



RADON REDUCTION SWEEPSTAKES ANNUAL REPORT 2021

2020-2021 Year
3rd Edition

Take Action on Radon Team

Table of Contents

Context and Purpose	2
History	2
Summary of Winners 2020-2021	2
Average Costs:	2
Average Decrease of Radon Levels	4
New Building Code Rough-in	6
Appendix 1: List of Winners with Quotes from 2020-2021	8
Conclusion and Lessons Learned	10
Réunion des intervenants: Occupe Toi du Radon	11

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Context and Purpose

The Radon Reduction Sweepstakes is a Canada-wide contest run by Take Action on Radon (TAOR) in conjunction with the Canadian Association of Radon Scientists and Technologists (CARST). The contest provided 10 prizes of up to \$1,000 each to homeowners who have tested their home for radon and used a C-NRPP professional to reduce their radon levels to below Canada's recommended guideline of 200 Bq/m³. A key part of TAOR's mandate is to encourage Canadians to *take action* on radon, and the Sweepstakes does just that with the possibility of a cash reward.

History

The Sweepstakes began in 2017 with the first year's prizes awarded in November 2018. In the first year, the prizes were distributed by region across Canada with 2 prizes per each of the 5 regions. Due to requirements of special licencing, Quebec was not included in the first year, however they have been included as their own region each year thereafter. The regions were therefore expanded to 6 regions and defined as: BC and Yukon; Alberta and Northwest Territories; Manitoba and Saskatchewan; Ontario; Quebec; and Atlantic and Nunavut. The sweepstakes continued to have 10 awards of \$1,000 and the prizes were distributed with 1 prize per each of the 6 regions with the final 4 prizes being drawn from all remaining entrants.

TAOR produced a report in September 2019 summarizing the first two years of the entries and another report for the 2019/20 campaign. This report summarizes the contest for 2020-2021, which is the fourth year of the sweepstakes.

Summary of Winners 2020-2021

The 2020-2021 contest winners were drawn at random and contacted in November 2021 and announced online in January 2022. Each contest winner was notified, and prize money was sent directly to the winners. Whenever possible, photos were taken by the winners of themselves and/or their families. Occasionally the participants reached out to their mitigation company to have a photo with them, which reflects on the winner's appreciation for the work done. Each winner was interviewed over the phone, and their testimonial of testing and reducing radon can be found along with the full list of names and regions in Appendix 1. To date, this program has allowed Take Action on Radon to share 40 testimonials from individuals who have taken action on radon through all steps of the process.

Average Costs:

The Radon Reduction Sweepstakes has allowed us to gather real data from participants on radon mitigation cost and effectiveness. The cost of mitigation systems was collected from all entries, as shown in Table 1. A summary of costs from all four years is shown in Table 2.

Region	# of Entries	Average Cost	Highest Cost	Lowest Cost	# of Different Mitigation Professionals
BC	16	\$ 4,084	\$ 7 028.00	\$ 2,100.00	4
Alberta	118	\$ 2,407	10 671.76	925.00	6
MB/SK	241	\$ 2,914	8 400.00	930.00	11
ON	15	\$ 2,492	3 250.00	1695.00	8
QC	44	\$ 2,319	3 084.99	659.95	8
Atlantic/NU	11	\$ 1,882	3 013.00	1 300.00	4
	445	\$ 2,723	\$10 671.76	\$ 659.95	41

Table 1: Average Costs 2020-2021

Sweepstakes year	Average cost	Highest Cost	Lowest Cost	# of entries
2017-18	n/a	\$ 8,319.15	\$ 777.00	168
2018-19	\$ 2,795	\$ 9,098.76	\$ 630.00	357
2019-20	\$ 2,718	\$10,671.76	\$ 230.00	256
2020-21	\$ 2,723	\$10 671.76	\$ 659.95	445

Table 2: Annual summary of radon mitigation costs from 2017-2021

Receiving up-to-date information on the actual cost of radon mitigation systems across the country continues to be very useful, as this information is often requested from homeowners and stakeholders alike. While there is a significant range from the lowest to highest cost, the average cost has remained very consistent from year to year.



