2 ± 5%	RM 123 - DUP	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425368	1.5 ± 6%	RM 124	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425370	1.0 ± 7%	STAGE	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	1,

Customer Number:

Detector Number	pCi/L	Test Location	Test Address	Start Date	End Date	Note*
425401	0.8 ± 7%	RM 2002	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425402	< 0.1 ± 12%	RM 2002 - BLANK	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425403	1.5 ± 6%	RM 2005	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425404	0.8 ± 7%	RM 2008	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425406	1.1 ± 7%	RM 2015	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425407	0.8 ± 8%	RM 2018	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425408	0.9 ± 7%	RM 2008 - DUP	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425409	0.8 ± 8%	RM 2023	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425410	0.5 ± 8%	RM 2027	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425411	1.1 ± 7%	RM 2011	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425412	0.7 ± 8%	RM 2030	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425413	1.2 ± 7%	RM 2043	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	

Customer Number:

Detector Number	pCi/L	Test Location	Test Address	Start Date	End Date	Note*
425414	0.6 ± 8%	RM 2041	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425415	0.5 ± 9%	RM 2044	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425416	0.8 ± 7%	RM 2036	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425417	0.2±10%	RM 2045	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425418	0.6 ± 8%	RM 2050	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425419	0.6 ± 8%	RM 2052	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425420	0.9 ± 7%	RM 2054	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425421	0.6 ± 8%	RM 2060	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425422	0.6 ± 8%	RM 2056	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425423	0.6 ± 8%	RM 2062	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425424	0.6 ± 8%	RM 2052 - DUP	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	
425425	0.7 ±8%	RM 2058	60 Colony Lane South Grove ES Syosset, NY 11791	2/24/2023	5/30/2023	

Customer Number:

Analyzed By:

06/08/ 2023

Analysis Date

Naqi Rizvi Radon Analyst

END REPORT

* 1-Broken Seal, 2-Damaged Filter, 3-Loose Test Material, 4-Missing Test Material, 5-Missing End Date, 6-Missing Start Date, 7-Less Than 8 Days, 8-Past Expiration Date, 9-Missing Both Dates, NA-No applicable notes

Analysis was performed at RSSI's laboratory in Morton Grove, Illinois, which is accredited to the ISO/IEC 17025:2017 standard by PJLA under accreditation number 101315. This analysis was performed under the scope of testing certificate L21-761. Analytical results showing the radon concentration relate only to the device(s) tested in the condition as received by RSSI. Results were calculated based on information provided by the client.

Customer Number:

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63 12 West Oakton Street Morton Grove, IL 60053-2723 847-965-1 999 Fax 847-965-1 991

June 09, 2023

J.C. Broderick & Associates, Inc. Steven Muller 1775 Expressway Drive N Hauppauge, NY 11788 USA

Alpha Track Radon Test Results

Detector Number	pCi/L	Test Location	Test Address	Start Date	End Date	Note*
425369	0.3 ± 10%	RM 2006A	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425371	0.3 ± 10%	RM 2009	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425372	0.3 ± 10%	RM 2009 - DUP	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425373	0.3 ± 10%	RM 2013	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425374	0.2±11%	RM 2015	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425375	< 0.1 ± 13%	RM 2015 - BLANK	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425376	0.4 ±9%	RM 2016	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	

Analysis was performed at RSSI's laboratory in Morton Grove, Illinois, which is accredited to the ISO/IEC 17025:2017 standard by PJLA under accreditation number 101315. This analysis was performed under the scope of testing certificate L21-761. Analytical results showing the radon concentration relate only to the device(s) tested in the condition as received by RSSI. Results were calculated based on information provided by the client.

Customer Number:

Detector Number	pCi/L	Test Location	Test Address	Start Date	End Date	Note*
425377	0.5 ± 9%	RM 2018	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425378	0.3 ± 10%	RM 2020	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425379	0.4 ±9%	RM 2022	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425380	0.3 ± 10%	RM 2022A	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425381	0.3 ± 10%	RM 2024	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425382	0.3 ± 10%	RM 2025	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425383	0.2 ± 11%	RM 2027	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425384	0.3 ± 10%	RM 2027 - DUP	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425385	0.4 ±9%	RM 2029	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	
425386	< 0.1 ± 13%	RM 2029 - BLANK	60 Colony Lane South Grove Annex Syosset, NY 11791	2/24/2023	5/30/2023	

Customer Number:

Analyzed By:

