A survey of residents’ perceptions of municipal drinking water in the community of Happy Valley-Goose Bay, Labrador

Prepared by

**Merline Fonkwe, Ph.D., P.Geo.**
Program Leader and Principal Investigator
Mineral deposits and Environmental Geochemistry
Labrador Institute of Memorial University of Newfoundland
219 Hamilton River Road, P.O. Box 490, Station B,
Happy Valley-Goose Bay, NL, A0P 1E0, Canada

**Rebecca Schiff, Ph.D.**
Assistant Professor – Rural, Northern, and Aboriginal Health
Labrador Institute of Memorial University of Newfoundland
219 Hamilton River Road, P.O. Box 490, Station B,
Happy Valley-Goose Bay, NL, A0P 1E0, Canada

*Present address*: Department of Health Sciences, Lakehead University,
955 Oliver Road, Thunder Bay, ON, P7B 5E1, Canada

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We encourage people to share this report with others who they think are interested in issues related to drinking water in our community. We also welcome questions and feedback, which can be directed to:

Dr. Merline Fonkwe  
Labrador Institute of Memorial University of Newfoundland  
219 Hamilton River Road, P.O. Box 490, Station B,  
Happy Valley-Goose Bay, NL, A0P 1E0, Canada  
Phone: 709 896-8589; Fax: 709 896-2970  
Email: merline.fonkwe@mun.ca

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• All our colleagues at the administration office (especially, to Mrs. Beatrice Dickers and Mrs. Diane Brown to whom I wish a happy retirement!) for their generous assistance at various stages of this study.
Summary

Our study is the first to report clear quantitative and qualitative information from residents on their perceptions, attitudes and opinions about drinking water quality in the community of Happy Valley-Goose Bay.

676 individuals with a variety of backgrounds and the majority (79%) from the Valley area of town participated in this 2014 survey. Therefore, these results should be viewed as representative of the residents in the Valley area, instead of the entire community’s population.

The results are:

• Drinking water quality was rated very important by 78% of the respondents.
• The majority of the respondents (72%) indicated that they were dissatisfied (somewhat or very) with quality of tap water.
• Taste, smell, healthiness and safety of drinking water emerged as being important concerns among survey respondents.
• Most respondents drank bottled water (53%) or filtered tap water (44) for reasons of perceived improvements in taste and smell, reduced chemical content and higher safety compared to regular tap water.
A few respondents (10%) were able to identify both groundwater and surface water, as the sources of drinking water in our community.

A vast majority of respondents (80%) said that boil water advisories were not effectively communicated. A combination of media sources, i.e. radio, e-mail, phone and print brochures was suggested for effective notification approach at reaching the public.

Most respondents (58%) felt that the municipality as being the most responsible for ensuring clean and safe drinking-water in the community.

173 respondents gave their opinions or comments. Themes/concerns emerged from the comments included:

- Change in the overall quality of tap water over time
- Excessive chlorination
- Fears about getting sick due to potentially contaminated water
- Preference of the “old” water supply system, i.e. “Spring Gulch”
- Erratic and uncoordinated functioning of the boil water advisory system
- Interference of power outages with the water treatment and boiling process

This study can help decision-makers understand driving forces for consumers’ dissatisfaction. Moreover, it provide critical information to consider in the improvement strategies of drinking water quality and public outreach.
Introduction

• We are pleased to present the residents of the community of Happy Valley-Goose Bay with the summary results of the October 2014 survey about drinking water quality.

• This study was prompted by recurring residents’ complaints and concerns about tap water quality and safety, voiced in local radio, newspapers and social media. Moreover, there was a lack of adequate statistical data on the issue, despite the fact that the municipal water treatment plant is operating since 2002.

• The objectives of this study were, therefore, to:
  • Measure individual perceptions and attitudes about drinking water quality; and
  • Understand residents’ opinions towards their tap water quality.
Methodology

- Ethics approval was granted by Memorial University of Newfoundland conjoint Health Research Ethics Board (NL) in June 18, 2014.

- We reviewed the available information on the tap water quality and residents’ complaints and concerns, and then designed the questionnaire, based on the stated study objectives.

- The questionnaire was tested by a small group of people to ensure the understanding of the questions and that the questionnaire could be filled out within a reasonable timeframe.

- This survey was conducted online through FluidSurveys by self-selection of residents in the community of Happy Valley-Goose Bay.

- The survey was posted online between August 12 and October 31, 2014. The survey link was distributed in the community via e-mail, social media websites and printed advertisement.

- Survey responses were entered into a computer in a spreadsheet format and statistical data analysis was done using the Excel macro package, created especially for this study.
Results

Participation rate

• A total of 676 residents entered the survey and among them:
  • 482 (80.47%) responded to all the questions;
  • The remaining 117 (19.53%) did not answer all the questions in the survey.

