



CASCADE RADON, INC.
Testing, Mitigation,
Systems Design
CCB 180537 / CASCARI927C1

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Portland, OR 97230
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Radon Survey Analysis Job #18-C047S

for

David Douglas School District
High School, South Campus
c/o David Callaway

property located at

1400 SE 130th Ave

Portland OR 97233

August 16, 2018



Introduction

The following report documents a study of radon levels for the property located at 1001 SE 135th Ave Portland OR 97233. The goal of this study is to determine indoor radon levels for areas which previous short-term testing indicated had elevated levels. Testing performed following adjustment to building HVAC systems.

Analysis assumes that the buildings tested were maintained under “closed-building” conditions (windows closed and exterior doors shut immediately after entering and exiting), as well as normal indoor temperatures, for the duration of the testing period. The H-VAC system for each building was set to normal occupied settings for the entirety of the testing period.

Conclusions and Recommendations

Test was a “Short-Term” test, with minimum duration of 48 hours. See the chart below of areas in buildings that were tested, and the corresponding levels found. Maps of the test locations are provided in Appendix A. Monitor downloaded data is provided in Appendix B. Note that four (4) locations tested had results above the USEPA Action Level of 4.0 pCi/L.

This report represents the average radon concentration for the period that testing was and at the specific location(s) within the building. The concentration of radon gas in indoor air can vary widely; it fluctuates daily, seasonally, and with weather conditions. Indoor radon levels may be affected by barometric pressure, strong winds, rain-soaked ground, snow cover, heating and A/C systems, building construction, open windows, and the like. For further confirmation of average, long-term radon levels, it is suggested that long-term, Alpha-Track type radon testing be performed.

NOTE: It is recommended that any building indicating low radon values be retested at least every 5 years. In areas where mitigation has been performed, it is recommended to test using long-term testing at least every 2 years.

Radon Level Measurements

The building tested was assumed occupied during testing.

The measurement technique used RadStar RS800 and Sun Nuclear 2700 continuous radon monitors.

Measurements of radon levels were made in the following areas:

Table 1: Results

Room	Floor	Monitor ID	Tests Start Date	Test Start Time	Test End Date	Test End Time	Result (pCi/L)
240	1	75695092	7/9/2018	9:00 AM	7/11/2018	9:00 AM	3.1
241	1	68555036	7/11/2018	9:00 AM	7/13/2018	9:00 AM	2.7
241 Storage	1	31265095	7/11/2018	9:00 AM	7/13/2018	9:00 AM	2.3
241A	1	73231092	7/11/2018	9:00 AM	7/13/2018	9:00 AM	2.2
241 B	1	68555087	7/9/2018	9:00 AM	7/11/2018	9:00 AM	2.8
241C	1	31265095	7/9/2018	9:00 AM	7/11/2018	9:00 AM	2.1
241D	1	68555036	7/9/2018	9:00 AM	7/11/2018	9:00 AM	2.8
241E	1	78293011	7/9/2018	9:00 AM	7/11/2018	9:00 AM	2.8
241F	1	73231092	7/9/2018	9:00 AM	7/11/2018	9:00 AM	2.8

Document Storage	B	75690511	7/9/2018	9:00 AM	7/11/2018	9:00 AM	3.0
Large Storage Space	B	2132	7/9/2018	9:00 AM	7/11/2018	9:00 AM	4.4
Classroom Supply Storage	B	78293197	7/9/2018	9:00 AM	7/11/2018	9:00 AM	4.9
Small Storage Room South	B	1893	7/9/2018	9:00 AM	7/11/2018	9:00 AM	4.6
Theater Storage	B	74634034	7/9/2018	9:00 AM	7/11/2018	9:00 AM	4.1
South, Boy's Locker Room Office	1	75695011	7/11/2018	11:00 AM	7/13/2018	11:00 AM	2.8
South, Coach's Office (East Room)	1	78293011	7/11/2018	10:00 AM	7/13/2018	10:00 AM	2.7
Coach's Meeting Room	1	2132	7/13/2018	10:30 AM	7/16/2018	12:00 PM	3.6
Dance Room – West Wall	1	1893	7/13/2018	10:30 AM	7/16/2018	12:00 PM	0.4
Dance Room – East Wall	1	1806	7/13/2018	10:30 AM	7/16/2018	12:00 PM	1.1
South, Girl's Locker Room Office	1	75695092	7/11/2018	10:00 AM	7/13/2018	10:00 AM	3.5
Food Pantry	1	68555087	7/11/2018	9:00 AM	7/13/2018	9:00 AM	2.6
Stage	1	1893	7/11/2018	9:00 AM	7/13/2018	9:00 AM	2.6

Key:

pCi/L: Picocuries per liter – units of radon concentration.

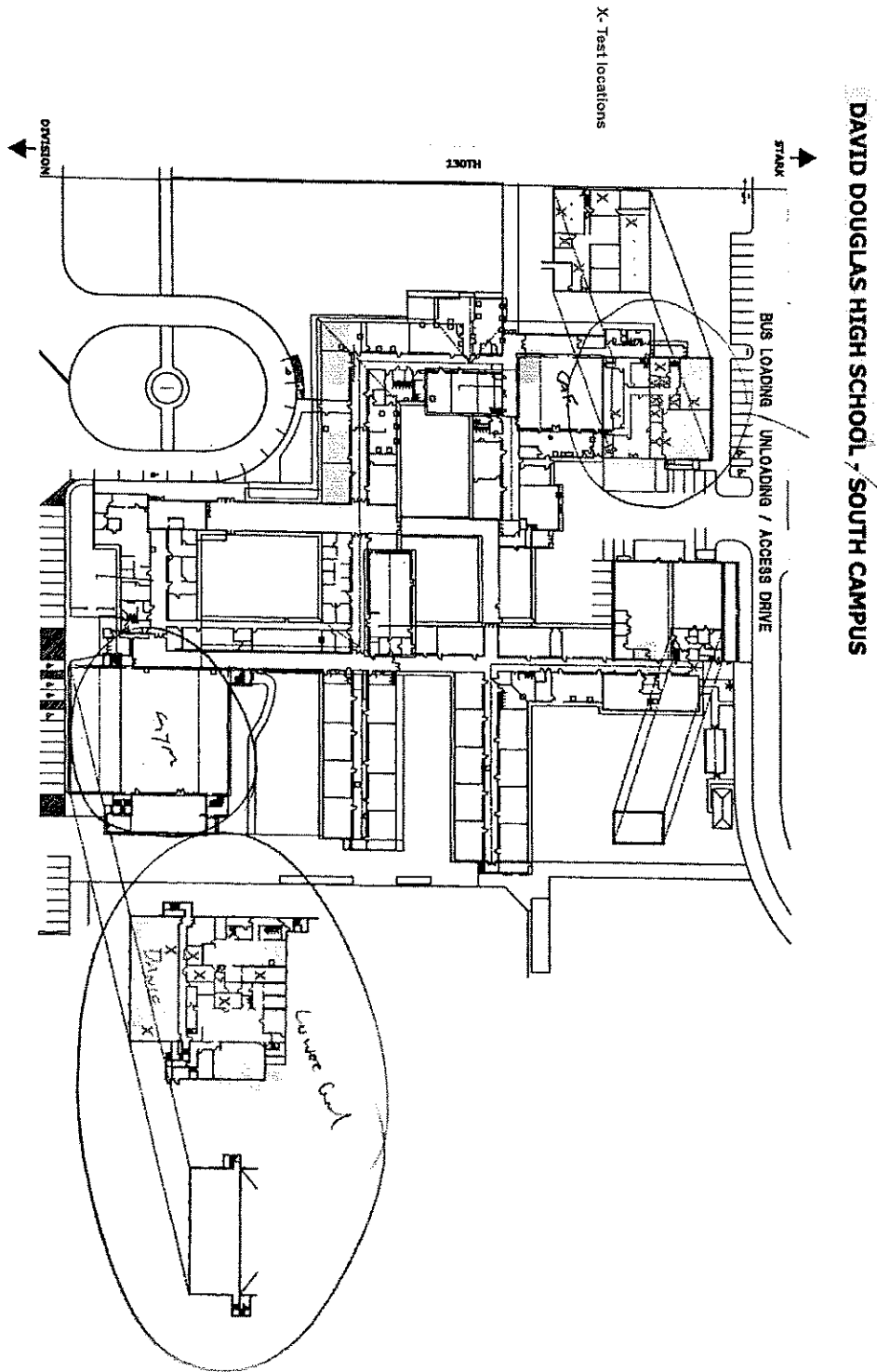
Average (Avg): Cumulative average of the entire period since the test started.