Average Decrease of Radon Levels

Data collected through the Sweepstakes entries also allows us to measure the effectiveness of C-NRPP radon mitigation systems. Table 3 summarizes the average reduction in radon levels in each region based on this year's entries. Note that entries were only counted if they included both a pre and post mitigation radon level.

Region	# of Entries	Highest Radon Level	Average Post-Mitigation Radon Level	Average Percentage of Reduction
<i>BC and Yukon</i>	16	1038	32	91%
<i>Alberta and NWT</i>	100	3000	28	90%
<i>Manitoba/Saskatchewan</i>	232	4292	44	91%
<i>ON</i>	13	2848	39	91%
<i>QC</i>	43	3000	41	92%
<i>Atlantic and Nunavut</i>	10	1468	44	90%
	414	4292	39	91%

Table 3: Achieved Reduction in Radon Levels 2020-2021

Table 4 summarizes the average reduction in radon levels over the past 3 years of the sweepstakes. Once again, data was only included for entries that included both a pre and post mitigation radon level.

Sweepstakes year	Highest Radon level	Average Post-Mitigation Radon level	Average Percent of Reduction	# of entries
2017-18	This information was not requested during the first year.			168
2018-19	3,700	35	91%	357
2019-20	2,800	36	92%	237
2020-21	4,292	39	91%	414

Table 4: Annual summary of pre and post mitigation radon levels.

Figure 1 shows the reduction in radon levels visually. Each vertical blue line represents a pre-mitigation radon level, with the red line in front of each blue line representing the corresponding post-mitigation radon level. The data is arranged by post-mitigation radon level, from lowest to highest, and is capped at 1000Bq/m³ as the highest pre-mitigation radon level to make the data visible. The figure illustrates quite clearly that no matter how high the pre-mitigation radon level in a home, a radon mitigation system can reduce the radon to below the Canadian guideline level, and generally far below that.