• A total of 512 of the 676 participants provided usable data; quantitative statistical analysis was conducted with varied sample sizes.

• 173 respondents gave their opinions or comments regarding drinking water issues.
Socio-demographic characteristics
79% of the respondents were from the Valley area.

In which part of the town are you living (in which neighbourhood)?

What is your gender?

67% of the respondents were female.
What is your place of birth?

55% of the respondents were born in Labrador.

What is your age?

92% of the respondents were above 24 years old.
What is the highest level of education that you have completed?

- College: 44.34% (227)
- University: 40.82% (209)
- High school: 13.67% (70)
- Below high school: 0.98% (5)
- No answer: 0.20% (1)

85% of the respondents have a college or university degree.

How long have you lived in Happy Valley-Goose Bay?

- Longer than 10 years: 77.93% (399)
- 6-10 years: 9.18% (47)
- 3-5 years: 7.03% (36)
- 1-2 years: 3.91% (20)
- Less than a year: 1.76% (9)
- No answer: 0.2% (1)

78% of the respondents have lived more than 10 years in Happy Valley-Goose Bay.
Perceptions of the quality of drinking water and satisfaction
What is the source of drinking water in town?

- **Surface water**: 38.67% (198)
- **Don't know**: 29.88% (153)
- **Groundwater**: 20.31% (104)
- **Both ground and surface water**: 10.55% (54)
- **No answer**: 0.59% (3)

Only 10% the respondents were well informed about the sources of drinking water in the community.
How important is the quality of drinking water in your household?

- Very important: 77.93% (399)
- Very unimportant: 17.58% (90)
- Somewhat important: 2.73% (14)
- No answer: 0.53% (3)
- Somewhat unimportant: 0.53% (3)
- Don't know: 0.39% (2)
- Neither: 0.20% (1)

81% of the respondents reported that the quality of drinking water is important (very or somewhat) in their household.
Overall, how satisfied are you with the quality of tap water in your house?

- Very dissatisfied: 54.69% (280) (275)
- Somewhat dissatisfied: 17.49% (90) (75)
- Somewhat satisfied: 14.45% (74) (31)
- Very satisfied: 10.35% (53) (12)
- Neither: 1.79% (9) (8)
- Don't know: 0.78% (4)
- No answer: 0.39% (2)

Note: In red, are numbers of respondents from the Valley area.

72% of respondents were dissatisfied (very or somewhat) with the quality of tap water; Among these respondents who reported their dissatisfaction, 69% were from the Valley area.
How do you rate the tap water in your home for the following factors?

**TASTE**

71% of the respondents (almost all of them live in the Valley area) rate the taste of their tap water very poor or poor.

**COLOUR**

70% of the respondents (most of them live in the Valley area) rate the colour of their tap water good or very good.
How do you rate the tap water in your home for the following factors?

**SMELL**
67% of the respondents (almost all of them live in the Valley area) rate the smell of their tap water poor or very poor.

**CLARITY**
58% of the respondents (most of them live in the Valley area) rate the clarity of their tap water good or very good.
How do you rate the tap water in your home for the following factors?

**BEING SAFE TO DRINK**

54% of the respondents (almost all of them live in the Valley area) rate the safety of tap water very poor or poor.

**BEING HEALTHY FOR YOU**

59% of the respondents (almost all of them live in the Valley area) rate the healthiness of tap water very poor or poor.
Have you noticed any changes to your tap water over time?

- Yes: 70.9% (369)
- No: 23.44% (120)
- Don't Know: 5.47% (28)
- No answer: 0.2% (1)

58% of the respondents had lived in HVGB longer than 10 years.
4% of the respondents had lived in HVGB between 6-10 years.
4% of the respondents had lived in HVGB between 3-5 years.
1% of the respondents had lived in HVGB between 1-2 years.
0.8% of the respondents had lived in HVGB less than 1 year.

The majority of the respondents were from the Valley area.

If “YES”, would you say the quality of your tap water has gotten...

- Much worse: 41.99% (215)
- A little worse: 14.06% (72)
- About the same: 8.98% (46)
- A little better: 1.56% (8)
- Don't know: 2.155 (11)
- No answer: 1.17% (6)
- Much better: 0.98% (5)

56% of the respondents (most of them were from the Valley area) indicated that their tap water has gotten much worse or little worse.
In your opinion, who should be most responsible for ensuring clean and safe drinking-water in town?

58% of the respondents indicated that the municipality is responsible for ensuring clean and safe water in the community.
Usage of tap water
What type of water do you use at home for the following activities?

Most of the respondents drank bottled water (53%) or filtered tap water (44%).