Please contact me if you have any questions.

Thank you,

Tamara Linde
NRPP 108246 RT

Appendix A: Map of Radon Monitor Placement locations



Appendix B: Monitor Test Data

SunNuclear Monitor Test Data Reports:

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 75695092
Location : 240 DDS

Start Date : 7/11/2018
Start Time : 9:00:00 AM
End Date : 7/13/2018
End Time : 9:00:00 AM
Serial # : 68555036
Location : 241 DDS

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

1.3	2.6	2.6
0.8	2.6	3.9
1.7	1.7	2.6
2.1	3.0	2.1
4.8	4.4	3.5
2.1	1.7	2.1
5.3	1.7	2.1
3.0	3.0	0.8
1.7	0.8	3.0
4.8	1.7	0.8
4.4	4.4	4.8
3.0	3.5	3.5
4.4	5.7	1.3
3.5	2.6	3.9
3.9	2.6	3.9
4.4	3.9	

	2.0	2.0	T	2.4
T	2.0	T	5.6	2.4
	3.2	3.2		2.8
	2.0	3.6		3.2
	4.4	4.4		6.4
	2.0	3.6		1.5
	2.0	1.5		2.0
	4.0	4.0		3.2
	2.8	2.0	T	2.8
T	3.2	T	2.0	0.3
	4.8	3.2		2.0
	1.1	1.1		2.0
	0.0	2.8		2.8
	1.1	3.2		1.5
	2.4	2.4		4.8
	2.4			

Overall Avg.= 3.0
EPA Protocol Avg.= 3.1

Overall Avg.= 2.7
EPA Protocol Avg.= 2.7

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/11/2018
Start Time : 9:00:00 AM
End Date : 7/13/2018
End Time : 9:00:00 AM
Serial # : 31265095
Location : 241 Storage DDSD

Start Date : 7/11/2018
Start Time : 9:00:00 AM
End Date : 7/13/2018
End Time : 9:00:00 AM
Serial # : 73231092
Location : 241A DDSD

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

1.8	1.8	2.9
1.4	1.4	1.4
2.5	1.8	1.8
3.2	3.2	2.5
2.5	2.1	2.9
2.1	2.5	2.1
2.5	2.9	2.1
2.1	2.1	3.6
1.0	1.8	1.4
1.8	0.7	1.4
2.1	3.2	3.6
0.7	1.8	3.6
2.9	1.8	2.1
1.8	2.1	2.9
2.5	1.8	3.6
2.9		

4.3	4.3	3.6
2.1	1.0	3.6
2.1	2.5	1.8
3.6	5.1	2.9
2.5	4.0	1.4
1.0	2.5	1.0
2.5	3.2	2.9
1.8	1.4	1.0
2.9	1.0	2.5
2.1	2.5	1.0
1.8	0.7	2.9
2.5	2.1	2.1
0.3	1.0	1.8
2.9	4.3	0.3
1.8	3.6	1.4
3.2		

Overall Avg.= 2.3
EPA Protocol Avg.= 2.3

Overall Avg.= 2.4
EPA Protocol Avg.= 2.2

Cascade Radon
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Portland OR 97203

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Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 68555087
Location : 241B DDSD

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 31265095
Location : 241C DDSD

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

0.4	1.3	4.4
1.7	1.7	2.1
3.9	1.7	0.8
3.5	2.6	4.4
3.0	2.1	1.3
2.6	3.5	2.1
2.6	2.6	4.4
1.3	3.5	2.1
2.6	1.7	3.0
3.5	3.9	3.5
1.7	2.1	3.0
4.4	0.0	3.9
3.5	3.0	2.6
1.7	1.7	2.6
3.9	4.4	4.8
1.3	3.5	

4.3	3.6	2.5
2.9	2.1	1.8
1.0	0.7	0.3
2.1	2.9	1.8
1.8	2.5	2.9
2.1	1.8	2.5
2.5	1.0	2.5
3.2	1.8	2.1
2.9	2.1	4.3
1.8	2.5	0.3
2.9	1.8	2.9
0.7	1.8	1.4
2.1	1.4	2.1
2.9	2.1	4.3
1.4	1.4	1.8
3.6	2.5	

Overall Avg.= 2.7
EPA Protocol Avg.= 2.8

Overall Avg.= 2.2
EPA Protocol Avg.= 2.1

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 68555036
Location : 241D DDSD

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 78293011
Location : 241E DDSD

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

2.4	1.1	0.7
0.3	1.5	2.8
2.0	2.0	2.4
4.8	4.0	2.0
6.4	2.4	4.4
5.2	2.8	2.8
3.6	3.2	2.8
0.7	2.4	3.2
3.2	1.1	1.5
2.4	3.2	2.8
3.6	4.8	2.4
2.8	2.8	3.6
4.0	2.8	2.8
2.0	5.2	3.6
1.1	1.5	2.0
2.0	0.7	

