



Cascade Radon, Inc.  
Testing, Mitigation,  
Systems Design  
CCB 180537 / CASCARI927C1  
Fed ID 26-1809992

12839 NE Airport Way Bldg. 9  
Portland, Oregon 97230  
Phone: (503) 421-4813  
Fax: (503) 281-6170  
Office@CascadeRadon.com

# **Skyline Elementary School**

**11536 NW Skyline Blvd. Portland, OR 97231**

**October 23, 2017**



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## **Purpose**

**Initial testing was performed December 12, 2016 to December 16, 2016 by PBS Engineering and Environmental Inc. Testing indicated 12.3 pCi/L in room 105A of the building. In January of 2017 a follow up test was performed in room 105A using a continuous radon monitor, the result of that test came back with a radon average of 10.6 pCi/L. Cascade Radon was hired to diagnose the the effected room and develop a mitigation strategy to reduce the radon levels.**

**The installation of a sub-slab depressurization system was used to reduce the radon below the EPA action level of 4 pCi/L. See attached pages for a description of the system components.**



**The mitigation system's suction point is located in room 105B adjacent to room 105A. This suction point proved effective in reducing the radon levels well below the EPA's action level in room 105A. The suction point creates negative pressure below the concrete slab of the building, by creating this pressure in the soil it will hold the radon gas down and redirect it to our vent piping. This vent piping is connected to a suction fan on the exterior of the building.**

**The system includes a manometer (pressure gauge), which is a simple means of seeing the system is working mechanically. A manometer also shows how much negative pressure (depressurization) the system is creating. It is understood such a pressure gauge DOES NOT monitor radon levels.**



**This pictures shows the fan and the continuation of the vent piping discharging above the roofline**

**Guarantee/Warranty/Service Agreement:**

- 1. Contractor guarantees that this installation will maintain average radon levels, based upon 12-month long-term Alpha-Track testing, at below the EPA Action Level of 4.0 pCi/L for a period of 10 years, in room 105A and 105B, subject to the terms of this contract.**
- 2. It is recommended that 12-month long-term Alpha-Track testing shall be performed by the Client and in accordance with current ANSI/AARST MAMF and EPA standards for schools.**
- 3. If, at any time during this Warranty period, the results of approved, 12-month long-term Alpha-Track radon tests are above 4.0 pCi/L, the Contractor shall take appropriate and necessary steps, as determined by the Contractor, and at no cost to the Client, to lower average, long-term radon levels to below 4.0 pCi/L.**
- 4. With the exception of the exhaust fan unit(s), the Contractor will repair or replace any defective mechanical or electrical components in the system, at no cost to the Client, for a period of 10 years, beginning at the time of initial system activation.**
- 5. Includes a 5-year, replacement warranty on exhaust fan unit, beginning at the time of initial activation with any related work and materials provided at no cost to the Client.**
- 6. All warranties and guaranties are extended to future owners of same property.**

**Fan specifications:**

FESTA RADON TECHNOLOGIES CO.

# AMG EAGLE

AMG EAGLE

**Performance Figures – AMG Eagle, AMG Radon Extract Fan**

**CFM at STATIC PRESSURE in w.g.**

Model	Volts	Watts Max.	Amps	0"	0.5"	0.75"	1.0"	1.25"	1.5"	1.75"	2.0"	2.25"	2.5"	2.75"	3.0"	3.25"	3.5"	3.985"
AMG Eagle	115V 60 Hz	160	1.37	124	114	109	104	99	91	83	76	69	61	52	41	30	18	0

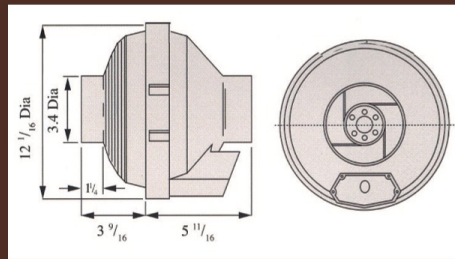
Weight 12 lbs. 1 oz. Fan Speed: 3150 rpm

Performance shown is for installation type D-Ducted inlet, Ducted outlet.

Performance ratings do not include the effects of appurtenances in the airstream.

Speed (rpm) shown is nominal. Performance is based on actual speed of test.

The performance figures shown have been corrected to standard air density.