Only 22% of respondents indicated that they drank regular tap water and 8% of respondents drank boiled tap water.
“BOILED” water to…
1. Drinking water advisories
2. Ensure safety
3. Remove impurity/chemical
4. Improve taste

“BOTTLED” water decisions factors…
1. Preference of taste, smell and appearance
2. Safer, no contaminants and chemicals
3. Drinking water advisories

“FILTERED” water to…
1. Remove impurity/chemical
2. Improve taste
3. Ensure safety
4. Drinking water advisories
Awareness of public service announcement on drinking water
Do you think information about Drinking or Boil Water Advisories is being disseminated effectively and broadly?

80% of the respondents thought boil water advisories is not being disseminated effectively and broadly.

Thinking about the last time your area was under a Drinking or Boil Water Advisory, how did you hear about the public announcement?

88% of the respondents last heard about boil water advisories through social media or friends/co-workers.
Public announcement for both the Boil Water Advisory and lifting of the Boil Water Advisory should be done immediately using the following method…

- Local radio station: 85.55% (438)
- Phone call or email sent to residents or hand deliver notices to affected areas: 58.40% (299)
- Notice placed in the sign board at the STOP sign areas in the town: 55.08% (282)
- Fax, phone call or email sent to the Department of Government Services and businesses: 39.84% (204)

*Note: Multiple mentions taken into account*

Respondents indicated a multi-media approach for effective notification of order and lifting of boil water advisories.
Respondents’ opinions or comments
Summary of themes that emerged from the respondents’ opinions or comments

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

1. Recommendations for improving boil water advisory information system:
   e.g.:  
   • “If you could have an automated response sent out like they do for activities hosted at Peacock Primary School through the phone system, this would be best for us. I usually am not aware of boil orders until they are over.”
   • “The current system of warning residents about boil water advisories is pathetic. If we want to avoid another Walkerton, the Town should have an emergency notification system in place that informs all residences and all visitors. The suggestion above that notices are displayed at Stop signs would be a very good way of getting important messages out quickly to a lot of people.”
   • “A phone call and signs should be put up for boil orders and updated. The last boil order took three days until we heard. Not everyone has access to Internet, especially elderly persons.”
   • “Very ineffective at getting the word out about advisories. I typically see it on Facebook however not everyone uses Facebook and I have seen several occasions where people were unaware of the advisory. Furthermore, once the advisory is lifted it is difficult to get this communicated from the town.”
Summary of themes that emerged from the respondents’ opinions or comments (continued)

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

2. Problems with the boil water advisory information system:
   e.g.:
   • “The authorities do bad job of informing the public about the creation and lifting of boil advisories, it is usually Facebook by non regulator who let's me know. We have had 2 or 3 perhaps more advisories in MOT since may.”
   • “When the last public boil water advisory was in effect, nobody knew when or if it was lifted. The advisory was issued days before a long weekend, and I was unable to find out when it was lifted for three days after the long weekend. I only found out it was lifted after a town councilor had replied to my question on social media inquiring about the status of the advisory. I did not hear anything or see anything else posted in the community advising residents the advisory was lifted. The community has no communication in regards to water boil advisories. I believe this is reckless, harmful, and neglectful by the Municipal Government.”
   • “The dissemination of boil water advisories by the Town is pretty atrocious. They casually post them, often days late, on their 11th Council of HVGB Facebook page and barely follow up. It gives the impression that boil water advisories really don't matter, or that we should never trust our tap water.”
173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

### 3. Difference between the two water sources:

e.g.:

- “Think town manager of happy valley goose bay should swallow pride and realize they made a mess of our water supply and hook back up to spring gulch”.

- “Water in the valley area needs to be switched to the spring water like other areas in Goose Bay. This is an excellent source of water. It would certainly cut down on the corrosion of hot water tanks, kettles, faucets, etc. I cannot imagine anyone, in the valley area drinking unfiltered tap water, given what happens to some appliances.”

- “Time for the town council to admit there is a problem and switch us back to spring gulch. In this town, it's a disgrace to have to use bottled water when there is a spring with excellent water so.”

- “Would like the town to go back to the spring gulch water and save me the expense of hauling my water from the base every week!!!!!”

- “I believe the Town made a gross error in judgement when choosing the water supply site, and have been adding chemicals to try and improve the quality ever since, at the detriment of residents health and financial well being.”
Summary of themes that emerged from the respondents’ opinions or comments (continued)

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

4. Fear of getting sick:

  e.g.:
  
  • “It's time to change the water situation. I have never heard of so much stomach cancer in the past 5 yrs. I will not be surprised to hear that our Water is making us sick. I believe it to be fact.”