1.5	1.1	1.5
2.4	2.4	3.2
3.6	5.6	2.4
3.2	3.6	1.5
2.4	2.0	4.8
2.8	3.6	1.5
2.0	2.0	4.0
5.2	1.5	1.1
3.2	3.2	4.8
2.0	0.7	2.4
3.6	2.4	2.4
2.0	2.0	2.8
4.0	2.4	4.0
2.8	1.5	1.1
2.4	2.8	2.4
1.5	3.6	

Overall Avg.= 2.7
EPA Protocol Avg.= 2.8

Overall Avg.= 2.7
EPA Protocol Avg.= 2.8

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 73231092
Location : 242F DDSD

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 75690511
Location : Documents Storage DDSC

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

2.5	1.0	2.5
4.0	3.6	2.5
1.8	1.8	2.1
4.0	3.2	2.9
2.1	4.3	2.5
2.1	1.8	3.6
3.2	3.2	2.5
1.4	3.2	2.9
4.0	1.4	0.7
5.1	2.1	3.2
4.3	2.9	5.1
3.6	3.2	1.0
1.0	1.8	2.9
4.3	2.1	1.4
4.0	2.9	2.5
1.8	1.4	

1.4	3.6	2.5
2.5	1.4	2.1
3.6	3.2	3.6
4.7	3.2	3.2
3.2	5.5	2.1
1.8	2.5	1.4
4.0	2.9	3.6
2.1	1.8	3.6
2.1	3.6	2.5
2.1	4.0	2.1
2.1	6.2	2.1
5.1	3.6	3.2
1.4	3.2	3.6
3.2	1.0	2.1
3.2	3.2	2.9
3.6	3.6	

Overall Avg.= 2.8
EPA Protocol Avg.= 2.8

Overall Avg.= 3.0
EPA Protocol Avg.= 3.0

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 78293197
Location : Classroom Supply Storage DDSC

Start Date : 7/9/2018
Start Time : 9:00:00 AM
End Date : 7/11/2018
End Time : 9:00:00 AM
Serial # : 74634034
Location : Basement theater
storage DDSC

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

1.1	2.0	4.3
3.1	2.8	2.8
2.3	3.6	2.3
3.1	3.6	4.8
3.1	3.1	4.8
2.0	3.6	4.0
2.3	4.3	2.8
2.8	4.8	4.0
0.3	2.0	3.6
4.0	2.8	5.1
7.6	14.0	12.5
12.5	14.0	6.4
7.2	11.6	6.4
7.6	5.1	5.6
5.1	3.1	2.3
2.8	2.0	

6.4	4.0	3.2
4.0	1.1	3.6
4.4	2.4	3.6
5.2	3.6	4.8
2.0	4.0	6.0
5.2	3.2	4.0
3.6	6.0	4.4
5.6	2.4	4.0
2.8	3.6	3.2
6.4	4.0	4.4
3.2	3.6	5.2
3.2	6.0	4.0
3.2	4.0	4.8
5.6	5.2	2.4
2.0	3.6	4.8
6.0	6.4	

Overall Avg.= 4.7
EPA Protocol Avg.= 4.9

Overall Avg.= 4.1
EPA Protocol Avg.= 4.1

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/11/2018
Start Time : 10:00:00 AM
End Date : 7/13/2018
End Time : 10:00:00 AM
Serial # : 78293011
Location : Coach's Office (E RM) DDSD

Start Date : 7/9/2018
Start Time : 11:00:00 AM
End Date : 7/11/2018
End Time : 11:00:00 AM
Serial # : 75695011
Location : Boys Locker Room Office

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

T	4.8	2.8	2.8
	3.2	3.6	6.0
	4.0	2.8	2.4
	4.0	1.1	1.1
	2.8	2.4	2.4
	3.6	0.7	2.0
	4.4	3.2	4.0
	3.2	3.6	2.8
	2.8	3.6	2.0
	4.4	T 1.1	2.4
	3.2	2.8	3.2
	2.8	2.4	1.1
	1.5	1.5	2.4
	3.2	4.0	1.5
	2.8	1.5	2.0
	1.5		

T	4.3	2.9	2.5
	1.4	1.0	2.9
	1.4	4.3	1.4
	3.2	1.8	1.8
	1.4	4.7	3.6
	4.0	2.9	2.5
	6.5	3.2	2.5
	3.2	3.6	1.8
	3.2	3.6	3.2
	5.8	4.3	2.5
	3.2	1.0	4.0
	3.2	0.7	2.9
	2.1	2.1	2.5
	1.8	0.7	3.6
	3.6	1.4	4.3
	2.5	1.0	

Overall Avg.= 2.8
EPA Protocol Avg.= 2.7

Overall Avg.= 2.8
EPA Protocol Avg.= 2.8

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Cascade Radon
12389 NE Airport Way
Portland OR 97203

Professional
Radon Monitor

Professional
Radon Monitor

Start Date : 7/11/2018
Start Time : 10:00:00 AM
End Date : 7/13/2018
End Time : 10:00:00 AM
Serial # : 75695092
Location : Girls Locker RM Office DDSD

Start Date : 7/11/2018
Start Time : 9:00:00 AM
End Date : 7/13/2018
End Time : 9:00:00 AM
Serial # : 68555087
Location : Pantry DDSD

Signature: *Tamara C Linde*

Signature: *Tamara C Linde*

Data in pCi/l
Time Interval 1 Hr

Data in pCi/l
Time Interval 1 Hr

T	3.5	1.7	3.0
	1.7	4.8	3.0
	3.9	1.3	2.6
	4.4	3.9	0.8
	2.6	2.6	4.8
	2.1	2.6	3.9
	1.7	6.1	4.8
	7.5	4.8	4.4
	3.5	2.6	3.5
	2.1	3.9	2.6
	6.1	3.9	3.9
	2.6	3.5	2.6
	4.4	3.0	0.8
	3.5	2.6	3.0
	6.6	3.9	1.7
	3.0		

T	3.5	2.6	3.0
	4.8	3.5	1.7
	3.0	2.1	1.3
	2.6	3.0	3.5
	3.9	1.7	5.3
	3.5	2.6	1.7
	2.1	5.7	4.4
T	5.3	T 3.9	T 2.1
T	4.4	T 2.6	T 1.3
T	1.7	T 2.6	3.0
	3.0	1.3	1.7
	0.8	1.3	0.8
	3.0	2.6	0.8
	0.8	1.3	2.6
	3.9	2.1	2.6
	0.8		

Overall Avg.= 3.4
EPA Protocol Avg.= 3.5

Overall Avg.= 2.7
EPA Protocol Avg.= 2.6

RadStar Monitor Test Data Reports:

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



TEST DETAILS:

High School - South Building
 1400 SE 130th Ave
 Portland, OR 97233

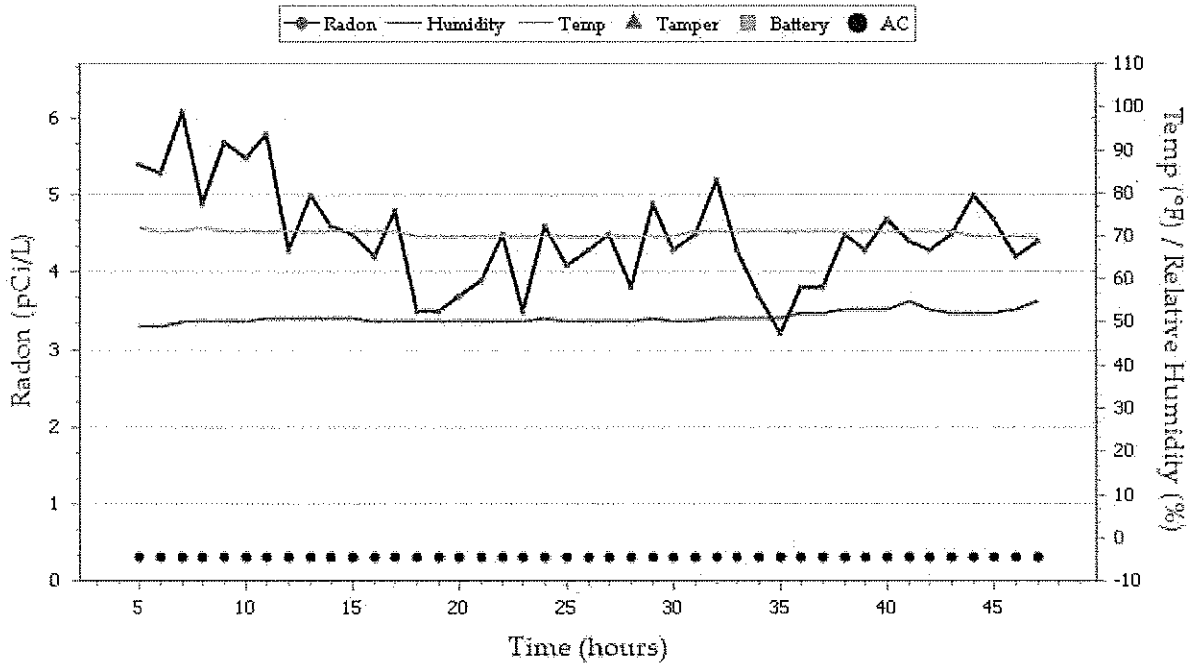
David Douglas

Test Start Date/Time: Monday, July 09, 2018 // 9:00 AM
Test End Date/Time: Wednesday, July 11, 2018 // 9:00 AM
Location of Instrument: Basement - Large Room with HVAC system
Notes:

TEST RESULTS:

Average: 4.4 pCi/L

Test ID# 80243



Tamara C. Linde

7/11/2018

Tamara Linde
 Certification #:
 License 1:
 License 2:

Date

CCB 180537/ CASCARI927C1
 NRPP 108946RT, 108953RT

RadStar RS800
 Serial#: 02132

Radon Detector/Monitor
 Calib#: 00327 Bkgnd12 Test ID#: 80243

Version 1.6
 Page 1 of 2

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha	
1			*	1.3	70	50	43	
2			*	3.3	71	49	104	
3			*	3.8	71	49	119	
4			*	5.0	71	49	157	
5			*	5.4	72	49	170	
6			*	5.3	71	49	167	
7			*	6.1	71	50	193	
8			*	4.9	72	50	156	
9			*	5.7	71	50	181	
10			*	5.5	71	50	173	
11			*	5.8	71	51	184	
12			*	4.3	71	51	137	
13			*	5.0	71	51	158	
14			*	4.6	71	51	145	
15			*	4.5	71	51	142	
16			*	4.2	71	50	134	
17			*	4.8	71	50	151	
18			*	3.5	70	50	112	
19			*	3.5	70	50	112	
20			*	3.7	70	50	116	
21			*	3.9	70	50	125	
22			*	4.5	70	50	141	
23			*	3.5	70	50	110	
24			*	4.6	70	51	147	
25			*	4.1	70	50	131	
26			*	4.3	70	50	136	
27			*	4.5	70	50	141	
28			*	3.8	70	50	119	
29			*	4.9	70	51	154	
30			*	4.3	70	50	136	
31			*	4.5	71	50	143	
32			*	5.2	71	51	164	
33			*	4.3	71	51	135	
34			*	3.7	71	51	118	
35			*	3.2	71	51	102	
36			*	3.8	71	52	119	
37			*	3.8	71	52	119	
38			*	4.5	71	53	143	
39			*	4.3	71	53	137	
40			*	4.7	71	53	148	
41			*	4.4	71	55	138	
42			*	4.3	71	53	135	
43			*	4.5	71	52	141	
44			*	5.0	70	52	158	
45			*	4.7	70	52	150	
46			*	4.2	70	53	134	
47			*	4.4	70	55	140	
Minimum:				3.2 pCi/L	Maximum:	6.1 pCi/L	Average:	4.4 pCi/L

Tamara C Linde

7/11/2018

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800

Radon Detector/Monitor

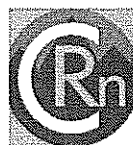
Version 1.6

Serial#: 02132

Calib #: 00327 Bkgnd12 Test ID#: 80243

Page 2 of 2

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



TEST DETAILS:

High School - South Building
 1400 SE 130th Ave
 Portland, OR 97233

David Douglas School District

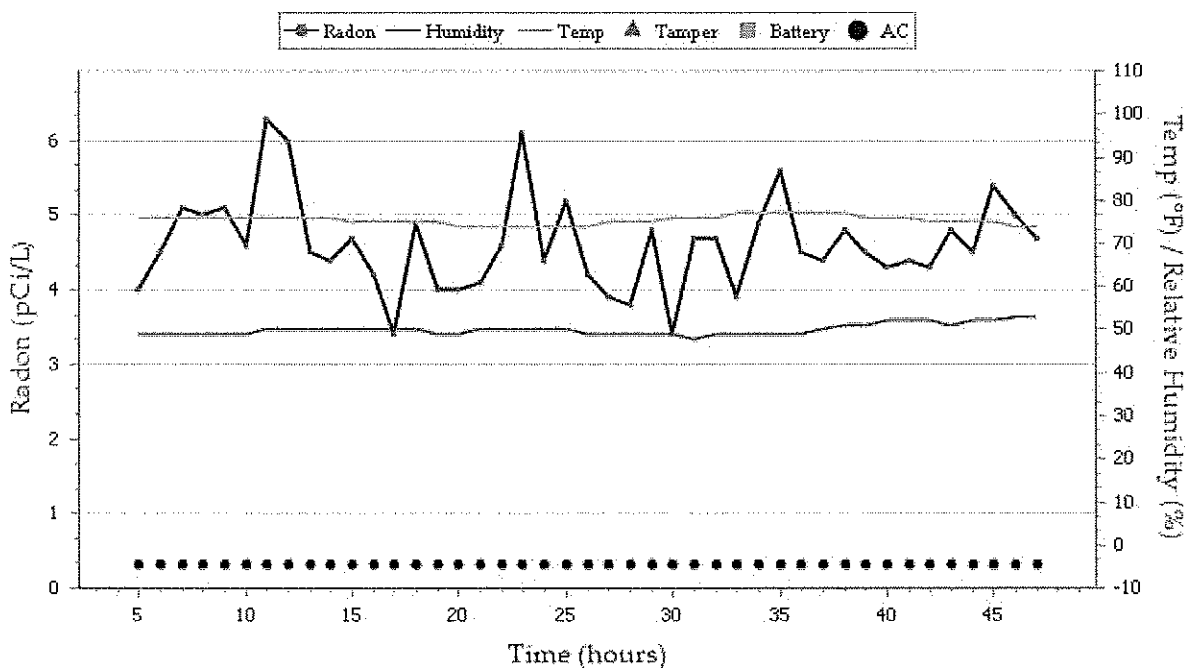
Test Start Date/Time: Monday, July 09, 2018 // 9:09 AM
Test End Date/Time: Wednesday, July 11, 2018 // 9:09 AM
Location of Instrument: Storage Room in SW Corner of Large HVAC Room

Notes:

TEST RESULTS:

Average: 4.6 pCi/L

Test ID# 80222



Tamara C Linde

Tamara Linde

7/11/2018

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800

Radon Detector/Monitor

Version 1.6

Serial#: 01893

Calib.#: 00327 Bkgrnd13 Test ID#: 80222

Page 1 of 2

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha	
1			*	0.3	74	51	11	
2			*	2.1	75	49	67	
3			*	3.3	76	49	105	
4			*	3.4	76	49	108	
5			*	4.0	76	49	127	
6			*	4.5	76	49	143	
7			*	5.1	76	49	162	
8			*	5.0	76	49	157	
9			*	5.1	76	49	161	
10			*	4.6	76	49	146	
11			*	6.3	76	50	199	
12			*	6.0	76	50	189	
13			*	4.5	76	50	142	
14			*	4.4	76	50	139	
15			*	4.7	75	50	150	
16			*	4.2	75	50	134	
17			*	3.4	75	50	109	
18			*	4.9	75	50	155	
19			*	4.0	75	49	128	
20			*	4.0	74	49	128	
21			*	4.1	74	50	129	
22			*	4.6	74	50	145	
23			*	6.1	74	50	192	
24			*	4.4	74	50	140	
25			*	5.2	74	50	163	
26			*	4.2	74	49	133	
27			*	3.9	75	49	124	
28			*	3.8	75	49	121	
29			*	4.8	75	49	151	
30			*	3.4	76	49	109	
31			*	4.7	76	48	149	
32			*	4.7	76	49	150	
33			*	3.9	77	49	125	
34			*	4.9	77	49	155	
35			*	5.6	77	49	176	
36			*	4.5	77	49	142	
37			*	4.4	77	50	138	
38			*	4.8	77	51	153	
39			*	4.5	76	51	144	
40			*	4.3	76	52	135	
41			*	4.4	76	52	140	
42			*	4.3	75	52	135	
43			*	4.8	75	51	151	
44			*	4.5	75	52	141	
45			*	5.4	75	52	172	
46			*	5.0	74	53	158	
47			*	4.7	74	53	148	
Minimum:				3.4 pCi/L	Maximum:	6.3 pCi/L	Average:	4.6 pCi/L

Tamara C Linde

7/11/2018

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800

Radon Detector/Monitor

Version 1.6

Serial#: 01893

Calib.#: 00327 Bkgnd13 Test ID#: 80222

Page 2 of 2

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



TEST DETAILS:

High School - South Building
 Portland, OR

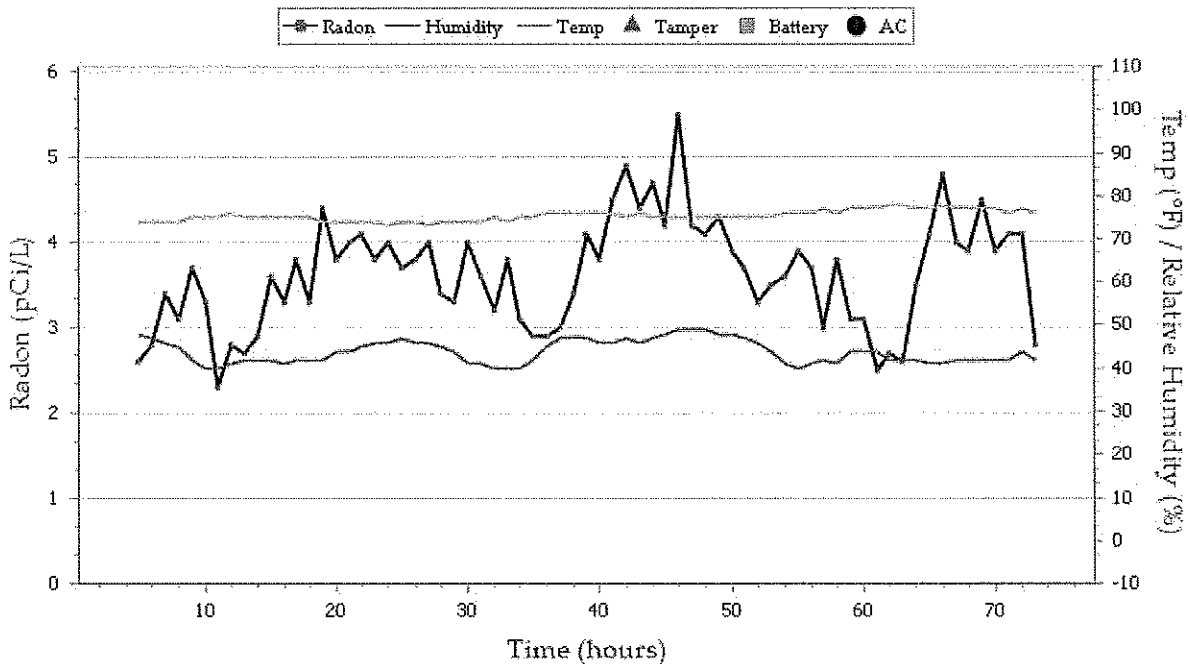
David Douglas School District

Test Start Date/Time: Friday, July 13, 2018 // 10:30 AM
Test End Date/Time: Monday, July 16, 2018 // 12:00 PM
Location of Instrument: Basement, Coach's Room
Notes:

TEST RESULTS:

Average: 3.6 pCi/L

Test ID# 80245



Tamara C Linde

Tamara Linde
 Certification #:

7/16/2018
 Date

License 1:
 License 2:

CCB 180537/ CASCARI927CI
 NRPP 108946RT, 108953RT

RadStar RS800
 Serial#: 02132

Radon Detector/Monitor
 Calib.#: 00327 Bkgnd12 Test ID#: 80245

Version 1.6
 Page 1 of 3

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha
1				0.7	73	49	24
2				1.8	73	49	59
3				2.3	74	50	75
4				2.6	74	49	82
5				2.6	74	48	84
6				2.8	74	47	90
7				3.4	74	46	107
8				3.1	74	45	99
9				3.7	75	42	117
10				3.3	75	40	104
11				2.3	75	40	73
12				2.8	76	41	90
13				2.7	75	42	87
14				2.9	75	42	92
15				3.6	75	42	115
16				3.3	75	41	104
17				3.8	75	42	119
18				3.3	75	42	104
19				4.4	74	42	138
20				3.8	74	44	122
21				4.0	74	44	126
22				4.1	74	45	130
23				3.8	74	46	121
24				4.0	73	46	127
25				3.7	74	47	117
26				3.8	74	46	119
27				4.0	73	46	127
28				3.4	74	45	109
29				3.3	74	44	106
30				4.0	74	41	126
31				3.6	74	41	114
32				3.2	75	40	103
33				3.8	74	40	122
34				3.1	75	40	99
35				2.9	75	42	92
36				2.9	76	45	93
37				3.0	76	47	96
38				3.4	76	47	109
39				4.1	76	47	129
40				3.8	76	46	122
41				4.5	76	46	143
42				4.9	75	47	155
43				4.4	76	46	138
44				4.7	75	47	150
45				4.2	75	48	132
46				5.5	75	49	173
47				4.2	75	49	134
48				4.1	75	49	131
49				4.3	75	48	135
50				3.9	75	48	124
51				3.7	75	47	117
52				3.3	75	46	106
53				3.5	75	44	112
54				3.6	76	41	113
55				3.9	76	40	125
56				3.7	76	41	118
57				3.0	77	42	94

RadStar RS800
 Serial#: 02132

Radon Detector/Monitor
 Calib.#: 00327 Bkgnd12 Test ID#: 80245

Version 1.6
 Page 2 of 3

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



58	3.8	76	41	119	
59	3.1	77	44	100	
60	3.1	77	44	99	
61	2.5	77	44	81	
62	2.7	78	42	85	
63	2.6	78	42	82	
64	3.5	77	42	112	
65	4.1	77	41	131	
66	4.8	78	41	153	
67	4.0	77	42	128	
68	3.9	77	42	124	
69	4.5	77	42	144	
70	3.9	77	42	123	
71	4.1	76	42	129	
72	4.1	77	44	131	
73	2.8	76	42	90	
Minimum:	2.3 pCi/L	Maximum:	5.5 pCi/L	Average:	3.6 pCi/L

Tamara C Linde

7/16/2018

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800

Radon Detector/Monitor

Version 1.6

Serial#: 02132

Calib.#: 00327 Bkgnd12 Test ID#: 80245

Page 3 of 3

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



TEST DETAILS:

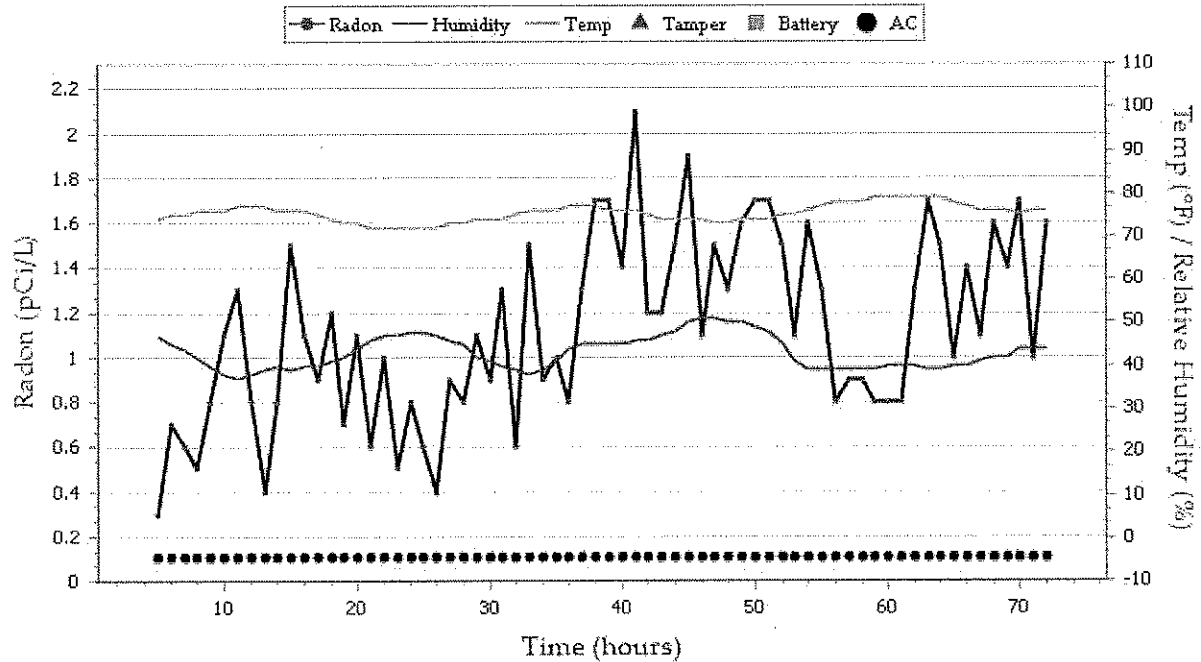
High School - South Building
 1400 SE 130th Ave
 Portland, OR

David Douglas School District

Test Start Date/Time: Friday, July 13, 2018 // 10:30 AM
Test End Date/Time: Monday, July 16, 2018 // 12:00 PM
Location of Instrument: Dance Room - East wall
Notes:

TEST RESULTS:

Average: 1.1 pCi/L **Test ID#** 80316



Tamara C Linde 7/16/2018
 Tamara Linde Date
 Certification #:
 License 1: CCB 180537/ CASCARI927C1
 License 2: NRPP 108946RT, 108953RT