06/08/ 2023

Analysis Date

Naqi Rizvi Radon Analyst

END REPORT

* 1-Broken Seal, 2-Damaged Filter, 3-Loose Test Material, 4-Missing Test Material, 5-Missing End Date, 6-Missing Start Date, 7-Less Than 8 Days, 8-Past Expiration Date, 9-Missing Both Dates, NA-No applicable notes

Analysis was performed at RSSI's laboratory in Morton Grove, Illinois, which is accredited to the ISO/IEC 17025:2017 standard by PJLA under accreditation number 101315. This analysis was performed under the scope of testing certificate L21-761. Analytical results showing the radon concentration relate only to the device(s) tested in the condition as received by RSSI. Results were calculated based on information provided by the client.

Customer Number:

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FTLAB RADON DATA FILE MODEL NAME, RadonEye Pro S/N:, RP22211020066 Calibrated:,11/02/2022 TYPE, Inspection Data Inspection Data Name, RP22211020066_27Mar23_1803 Date,03/27/2023 18:03 - 03/31/2023 07:17 Wi-Fi,Off Display, Off DelayTime,0 hour Inspection Duration,85 hour / 120 hour Event,2 Event,03/28/2023 07:57:31 - Movement Event,03/28/2023 07:57:36 - Movement Time step:,1hour Data No:,85 Radon concentration max =,5.4Radon concentration min =,0.3 Overall Avg.=,1.8 EPA Protocol Avg.=,1.8 Radon(pCi/l), Temperature(°F), Humidity(%) Date time, No, 1), 2023-03-27 19:03:36, 2.4, 67, 35 2), 2023-03-27 20:03:36, 2.2, 67, 36 3), 2023-03-27 21:03:36, 36 1.2, 66, 4), 2023-03-27 22:03:36, 36 1.1, 66, 5), 2023-03-27 23:03:36, 35 1.0, 66, 6), 2023-03-28 00:03:36, 1.2, 35 66, 7), 2023-03-28 01:03:36, 35 1.2, 66, 8), 2023-03-28 02:03:36, 1.4, 66, 35 35 9), 2023-03-28 03:03:36, 1.7, 65, 10), 2023-03-28 04:03:36, 1.1, 65, 35 11), 2023-03-28 05:03:36, 1.4, 65, 35 12), 2023-03-28 06:03:36, 1.0, 65, 35 13), 2023-03-28 07:03:36, 1.2, 35 65, 14), 2023-03-28 08:03:36, 1.5, 65, 35 15), 2023-03-28 09:03:36, 1.3, 65, 36 16), 2023-03-28 10:03:36, 1.0, 35 66, 17), 2023-03-28 11:03:36, 1.3, 67, 35 34 18), 2023-03-28 12:03:36, 1.2, 67, 19), 2023-03-28 13:03:36, 34 0.8, 68, 20), 2023-03-28 14:03:36, 0.3, 67, 34 21), 2023-03-28 15:03:36, 1.4, 34 67, 22), 2023-03-28 16:03:36, 1.2, 67, 34 23), 2023-03-28 17:03:36, 1.9, 68, 33 24), 2023-03-28 18:03:36, 33 0.9, 68, 25), 2023-03-28 19:03:36, 0.7, 33 67, 26), 2023-03-28 20:03:36, 0.8, 67, 33 27), 2023-03-28 21:03:36, 0.8, 67, 33 28), 2023-03-28 22:03:36, 1.0, 67, 33 29), 2023-03-28 23:03:36, 1.0, 67, 34