  • I am worried about the long term effects that drinking the town tsp water may have had on my family! We switched to filtered water 12 years ago. The issue is only getting worse no matter what the voiced concerns have been!

  • “Is fluoride in the water an option? Is it helpful for dental health? I've read that some of the chemical by products in the valley water is a little over the acceptable limit. I'd like to know once and for all if the water is safe to drink for healthy adults, kids, pregnancy, etc.”

  • “There needs to be better notice for boil water advisory. I drink tap water for days and giving it to my baby and then I hear there is a boil water advisory and never fails we get sick in some way after drinking the water. If there was better notification to the areas that is under boil water advisory, then they can take better precautions.”
Summary of themes that emerged from the respondents’ opinions or comments (continued)

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

5. Taste, smell and overall quality of tap water over time:

e.g.:

- We all know that the water in the valley tastes and smells bad, and we know that it is not good to drink. This is further supported by the corrosion rate of household piping, water tanks, and faucets. We should not have to be hesitant about drinking the water flowing from our taps, I just hope that this does not cause health issues for residence in the future.

- “With the drastic change in the quality of water I feel this should be taken more serious than it has been and alternate water sources should be looked at. After all health is more important than money. If they have to increase town taxes to make this happen I feel that the people of Happy Valley-Goose Bay would encourage it.”

- “We often get water for drinking from friends in the Park. I assume the safety (health) of the water is the same in areas of the town. I'm not sure why the smell and taste of the water is different in the valley. There are mornings when it really smells when you are in the shower.”

- “Had my water tested in my home by town staff, test results were in safe levels......still doesn't taste or smell acceptable.”

- “Please listen to us (Valley residents) on the quality of our drinking water! It is unfair (not to mention monetarily expensive) for residents in the Valley section of HV-GB to have to live with unpalatable drinking water of questionable quality!”
Summary of themes that emerged from the respondents’ opinions or comments (continued)

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

6. Excessive chlorination:

   e.g.:
   • “The chlorine issue MUST be solved. I feel that excessive chlorine is doing damage to the stomachs of our citizens that may never be proven...but.. scientists have concluded that too much chlorine along with all the other chemicals on and in our food are causing different types of cancer and other illnesses.”
   
   • “Please fix our water. NO MORE CHLORINE SMELL PLEASE”
   
   • “Residents deserve safe and clean drinking water. It should not be determined "safe" because of the amount chlorine they have to put in the water to clean up. Pure water suppose to be clear and tasteless. Goose Bay water does not have either of those characteristics.”
   
   • “I'm not an extremist who doesn't realize that water looks and tastes different everywhere (some people are REALLY riled up in town because the tap water doesn't taste like bottled water), and I don't necessarily think that the chlorination process is harmful, but it sure doesn't taste good. I am someone who drinks tap water almost exclusively; I don't drink juice, milk, pop, etc., so taste is important. I also worry about the chemicals that are in the ground around town from military activities, etc.--are we getting those in our water?”
Summary of themes that emerged from the respondents’ opinions or comments (continued)

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

7. Drinking water alternatives, i.e. bottled water or others:

   e.g.:
   • “If all residence are paying the same amount of tax for Water services then we should all have the same quality of water. This not being the case, the town should be responsible to supply all Valley residence with Bottled water until they get the water problem fixed. Maybe if they were out of pocket with bottle water instead of the residence they would take the problem more serious. An independent study without input from the town should be conducted on the quality of the water, with the results made public to the residence, and a mandate forced to have any problems found fixed. Some of these water samples should be taken from the taps of the residence not just the water treatment plant.”
   • “I have lived in this community for almost 50 years and I never thought in a million years that myself and my family would ever have to buy bottled water when it was really good to drink right out of the tap. Hoping to be able to be confident that our water is safe for my family soon :)”
   • “I do not use tap water, filtered, or bottled water. I use water from the natural springs around the area. If I am unable to get to the either of the natural springs, I will go to a fast running brook to get drinking water. I would never drink water from the tap in town.”
Summary of themes that emerged from the respondents’ opinions or comments (continued)

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

8. Power outages:

e.g.:

• “The town needs to invest in a backup power supply that can carry the load until the generator can start automatically. Having no power to the pumps until someone comes in to start the generator is not good enough. Over chlorination is not the answer, it's the best of the worst options. There is something in the water that makes my dogs sick... I have been unable to get any answers to what that might be. We filter our drinking water in two stages: ceramic and chemical removing filter that is better than your basic carbon filter.”