# Credentials

**Cascade Radon, Inc.**  
12839 NE Airport Way Bldg. 9  
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office@cascaderadon.com  
CCB180537  
CASCARI977C1  
NEHA/NRPP# 104815RMT  
NRSB# 1G0008

**Accurate Concrete Cutting**  
6816 NE 40th Ave.  
Vancouver, WA 98661  
lj@accurate-concrete-cut.com  
CCB191788  
W.A. Contr. License# ACCURCC153M2

**Christensen Electric, Inc.**  
17201 NE Sacramento Street  
Portland, OR 97230  
(503)419-3300  
info@christenson.com  
CCB458



## TEST DETAILS:

Skyline Elementary  
 11536 NW Skyline Blvd  
 Portland, OR 97231

Portland Public Schools

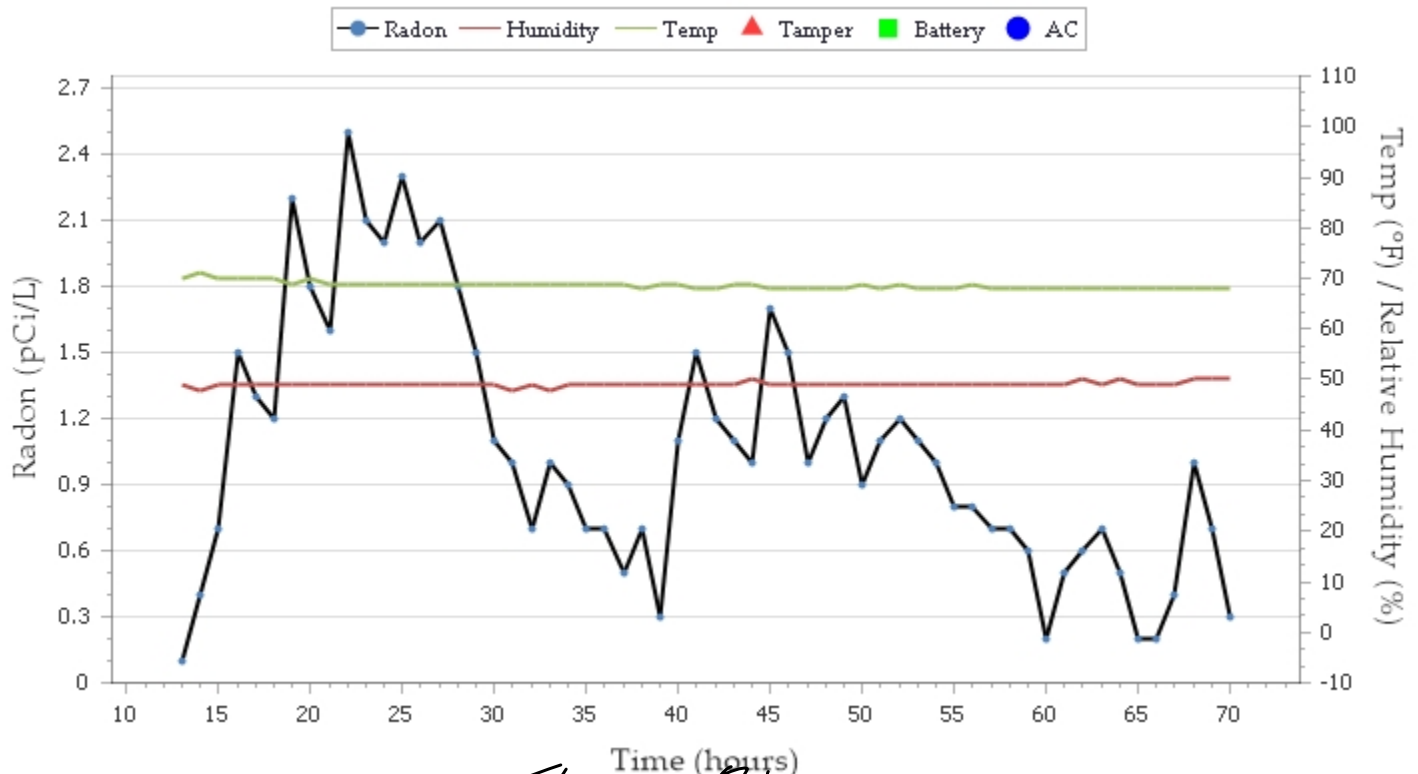
**Test Start Date/Time:** Friday, September 22, 2017 // 11:00 AM  
**Test End Date/Time:** Monday, September 25, 2017 // 8:00 AM  
**Location of Instrument:** Classroom 105A