30),	2023-03-29	00:03:36,	1.0,	67,	33
31),	2023-03-29	01:03:36,	1.5,	67,	33
32),	2023-03-29	02:03:36,	1.9,	67,	32
33),	2023-03-29	03:03:36,	2.0,	67,	32
34),	2023-03-29	04:03:36,	2.8,	67,	32
35),	2023-03-29	05:03:36,	2.3.	66,	31
36),	2023-03-29	06:03:36,	2.5.	66,	31
37).	2023-03-29	07:03:36.	1.9.	66.	31
38).	2023-03-29	08:03:36.	1.3.	66.	30
39).	2023-03-29	09:03:36.	1.7.	67.	30
40).	2023-03-29	10:03:36.	1.5.	67.	30
41).	2023-03-29	11:03:36.	1.8.	68.	30
42).	2023-03-29	12:03:36.	2.2.	67.	30
43).	2023-03-29	13.03.36	2.5.	68.	30
44).	2023-03-29	14.03.36	3.9.	68.	30
45).	2023-03-29	15.03.36	4.3.	68.	31
46)	2023-03-29	16.03.36	4.8	68	30
47)	2023-03-29	17.03.36	4.0,	68	30
48)	2023-03-29	18.03.36	- ∪, ,	68	30
49)	2023-03-29	19.03.36	3.1,	68	31
50)	2023-03-29	20.03.36	2.6	68	31
51)	2023-03-29	20.03.30, $21.03.36$	2.0,	67	31
52)	2023-03-29	22.03.30	3.6	67	31
53)	2023-03-29	22.03.30,	4 1	68	31
54)	2023-03-30	29.03.30, 00.03.36	-,., 5 <i>A</i>	68	31
55)	2023-03-30	00.03.30, 01.03.36	53	67	31
56)	2023-03-30	02.03.36	3.3, 3 1	67	31
57).	2023-03-30	03.03.36	1.8.	67,	31
58)	2023-03-30	01·03·36	1 0	67	29
59)	2023-03-30	05.03.36	10	67	22
60)	2023-03-30	06.03.36	1 0	66	20
61)	2023-03-30	00.03.30,	A 9	66,	27
62)	2023-03-30	07:03:30,	0.5,	66,	26
63)	2023-03-30	00.03.36	0.0,	67	25
64)	2023-03-30	10.03.36	0.0,	68	25
65)	2023-03-30	11.03.36	1 4	69 69	23
66)	2023-03-30	12.03.36	10	69 69	25
67)	2023-03-30	12.03.30, $13.03.36$	и.u,	69 69	23
68)	2023-03-30	14.03.36	0. <i>J</i> , 1 <i>A</i>	70	24
69)	2023-03-30	15.03.36	2.7	70,	25
70)	2023-03-30	16.03.36	2.2,	70,	23
70),	2023-03-30	17.03.36	2.2,	70,	24
72)	2023-03-30	18.03.36	2.0,	70,	24
731	2023-03-30	19.02.36	1.6	70, 70	2 4 24
74)	2023-03-30	20:03.36	1.7.	70,	2 4 24
75)	2023-03-30	21.03.36	1 7	70, 70	2 4 2 <u>/</u>
76)	2023-03-30	22.03.30,	10	70, 70	2 4 24
77)	2023-03-30	23.02.36	1.0	, 0, 71	2 4 24
78)	2023-03-30	00:03.36	1.1.	71,	2 4 23
79)	2023-03-31	01.02.36	1.4	72	25
, - , ,	2025 05 51	51.05.50,	±•+)	, <u> </u>	25

80),	2023-03-31	02:03:36,	1.4,	72,	23
81),	2023-03-31	03:03:36,	2.1,	72,	23
82),	2023-03-31	04:03:36,	1.6,	72,	23
83),	2023-03-31	05:03:36,	1.9,	72,	23
84),	2023-03-31	06:03:36,	1.9,	71,	22
85),	2023-03-31	07:03:36,	1.8,	71,	22

FTLAB RADON DATA FILE MODEL NAME RadonEye Pro S/N: RP22302090068 Calibrated: 2/9/2023 TYPE Inspection Data Inspection Data Name RP22302090068_27Mar23_1805 03/27/2023 18:05 - 03/31/2023 07:18 Date Wi-Fi Off Display Off 0 hour DelayTime Inspection Duration 85 hour / 120 hour Event 0 Time step: 1hour Data No: 85 Radon concentration max = 5.1 Radon concentration min = 0.5 Overall Avg.= 1.9 EPA Protocol Avg.= 1.9 Radon(pCi/l) Temperature(°F) Date time No Humidity(%) 2.1 1) 2023-03-27 19:05:11 72 31 2) 72 2023-03-27 20:05:11 2 31 3) 2023-03-27 21:05:11 1.1 72 31 4) 2023-03-27 22:05:11 1.2 72 31 5) 0.7 72 2023-03-27 23:05:11 31 6) 2023-03-28 00:05:11 1.2 72 31 7) 2023-03-28 01:05:11 0.9 71 31 0.9 72 8) 2023-03-28 02:05:11 31 9) 2023-03-28 03:05:11 1 72 30 10) 2023-03-28 04:05:11 1.1 72 30 11) 0.8 71 30 2023-03-28 05:05:11 1.2 71 30 12) 2023-03-28 06:05:11 13) 2023-03-28 07:05:11 1.4 71 30 14) 2023-03-28 08:05:11 1.5 71 30 15) 2023-03-28 09:05:11 1.3 72 31 73 16) 2023-03-28 10:05:11 0.6 30 1.1 74 17) 2023-03-28 11:05:11 30 1.3 75 29 18) 2023-03-28 12:05:11 19) 2023-03-28 13:05:11 1 75 30 20) 2023-03-28 14:05:11 1.1 76 28 21) 2023-03-28 15:05:11 1.6 76 27 22) 76 27 2023-03-28 16:05:11 2 1.2 23) 2023-03-28 17:05:11 76 25 1.5 76 25 24) 2023-03-28 18:05:11 76 25 25) 2023-03-28 19:05:11 0.8 76 25 26) 2023-03-28 20:05:11 1 27) 2023-03-28 21:05:11 1.4 76 25 25 28) 2023-03-28 22:05:11 0.5 76 29) 0.8 75 27 2023-03-28 23:05:11 30) 2023-03-29 00:05:11 1.8 76 26