• “We often drink the water during Boil Water Advisories and unaware there is one in effect. We don't even know when they are not in effect! This is terrible. The water tastes terrible after power outages also.”
Summary of themes that emerged from the respondents’ opinions or comments (end)

173 survey respondents gave their opinions or comments regarding drinking water issues; themes that emerged included:

9. Other opinions/comments:

   e.g.:
   • When I first came to Happy Valley-Goose Bay in the 1970s, the drinking water was one of the best, most important things that I liked. Now the drinking water is another factor that makes me want to move from the area.
   • “Water safety is very important in encouraging people to drink water and live a healthy lifestyle. It is also important financially if the water quality causes hot water tanks, washers, silverware to ruin or give out quicker than normal. Safe drinking water at home can also reduce the garbage around town and in landfills.”
   • “When your study is complete please, do not allow anyone to attempt to gloss over any of the results or attempt to suppress any of the information. All results obtained should be readily accessible to the public. The Access to Information Act should not be required to get this information.”
   • “This is an important and good area of research.”
   • “Good luck, great initiative.”

All the 173 opinions/comments expressed by the survey respondents are listed in the following pages.
Do you have any more comments you would like to make about the subject?

1. “Notify the public about the purity of our water as compared to others across Canada, including percentages. Note that in some cases it is cheaper, safer, etc. to use the pure Labrador water than it is to use water in plastic coming from other towns that may not have water as pure as ours.”

2. “If you could have an automated response sent out like they do for activities hosted at Peacock Primary School through the phone system, this would be best for us. I usually am not aware of boil orders until they are over.”

3. “Obviously it's important to know when a boil order is in effect - it's there for a reason.... I think the town should call every household affected. Not everyone is connected to social media and not everyone listens to the radio. The town needs to more proactive in this area and not assume people know.”

4. “For the last boil water advisory, I found out from a friend who has Facebook. I do not have Facebook, I have a Twitter account, but I do not think the Town of Happy Valley-Goose Bay uses Twitter (or at least I haven't found their account). When a boil water advisory is in effect, a public notice should be placed on radio stations, public cable TV announcement and by email to residents. Towns in this day and age, can include the email address in the address field for each address that uses email, residents when paying taxes should have to verify their contact information annually (this will ensure there are few inactive email addresses). Email addresses can be placed in a group address system and a mass email can be sent to the full municipality for events happening in their town, I don't think it necessary to section out residential areas, a broadcast email to everyone that begins with: for residents of the XXX area please be advised... if you don't live in that area, at least you know (in case you have elderly parents who don't have email who might live in the affected area) and can also provide the information to people who may be impacted by an advisory. I don't particularly care to receive notices of community events etc. by email but when it comes to public safety, every effort should be made to reach residents.”
Do you have any more comments you would like to make about the subject? (continued)

5. “Our sinks and hot water tanks can’t handle the chemical, it eats it away.”

6. “If all residence are paying the same amount of tax for Water services then we should all have the same quality of water. This not being the case, the town should be responsible to supply all Valley residence with Bottled water until they get the water problem fixed. Maybe if they were out of pocket with bottle water instead of the residence they would take the problem more serious. An independent study without input from the town should be conducted on the quality of the water, with the results made public to the residence, and a mandate forced to have any problems found fixed. Some of these water samples should be taken from the taps of the residence not just the water treatment plant.”

7. “The solution is already in place and a small amount of capital money could resolve this issue. Our community used this same source for many years and there were a lot more people in town back in those days. Progress needs to be made and put this to bed!!”

8. “Very ineffective at getting the word out about advisories. I typically see it on Facebook however not everyone uses Facebook and I have seen several occasions where people were unaware of the advisory. Furthermore, once the advisory is lifted it is difficult to get this communicated from the town.”

9. “Not everyone has channel 5, I don’t listen to the radio, and I am on the town’s group on Facebook but not everyone is.”

10. “Social media such as Facebook should be utilized for Boil Water Advisories, and also a notice posted on the Town's web page.”
11. “The authorities do bad job of informing the public about the creation and lifting of boil advisories, it's usually Facebook by non regulator who let's me know. We have had 2 or 3 perhaps more advisories in MOT since May”

12. “The current system of warning residents about boil water advisories is pathetic. If we want to avoid another Walkerton, the Town should have an emergency notification system in place that informs all residences and all visitors. The suggestion above that notices are displayed at Stop signs would be a very good way of getting important messages out quickly to a lot of people.”

13. “As I said, Spring Gulch should be used, as for boil water orders, the town of HVGB needs to realize that several people (not just seniors, I have a friend that is a local bank manager that didn't know of a boil water order once) don't use Facebook and they need to do more to advise the public in these situations. There were very few boil water orders when we used Spring Gulch”

14. “The Facebook group "the giant happy valley virtual flea market" is a great way to get information to 10000+ people quickly and efficiently.”