**Notes:**

## TEST RESULTS:

**Average:** 1.0 pCi/L

**Test ID#** 80345



*Tamara Linde*

9/25/17

Tamara Linde  
 Certification #:  
 License 1:  
 License 2:

Date  
 CCB 180537/ CASCARI927C1  
 NRPP 108946RT, 108953RT





## INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha
13				0.1	70	49	6
14				0.4	71	48	13
15				0.7	70	49	22
16				1.5	70	49	47
17				1.3	70	49	42
18				1.2	70	49	39
19				2.2	69	49	70
20				1.8	70	49	58
21				1.6	69	49	53
22				2.5	69	49	81
23				2.1	69	49	68
24				2.0	69	49	64
25				2.3	69	49	73
26				2.0	69	49	63
27				2.1	69	49	68
28				1.8	69	49	58
29				1.5	69	49	50
30				1.1	69	49	37
31				1.0	69	48	33
32				0.7	69	49	22
33				1.0	69	48	33
34				0.9	69	49	29
35				0.7	69	49	24
36				0.7	69	49	22
37				0.5	69	49	16
38				0.7	68	49	23
39				0.3	69	49	11
40				1.1	69	49	35
41				1.5	68	49	47
42				1.2	68	49	40
43				1.1	69	49	37
44				1.0	69	50	33
45				1.7	68	49	56
46				1.5	68	49	48
47				1.0	68	49	33
48				1.2	68	49	40
49				1.3	68	49	43
50				0.9	69	49	31
51				1.1	68	49	37
52				1.2	69	49	38
53				1.1	68	49	36
54				1.0	68	49	34
55				0.8	68	49	27
56				0.8	69	49	27
57				0.7	68	49	24
58				0.7	68	49	22
59				0.6	68	49	21
60				0.2	68	49	9
61				0.5	68	49	17
62				0.6	68	50	21
63				0.7	68	49	23
64				0.5	68	50	18
65				0.2	68	49	8
66				0.2	68	49	7
67				0.4	68	49	14
68				1.0	68	50	32
69				0.7	68	50	24

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70		0.3	68	50	12		
<b>Minimum:</b>	0.1 pCi/L	<b>Maximum:</b>	2.5 pCi/L	<b>Average:</b>	1.0 pCi/L		

Tamara Linde

9/25/17

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT



## TEST DETAILS:

Skyline Elementary  
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Portland Public Schools