31)	2023-03-29	01:05:11	3.8	77	26
32)	2023-03-29	02:05:11	3.8	77	25
33)	2023-03-29	03:05:11	3.1	77	25
34)	2023-03-29	04:05:11	4.7	77	25
35)	2023-03-29	05:05:11	3.7	76	24
36)	2023-03-29	06:05:11	2.8	76	23
37)	2023-03-29	07:05:11	2.6	76	22
38)	2023-03-29	08:05:11	1.4	76	22
39)	2023-03-29	09:05:11	1.2	72	25
40)	2023-03-29	10:05:11	1.8	75	23
41)	2023-03-29	11:05:11	1.7	77	22
42)	2023-03-29	12:05:11	2	77	21
43)	2023-03-29	13:05:11	2.6	77	21
44)	2023-03-29	14:05:11	2.8	77	21
45)	2023-03-29	15:05:11	3.5	77	22
46)	2023-03-29	16:05:11	3.3	77	22
47)	2023-03-29	17:05:11	3.8	78	22
48)	2023-03-29	18:05:11	3.7	74	23
49)́	2023-03-29	19:05:11	2.7	75	23
50)	2023-03-29	20:05:11	2.1	77	23
51)	2023-03-29	21:05:11	2.4	77	23
52)	2023-03-29	22:05:11	2.4	77	23
53)	2023-03-29	23:05:11	4.4	77	24
54)́	2023-03-30	00:05:11	5.1	77	24
55)	2023-03-30	01:05:11	4.4	77	24
56)	2023-03-30	02:05:11	3.9	77	23
57)	2023-03-30	03:05:11	2.4	77	23
58)	2023-03-30	04:05:11	1.8	77	21
59)	2023-03-30	05:05:11	0.7	77	20
60)	2023-03-30	06:05:11	1.1	76	18
61)	2023-03-30	07:05:11	1.1	76	17
62)	2023-03-30	08:05:11	0.5	76	16
63)	2023-03-30	09:05:11	0.8	75	17
64)́	2023-03-30	10:05:11	1.3	75	16
65)	2023-03-30	11:05:11	0.7	75	16
66)	2023-03-30	12:05:11	0.5	76	16
67)́	2023-03-30	13:05:11	0.8	76	16
68)	2023-03-30	14:05:11	1.4	77	16
69)	2023-03-30	15:05:11	2.6	77	16
70)	2023-03-30	16:05:11	1.9	77	15
71)	2023-03-30	17:05:11	1.6	77	15
72)	2023-03-30	18:05:11	1.9	77	15
73)	2023-03-30	19:05:11	1.8	77	14
74)	2023-03-30	20:05:11	1.2	77	14
75)́	2023-03-30	21:05:11	1.3	77	14
76)	2023-03-30	22:05:11	0.9	77	15
77)́	2023-03-30	23:05:11	1.2	78	16
78)	2023-03-31	00:05:11	1.2	78	16
79)́	2023-03-31	01:05:11	1.9	78	16
80)	2023-03-31	02:05:11	2	78	16
•					

81)	2023-03-31	03:05:11	1.5	78	16
82)	2023-03-31	04:05:11	2.1	78	16
83)	2023-03-31	05:05:11	2.6	78	16
84)	2023-03-31	06:05:11	1.9	77	15
85)	2023-03-31	07:05:11	2	77	15