15. “I have personally seen the effects of our water to my faucets, and hot water tanks. I am on my 3rd hot water tank since the plant came on line and have had to replace my kitchen faucet due to corrosion. Prior to plant coming on line there was never an issue.”

16. “Boil water notices could also be posted on social media such as the Town of HVGB FB site.”
17. “The dissemination of boil water advisories by the Town is pretty atrocious. They casually post them, often days late, on their 11th Council of HVGB Facebook page and barely follow up. It gives the impression that boil water advisories really don't matter, or that we should never trust our tap water.”

18. “Bottled water it is ...”

19. “The piping system is old, corroded.”

20. “Bring back the quality, taste and Safety of our water.”

21. “Our water situation is not acceptable. We should all be able to claim back our bottled water purchases for the amount of boil orders on here in HVGB You can't expect people to boil their water in summer with hot temperatures!”

22. “Worse town water I ever tasted. I been all over the country and can't trust HVGB water.”

23. “Periodic testing performed.”

24. “I would like to have clean healthy water and think with the number of financially profitable projects in Labrador there should be no problem paying for it.”

25. “I believe the Town made a gross error in judgement when choosing the water supply site, and have been adding chemicals to try and improve the quality ever since, at the detriment of residents health and financial well being.”

Do you have any more comments you would like to make about the subject? (continued)
Do you have any more comments you would like to make about the subject? (continued)

26. “Posting boil water advisories/notices exclusively on Facebook is an ineffective method of communication not only for this subject but for all subject matters. It is sad that our town management thinks the poor, the elderly and the marginalized population of our town are busy checking their computers to find out what is happening in Town. Very sad!”

27. “Please listen to us (Valley residents) on the quality of our drinking water! It is unfair (not to mention monetarily expensive) for residents in the Valley section of HV-GB to have to live with unpalatable drinking water of questionable quality!”

28. “I have lived in this town most of my life and never would have thought that the water quality would become so bad as it is in the past few years. I won't even give the tap water to my dogs.”

29. “Social media helps also. It should be noted however that not all people, elders have access to social media or town website.”

30. “The advisory notifications and liftings are disseminated terribly!! We never know when it begins or has ended. They need to take a more individualized approach to notifying citizens. Not everyone has a computer, reads the paper or listens to local radio stations. I would even suggest going around and putting notifications on the doors of the areas affected!!”

31. “Something need to be done about the dissemination of information regarding water: sometimes boil water advisories aren't heard of until one hears the order is lifted!!!”

32. “Automated calls to local residence affected by a boil water advisory would be wiser”
33. “The town should use more than one method of public announcements. It can utilize local radio, social media, their website, a water advisory email and the CETNetwork which is used by many working people in the community. It shares information which is then passed on to others. I sometimes take the CETNetwork information and share it with my social media contacts.”

34. “Boil order do not affect our family very much because of the use of the RO system we have installed. But all times there have been a boil order I have found out from friends and co-workers.”

35. “Annual flushing seems to be a regular occurrence in our area. I feel that advertising the flushing at least two week before the actually flushing is very much needed. Usually, our household do not hear about this until the day of which makes its occurrence unsafe. Sometimes, we have used the water despite the warning because we have not heard of the flushing in time.”

36. “Something needs to be done about our water; I won't even give it to my dog.”

37. “With the drastic change in the quality of water I feel this should be taken more serious than it has been and alternate water sources should be looked at. After all health is more important than money. If they have to increase town taxes to make this happen I feel that the people of Happy Valley-Goose Bay would encourage it.”

38. “Water in the valley area needs to be switched to the spring gulch water like other areas in Goose Bay. This is an excellent source of water. It would certainly cut down on the corrosion of hot water tanks, kettles, faucets, etc. I cannot imagine anyone, in the valley area drinking unfiltered tap water, given what happens to some appliances.”
39. “When the last public boil water advisory was in effect, nobody knew when or if it was lifted. The advisory was issued days before a long weekend and I was unable to find out when it was lifted for 3 days after the long weekend. I only found out it was lifted after a town councillor had replied to my question on social media inquiring on the status of the advisory. I didn't hear anything or see anything else posted in the community advising residents the advisory was lifted. The community has no communication in regards to water boil advisories. I believe this is reckless, harmful, and neglectful by the Municipal Government.”

40. “Please fix our water. NO MORE CHLORINE SMELL PLEASE”

41. “There was an advisory in effect for a few days before I heard about it, when I asked the town office why they did not notify me that there was a boil order on my street they told me it was posted on Facebook. I think they should done a lot more to notify people. so I checked Facebook daily to see if the order was lifted, I sent a message asking if the order was lifted. I am still waiting for a reply and that was 6-8 weeks ago. its just not good enough. There needs to be another way to notify people.”