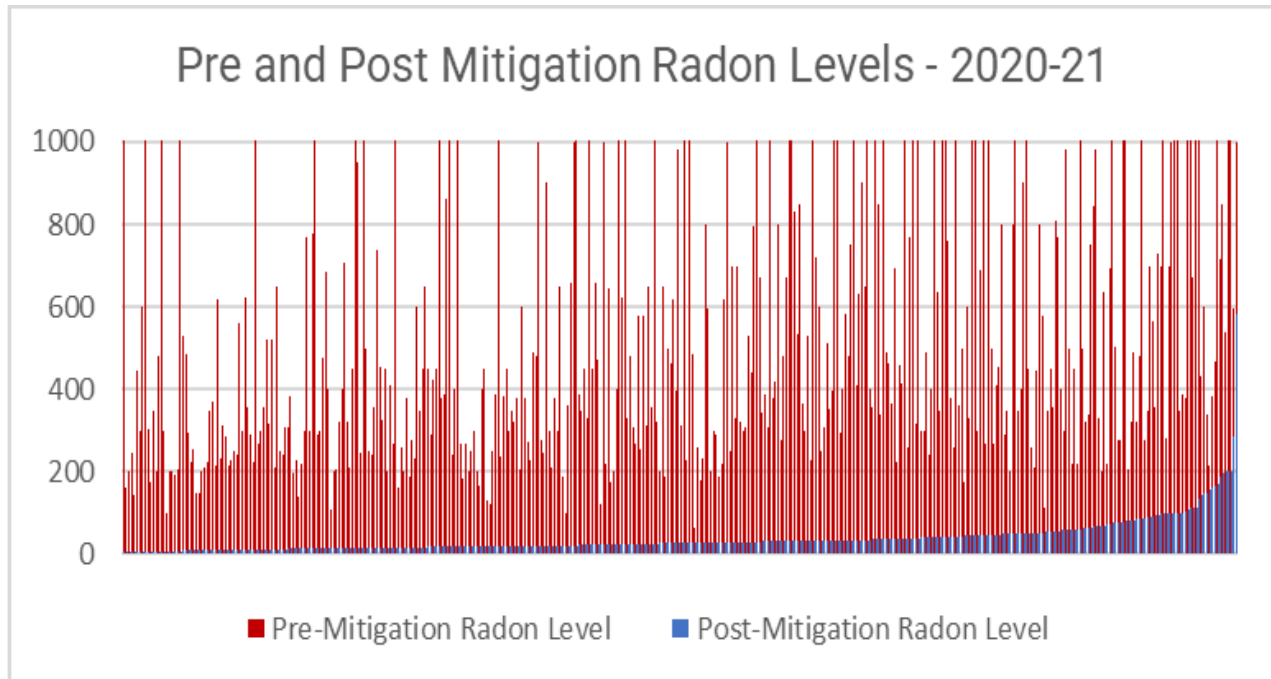


Figure 1: Radon Levels before and after mitigation 2020-2021

Note that in Figure 1, data was only included for those entries which provided a post-mitigation radon level, some homeowners applied to the sweepstakes before post-mitigation testing was completed.

Table 5 summarizes the data presented visually in Figure 1. This data reveals that C-NRPP professionals reduced radon levels to below 100 Bq/m³ over 93% of the time, and to below 50 Bq/m³ 79% of the time. These levels are well below Canada’s action level. The remaining 6% of homes were also lowered to below Canada’s action level of 200 Bq/m³.

Post-Mitigation Radon Level	# of participants	% of participants	Min Pre-Mitigation Radon Level	Max Pre-Mitigation Radon Level
0-49	327	79%	65	3,696
50-99	58	14%	111	3,000
100-200	24	6%	213	4,292
Total	409		65	4,292

Table 5: Statistics on Post-Mitigation Radon levels

New Building Code Rough-in

In the 2020-2021 sweepstakes we included a question about previous radon reduction (control) measures that were included in the house prior to the radon mitigation system being installed. The options of answers are listed in Table 5 along with the tally of answers. It is still difficult to determine what influence these measures have on the data because the great majority of participants still answer, “No previous radon reduction measures were in the home”. However, it will be interesting to measure how these responses change over the course of the next few years.

Number of Participants	Radon Control/Reduction measures already in home
409	No previous radon reduction measures were in the home
5	Had some type of radon reduction measures previously installed in home.
0	House had a radon pipe installed throughout the house exiting outside already and a fan was added
21	House was constructed with a short radon pipe in the foundation floor and the mitigation work USED this pipe.
3	House was constructed with a short radon pipe in the foundation floor and the mitigation work DID NOT USE this pipe.
7	Unknown

Table 6: Previous Radon Control/Reduction Measures in home before this radon reduction work

Conclusion and Lessons Learned

Although the sweepstakes doesn't seem to be a main motivator to encourage Canadians to mitigate, it continues to be a useful tool in assessing the radon landscape in Canada.

The Sweepstakes does provide an annual deadline for homeowners to target when considering and scheduling their mitigation. Although many entrants say the sweepstakes wasn't their motivating reason for mitigating, having a deadline to apply seems to have some influence in their timeliness in getting the mitigation system installed.

The sweepstakes continues to provide an excellent source of information on mitigation effectiveness and costs, as well as compelling testimonials from participants. The information on costs of mitigation systems provides a useful reference both to homeowners and to policymakers, and the success of radon reduction in homes utilizing certified professionals shows that in many Canadians homes, radon levels are being reduced to well below both Health Canada's and the World Health Organization's guidelines.

Although we included questions in this year's sweepstakes with regards to radon control measures as part of the construction of the home, there were not enough entries from various categories to be able to evaluate any data. We are simply able to state that we are seeing new homes which have radon control measures as part of their construction mitigating for radon.

Appendix 1: List of Winners with Quotes from 2020-2021

Each of the winners was interviewed over the phone, and excerpts from these interviews were used to draft quotes to help tell the story of their individual experience with radon.