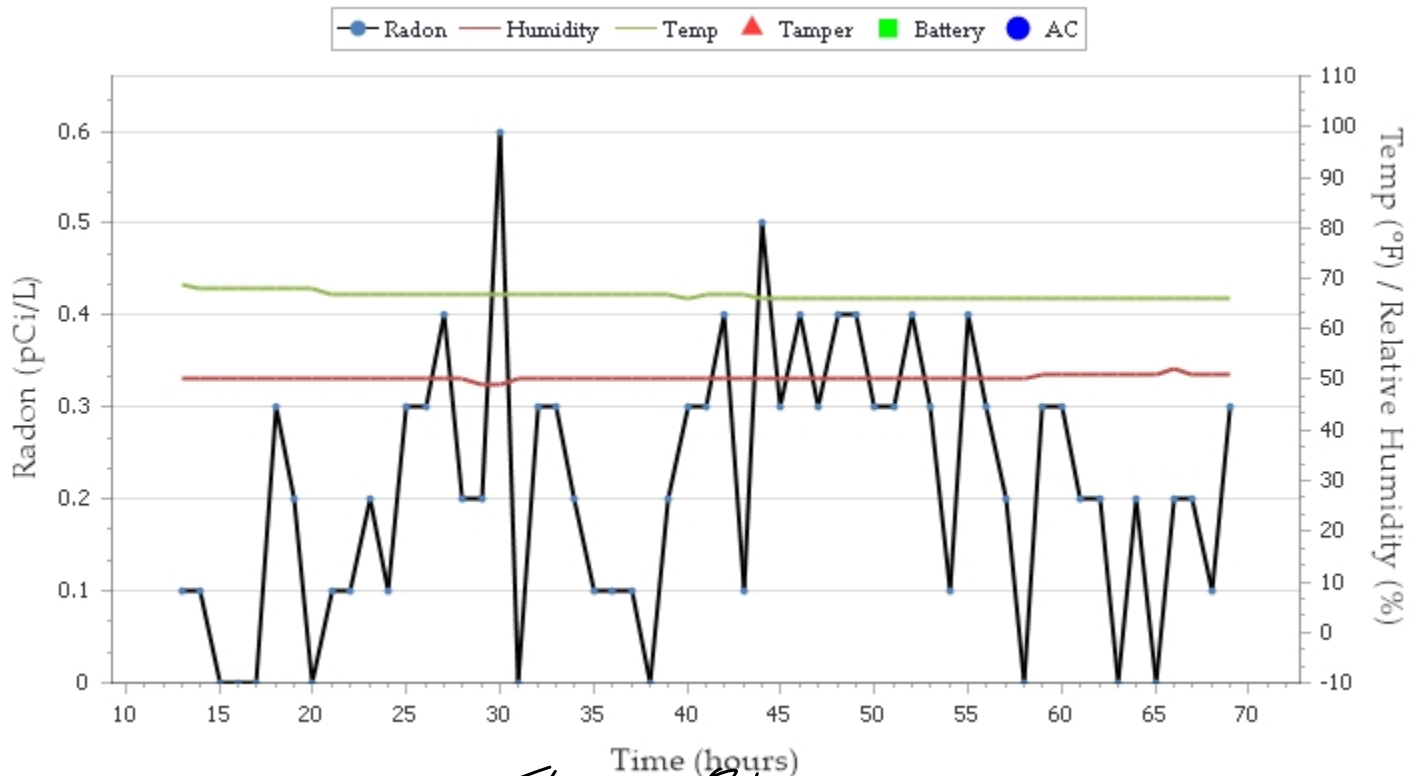
**Test Start Date/Time:** Friday, September 22, 2017 // 11:00 AM  
**Test End Date/Time:** Monday, September 25, 2017 // 8:00 AM  
**Location of Instrument:** Classroom 105B

**Notes:**

## TEST RESULTS:

**Average:** 0.2 pCi/L

**Test ID#** 80183



*Tamara Linde*

9/25/17

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 License 1:  
 License 2:

Date

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## INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha
13				0.1	69	50	5
14				0.1	68	50	5
15				0.0	68	50	2
16				0.0	68	50	0
17				0.0	68	50	0
18				0.3	68	50	12
19				0.2	68	50	9
20				0.0	68	50	3
21				0.1	67	50	5
22				0.1	67	50	4
23				0.2	67	50	8
24				0.1	67	50	4
25				0.3	67	50	13
26				0.3	67	50	12
27				0.4	67	50	14
28				0.2	67	50	7
29				0.2	67	49	9
30				0.6	67	49	20
31				0.0	67	50	1
32				0.3	67	50	10
33				0.3	67	50	13
34				0.2	67	50	8
35				0.1	67	50	5
36				0.1	67	50	5
37				0.1	67	50	6
38				0.0	67	50	2
39				0.2	67	50	8
40				0.3	66	50	12
41				0.3	67	50	12
42				0.4	67	50	14
43				0.1	67	50	6
44				0.5	66	50	17
45				0.3	66	50	11
46				0.4	66	50	14
47				0.3	66	50	12
48				0.4	66	50	16
49				0.4	66	50	16
50				0.3	66	50	13
51				0.3	66	50	12
52				0.4	66	50	14
53				0.3	66	50	13
54				0.1	66	50	4
55				0.4	66	50	15
56				0.3	66	50	10
57				0.2	66	50	8
58				0.0	66	50	2
59				0.3	66	51	10
60				0.3	66	51	10
61				0.2	66	51	9
62				0.2	66	51	7
63				0.0	66	51	3
64				0.2	66	51	8
65				0.0	66	51	1
66				0.2	66	52	7
67				0.2	66	51	9
68				0.1	66	51	6
69				0.3	66	51	11

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**Minimum:** 0.0 pCi/L      **Maximum:** 0.6 pCi/L      **Average:** 0.2 pCi/L

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Date

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