42. “I truly think that the biggest barrier to obtaining clean, healthy drinking water in Labrador, is because we live in Labrador. The government only cares about paying off aboriginal groups to get access to minerals and natural resources in this part of the province. At least in Goose Bay we can drink the water. We recently returned from Rigolet, where the water is not safe and is a dark brown color. Also, the town only adds a boil water advisory to their Facebook page. They routinely forget to turn off the advisory.”

43. “We live in a beautiful town with unlimited natural water resources available, we should have drinkable, safe, tasty water straight from the tap! We pay high taxes to our municipality, and in our provincial and federal government, these levels should put back some of that to provide us with that basic need.”
44. “Announcements with regards to Boil Order Advisories should be made more public than they are. I have only seen them posted on Facebook here of late. I don't have cable at home, so I can't see any public announcements on the local station.”

45. “Social media is great for getting the message out, BUT elders are not likely to have computers/set up for Facebook/Twitter, etc.....the local radio station, notices printed on bright paper put in the grocery stores, convenience stores, etc...to assist with getting the word out - even getting government offices to assist.”

46. “There needs to be better notice for boil water advisory. I drinks tap water for days and giving it to my baby and then I hear there is a boil water advisory and never fails we get sick in some way after drinking the water. If there was better notification to the areas that is under boil water advisory then they can take better precautions.”

47. “I live in the "lower valley" on Roberts Road, and we fill our water jugs at work on base. We try to avoid consumption of the water from our own taps. If you fill a bathtub with the tap water you can notice a faint blueish green coloring, and when using a hot shower you can smell a chlorine bleach scent. Don't feel safe using tap water but cannot afford to buy for every use except drinking water and it's expensive buying drinking water for 5 adults. The water doesn't smell right and there is a lot of sand in it, bleaches my kitchen sink once a week because of the stain from sand in the water. We had to replace our hot water tank because of the damage from the water it was a big tank and it should of lasted a lifetime one time they did. A lot of people are replacing hot water tanks they break because of the water issues we have since they put in a new water system in our area.”

48. “Put residents on an email/phone list to advise of water issues!”
49. “We all know that the water in the valley tastes and smells bad, and we know that it is not good to drink. This is further supported by the corrosion rate of household piping, water tanks and faucets. We should not have to be hesitant about drinking the water flowing from our taps, I just hope that this does not cause health issues for residence in the future.”

50. “Had my water tested in my home by town staff, test results were in safe levels......still doesn't taste or smell acceptable.”

51. “spring gulch.”

52. “Something has to be done. People are having to replace hot water tanks and faucets very 3-5 years. This items should last longer.”

53. “Public announcements are being done through social media (Facebook, twitter, etc.) but they are not always updated.... Other ways to announce are through the town website, on the new digital sign on Hamilton River Road near the arena, through the CET community email network. The province and the town need to work together to do something about our water!”

54. “I whole hearty hope this survey will result in something happening to improve the drinking water situation especially in Happy Valley.”

55. “Using the town web site is nearly enough ,all other method can be done without any extra cost.”

56. “Not all residents have access to cable and social media and probably go unaware of advisories.”
When I first came to Happy Valley-Goose Bay in the 1970s, the drinking water was one of the best, most important things that I liked. Now the drinking water is another factor that makes me want to move from the area.

We're still much better off than most places in the world, but with the access to water that we have here, we should be able to do better.

A phone call and signs should be put up for boil orders and updated. The last boil order took three days until we heard. Not everyone has access to Internet, especially elderly persons.

Safe drinking water is a basic human right. We should not have to put up with the low quality water that we have. My home is 3 years old and already I have to replace taps due to corrosion.

I think when there are boil orders each house should be contacted by phone or a message left at the door as we always don't listen to the radio or be on social media.

Last time I seen a boil order notice was on Facebook. A lot of old people don't use computers so they wouldn't even know.

I heard about the last boil advisory 4 days after it came into effect.

We often drink the water during Boil Water Advisories and unaware there is one in effect. We don't even know when they are not in effect! This is terrible. The water tastes terrible after power outages also.
Do you have any more comments you would like to make about the subject? (continued)

65. “Use our property tax money where it should be used, in our water and sewer systems. And anywhere else it's needs to be used to benefit the residents that pay for the service.”

66. “Dissemination must ensure ALL residents are aware of all Advisory, therefore the a call or a hand delivered notice is best. The reason not all have access to the internet or out and about to see a sign. E.g. senior citizens.”