A general lack of radon awareness persists across most regions of Canada. The stories collected from Sweepstakes winners are the best possible Canadian radon stories – these are Canadians from all walks of life who became aware of the health risks posed by radon, tested their homes, and then mitigated their homes when they discovered the levels were high. The stories come from all regions of Canada and, as personal stories, are more compelling than any generic public health messaging can hope to be.

Excerpts from those interviews are as follows:



Nolan Best-Solberg, Kingston, ON

Nolan and his family are well aware of the risks posed by radon gas. They've now mitigated two homes, both in the Kingston area, and urge others to pay attention to the risks. "Radon is always there - you can't see it, you can't smell it - but if you've got a family and you're spending a lot of time in the house, you'd better do something about it."

Winner from the ON Region.



Crystal Perkins, Kindersley, SK

"With our kids spending so much time in the basement, we wanted to test for radon for the sake of their health, and we're so glad we did! "

Winner from the MB/SK Region.



Rhonda Pickering, Okotoks, AB

"As a stay-at-home parent, I'm in the house all day long, so radon was definitely a health concern. Having the system installed was absolutely painless; we were afraid we'd hear the mitigation system, but we don't even notice it."

Winner from the AB Region.

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Frédéric Poitras, Quebec, QC

<<Notre maison est assez neuve, et nous aimerions rester ici jusqu'à la retraite. Ça vaut la peine de faire le test radon pour avoir une qualité d'air saine. Notre système d'atténuation est tellement simple; pas bruyant, pas si cher, et maintenant nos niveaux de radon sont très bas.>>

"Our house is quite new, and we'd like to stay here to retirement. It's worth testing for radon to have good indoor air quality. The mitigation system is so simple: not noisy, not too expensive, and now our radon levels are very low."

Winner from the QC Region.



Christina Hagerman, Moose Jaw, SK

"Educate yourself on radon. We had no idea about it but when I tested my radon levels were over 1000 Bq/m³. We mitigated right away to reduce the levels. People need to educate themselves more about it."

Winner from the national draw.



Robert Johnston, Regina, SK

"As a homeowner, you have the responsibility to ensure you maintain a safe and healthy home. You hear about Radon but tend to forget it. If you spend a lot of time in your basement, I think it's really critical to have it looked after. Any cracks and openings in your basement should alert you to do something. There are many excellent sources of information out there that explains the dangers of Radon and ways to mitigate it. If you are ever unsure, a quick Radon test will set you on the right path."

Winner from the national draw.



Winner from the national draw.



Glen Strachan, West Kelowna, BC:

"Get it done for your health. When I heard from a neighbour that they had high levels, I thought that I wanted to protect my health too, so I tested and my levels were high. I wanted to make sure that I was around to enjoy my retirement! Test and reduce your radon levels so that you can enjoy your retirement."





Sachin Shah, Calgary, AB

"One of my colleagues had reduced radon in his home. He had measured his radon and found that the numbers were really high, and he wanted to protect his children playing in the basement. I did some research on radon and what the impact was across Canada and then I tested my home too."

Winner from the national draw.

Linnea Storvold, Summerland, BC



"My husband is a volunteer firefighter with our local radon mitigator, Graham from Point-The-Way. They were talking about the radon levels in Summerland and how they are high in our area. Graham came and tested our home and the levels were quite high, so we decided to mitigate and reduce our radon exposure right away. The mitigation company was fantastic; they walked us through the process so we understood what they were doing every step of the way. Their services were great and we felt

really well looked after. I also learned that having radon fans installed also clears up any moisture in the basement and we really noticed that our basement no longer has any musty smell at all. Very happy we had this done.

Winner from the national draw.



Michele Brideau, Tracadie-Sheila, NB:

<<En tant qu'inhalothérapeute, j'étais consciente du radon et de l'importance de mesurer. Un an, lors de notre promotion annuelle de la santé pulmonaire, j'ai décidé de tester ma propre maison, et je suis tellement contente de l'avoir fait! >>

"As a respiratory therapist, I was aware of radon and the importance of measuring. One year, during our annual lung health promotion, I decided to test my own house, and I'm so glad I did!"

Winner from the Atlantic/NU region.