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha
1			*	0.0	73	50	3
2			*	0.0	73	50	2
3			*	0.0	74	49	0
4			*	0.7	74	48	23
5			*	0.3	74	47	12
6			*	0.7	75	45	24
7			*	0.6	75	44	20
8			*	0.5	76	42	17
9			*	0.8	76	40	27
10			*	1.1	76	38	37
11			*	1.3	77	37	42
12			*	0.8	77	38	28
13			*	0.4	77	39	13
14			*	0.8	76	40	25
15			*	1.5	76	39	49
16			*	1.1	76	40	36
17			*	0.9	75	40	30
18			*	1.2	74	41	40
19			*	0.7	73	42	24
20			*	1.1	73	44	37
21			*	0.6	72	46	19
22			*	1.0	72	47	32
23			*	0.5	72	47	18
24			*	0.8	72	48	27
25			*	0.6	72	48	20
26			*	0.4	72	47	14
27			*	0.9	73	46	31
28			*	0.8	73	45	26
29			*	1.1	74	42	36
30			*	0.9	74	41	30
31			*	1.3	74	40	41
32			*	0.6	75	39	21
33			*	1.5	76	38	48
34			*	0.9	76	39	31
35			*	1.0	76	41	32
36			*	0.8	77	44	28
37			*	1.3	77	45	41
38			*	1.7	77	45	55
39			*	1.7	76	45	55
40			*	1.4	76	45	46
41			*	2.1	76	46	66
42			*	1.2	75	46	38
43			*	1.2	74	47	39
44			*	1.5	74	48	47
45			*	1.9	74	50	61
46			*	1.1	74	51	37
47			*	1.5	73	51	47
48			*	1.3	73	50	42
49			*	1.6	74	50	50
50			*	1.7	74	49	53
51			*	1.7	74	48	53
52			*	1.5	75	45	47
53			*	1.1	75	41	37
54			*	1.6	76	39	52
55			*	1.3	77	39	42
56			*	0.8	78	39	26
57			*	0.9	78	39	30

RadStar RS800
 Serial#: 01806

Radon Detector/Monitor
 Calib.#: 00329 Bkgnd16 Test ID#: 80316

Version 1.6
 Page 2 of 3

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



58	*	0.9	78	39	29	
59	*	0.8	79	39	25	
60	*	0.8	79	40	27	
61	*	0.8	79	40	26	
62	*	1.3	79	40	41	
63	*	1.7	79	39	56	
64	*	1.5	79	39	49	
65	*	1.0	78	40	33	
66	*	1.4	77	40	46	
67	*	1.1	76	41	35	
68	*	1.6	76	42	52	
69	*	1.4	76	42	46	
70	*	1.7	75	44	56	
71	*	1.0	76	44	33	
72	*	1.6	76	44	52	
Minimum:		0.3 pCi/L	Maximum:	2.1 pCi/L	Average:	1.1 pCi/L

Tamara C Linde

7/16/2018

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800

Radon Detector/Monitor

Version 1.6

Serial#: 01806

Calib.#: 00329 Bkgnd16 Test ID#: 80316

Page 3 of 3

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



TEST DETAILS:

High School - South Campus
 1400 SE 130th Ave
 Portland, OR

David Douglas School District

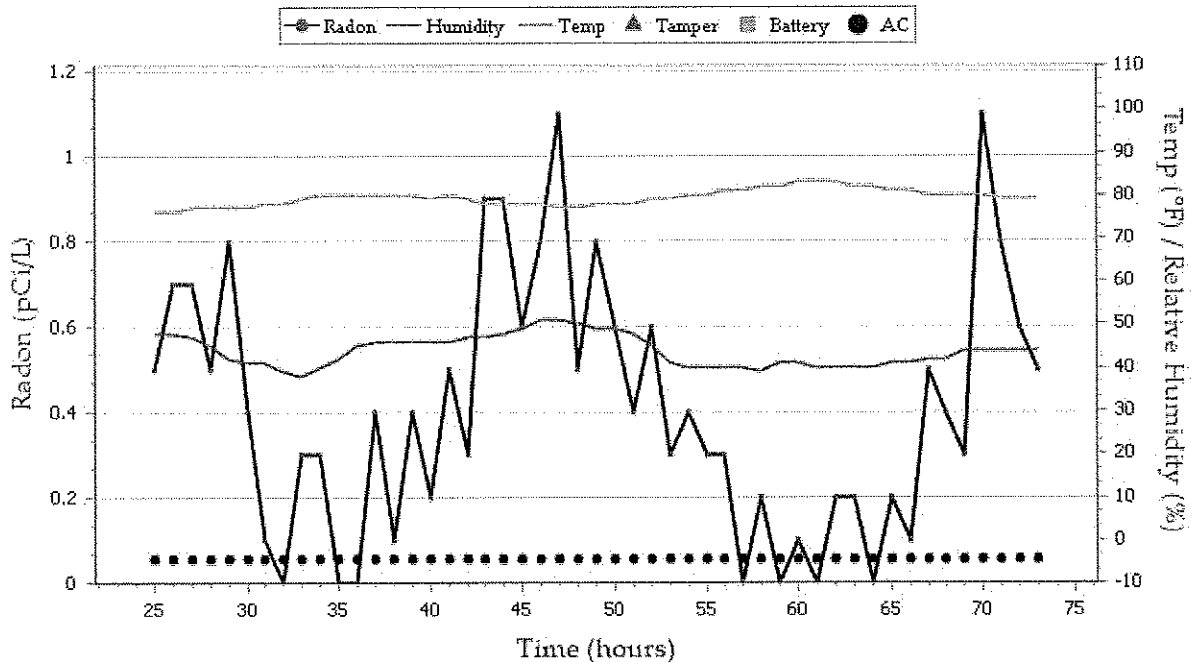
Test Start Date/Time: Friday, July 13, 2018 // 10:30 AM
Test End Date/Time: Monday, July 16, 2018 // 12:00 PM
Location of Instrument: Dance Room - West wall

Notes:

TEST RESULTS:

Average: 0.4 pCi/L

Test ID# 80224



Tamara C Linde

7/16/2018

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800

Radon Detector/Monitor

Version 1.6

Serial#: 01893

Calib #: 00327 Bkgnd13 Test ID#: 80224

Page 1 of 3

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha
25			*	0.5	76	48	16
26			*	0.7	76	48	24
27			*	0.7	77	47	24
28			*	0.5	77	45	18
29			*	0.8	77	42	28
30			*	0.4	77	41	15
31			*	0.1	78	41	5
32			*	0.0	78	39	3
33			*	0.3	79	38	12
34			*	0.3	80	40	11
35			*	0.0	80	42	2
36			*	0.0	80	45	1
37			*	0.4	80	46	14
38			*	0.1	80	46	6
39			*	0.4	80	46	15
40			*	0.2	79	46	8
41			*	0.5	80	46	18
42			*	0.3	79	47	10
43			*	0.9	78	47	29
44			*	0.9	78	48	31
45			*	0.6	78	49	20
46			*	0.8	78	51	28
47			*	1.1	77	51	35
48			*	0.5	77	50	18
49			*	0.8	78	49	26
50			*	0.6	78	49	21
51			*	0.4	78	48	13
52			*	0.6	79	45	19
53			*	0.3	79	41	11
54			*	0.4	80	40	15
55			*	0.3	80	40	11
56			*	0.3	81	40	11
57			*	0.0	81	40	1
58			*	0.2	82	39	8
59			*	0.0	82	41	2
60			*	0.1	83	41	5
61			*	0.0	83	40	1
62			*	0.2	83	40	9
63			*	0.2	82	40	8
64			*	0.0	82	40	1
65			*	0.2	81	41	8
66			*	0.1	81	41	6
67			*	0.5	80	42	18
68			*	0.4	80	42	15
69			*	0.3	80	44	12
70			*	1.1	80	44	36
71			*	0.8	79	44	27
72			*	0.6	79	44	19
73			*	0.5	79	44	18
Minimum:				0.0 pCi/L	Maximum:	1.1 pCi/L	Average: 0.4 pCi/L

Tamara C Linde

Tamara Linde

Certification #:

License 1:

7/16/2018

Date

CCB 180537/ CASCARI927C1

RadStar RS800

Serial#: 01893

Radon Detector/Monitor

Calib.#: 00327 Bkgnd13 Test ID#: 80224

Version 1.6

Page 2 of 3

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



TEST DETAILS:

1500 SE 130th Ave
 Portland, OR 97233

David Douglas School District

Test Start Date/Time: Wednesday, July 11, 2018 // 9:00 AM

Test End Date/Time: Friday, July 13, 2018 // 9:00 AM

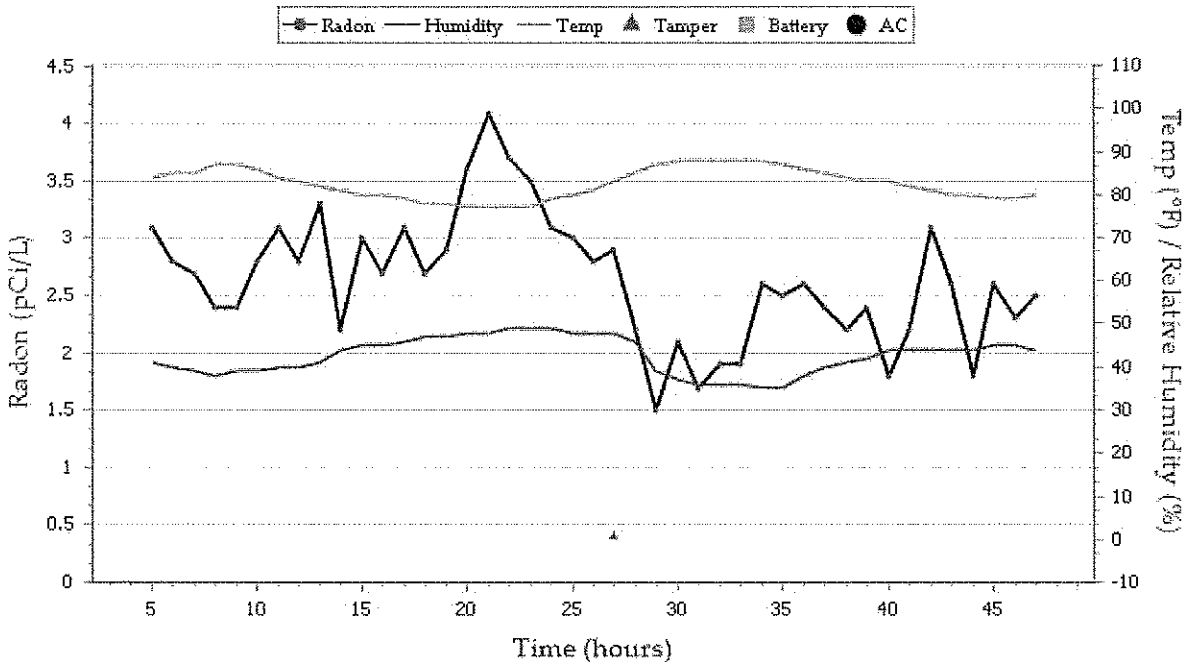
Location of Instrument: Stage

Notes:

TEST RESULTS:

Average: 2.6 pCi/L

Test ID# 80223



Tamara C Linde

7/13/2018

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800
 Serial#: 01893

Radon Detector/Monitor
 Calib.#: 00327 Bkgnd13 Test ID#: 80223

Version 1.6
 Page 1 of 2

Tamara Linde
 Cascade Radon
 12839 NE Airport Way
 Portland, OR 97230
 Phone: 503-421-4813 Fax: 503-281-6170
 office@cascaderadon.com



INTERVAL REPORT:

Hour	T	B	AC	pCi/L	Temp	Humd	Alpha
1				3.8	77	49	120
2				4.4	79	47	138
3				3.0	81	45	95
4				3.0	82	44	94
5				3.1	84	41	100
6				2.8	85	40	88
7				2.7	85	39	87
8				2.4	87	38	76
9				2.4	87	39	76
10				2.8	86	39	89
11				3.1	84	40	99
12				2.8	83	40	89
13				3.3	82	41	105
14				2.2	81	44	69
15				3.0	80	45	97
16				2.7	80	45	85
17				3.1	79	46	100
18				2.7	78	47	85
19				2.9	78	47	91
20				3.6	77	48	113
21				4.1	77	48	129
22				3.7	77	49	116
23				3.5	77	49	111
24				3.1	79	49	99
25				3.0	80	48	97
26				2.8	81	48	89
27	*			2.9	83	48	92
28				2.2	85	46	69
29				1.5	87	39	50
30				2.1	88	37	67
31				1.7	88	36	54
32				1.9	88	36	60
33				1.9	88	36	61
34				2.6	88	35	84
35				2.5	87	35	80
36				2.6	86	38	83
37				2.4	85	40	77
38				2.2	84	41	71
39				2.4	83	42	76
40				1.8	83	44	59
41				2.2	82	44	71
42				3.1	81	44	100
43				2.6	80	44	83
44				1.8	80	44	59
45				2.6	79	45	82
46				2.3	79	45	74
47				2.5	80	44	79
Minimum:			1.5 pCi/L	Maximum:	4.1 pCi/L	Average:	2.6 pCi/L

Tamara C Linde

7/13/2018

Tamara Linde

Date

Certification #:

License 1:

CCB 180537/ CASCARI927C1

License 2:

NRPP 108946RT, 108953RT

RadStar RS800

Radon Detector/Monitor

Version 1.6

Serial#: 01893

Calib.#: 00327 Bkgnd13 Test ID#: 80223

Page 2 of 2