67. “While I understand there are other areas and music italicizes that has more severe water issue, such as Black Tickle, I do feel this is a serious issue and concern for Happy Valley-Goose Bay. More needs to be done. In addition to my suggestions previously listed, responsibility needs to be placed on industry as well. Industry needs to ensure to activities are not impacting water security and safety, as well governments need to ensure that too. Money and perceived economic benefits a should not bear more weight than safety and water security. I believe muskrat falls project is and will continue to impact out water and I do not trust government the contamination from the base is being fully remediated. I believe the cost of correcting is too much in the minds of government and industry. A watch-dog group should also be established, one made up of municipal government, residents and experts, to monitor and ensure proper protocols are being followed and safety regulations are being met.”

68. “The fact that we have had so many boil water advisories this year/summer to me indicates that there is a big problem with our water system.”

69. “Keep an up to date website, often the advisory would be taken off via word of mouth but the municipal website is still saying it is on. Maybe include maps of the affected areas.”
70. “The valley's water is like living in a third world country when it comes to the safety of my life and my child's. Too live in Labrador and to expect this is disappointing.”

71. “I am worried about the long term effects that drinking the town tap water may have had on my family! We switched to filtered water 12 years ago. The issue is only getting worse no matter what the voiced concerns have been!”

72. “Time for this problem to be addressed and not put on the back burner as it has been over the years.”

73. “Think town manager of happy valley goose bay should swallow pride and realize they made a mess of our water supply and hook back up to spring gulch.”

74. “Use all forms of communication to get information out to the town.”

75. “All residents should have to use the same water, its discrimination for valley folk to have to drink crap and put up with the maintenance when other parts of town has good water. I would rather deal with water shortages than replace a water heater every 28 months.”

76. “Is the town investigating why hot water tanks are not lasting as long as they used to? Town does a very poor job of calling off boil water advisories. For our last one we called the town one afternoon to find out it if was still on and 2 separate staff said yes. We found out later that day from the town's info page that it was indeed over. Poor poor communication to staff works who deal with the public.”

77. “The town needs to do a better job in getting out boil orders out to the community.”
78. “Would like the town to go back to the spring gulch water and save me the expense of hauling my water from the base every week!!!!!”

79. “The chlorine issue MUST be solved. I feel that excessive chlorine is doing damage to the stomachs of our citizens that may never be proven...but.. scientists have concluded that too much chlorine along with all the other chemicals on and in our food are causing different types of cancer and other illnesses.”

80. “The frequency and duration of boil orders in Goose Bay is unreal. Having lived in many different parts of the province, including the North coast of Labrador, Goose Bay is by FAR the worst for water consistency and quality. While the taste and clarity are good I don't completely trust it. Newspaper, cable and radio announcements aren't enough..... I don't have cable, I don't listen to radio and I don't read the paper. The bottom line is water quality is not good enough.... We shouldn't be on a BWA almost every week. It is extremely frustrating..... Especially when we pay.”

81. “It's as if the residents are left to their own accord ......if they find out fine.....very poor on part of the town in getting the information out.”

82. “Unacceptable quality of drinking water.”

83. “We often get water for drinking from friends in the Park. I assume the safety (health) of the water is the same in areas of the town. I'm not sure why the smell and taste of the water is different in the valley. There are mornings when it really smells when you are in the shower.”

84. “Just better water.”
Do you have any more comments you would like to make about the subject? (continued)

85. “Whereas the onus for reliable water rests with all levels of government, there is a tendency for the public to expect to be spoon-fed, (no pun intended) and there is no emphasis placed on individual responsibility for education and local knowledge, and attention to current community affairs. E.g. how many people are knowledgeable about the various sources of our water as offered in the introductory questions? Perhaps this questionnaire will trigger more awareness? Perhaps. I've resided in this area for over 50 years, and many older folk recall when the town was rudimentary, without municipal services of any sort, and without due recognition and support from an unconcerned Province Government. People had to be responsible for their own supplies, sank their own individual wells, shared with neighbours, and slops went over the river bank, so we have seen huge progress from those times - hence I am largely content with today's facilities. Losing the Spring Gulch option years ago in the overall network was regrettable, but typical of our two-town mentality. Note the decades of awful sewage disposal with which some of us have battled until recently - but that's another story.”

86. “We installed a Water Filter on the main water line coming into our home. Within several (3 or 4) days (not even a week!!) we had barely any water pressure in the second floor bathrooms, down to a medium trickle...not enough pressure for a shower. Main floor kitchen pressure was medium at best. Did not run the dishwasher for fear of burning up the motor. My husband checked the filter and it was FULL OF SAND. We went to the Town and explained the problem and asked to have out money reimbursed, because we felt that it showed an issue with the Town System on various levels. Hah! Didn't happen. We had to remove an expensive filter and go back to the whole "boil and buy" thing we'd been doing before.”

87. “When are we going to hear about an unbiased water quality test results? As well as a list and concentrations of the chemicals found in it?”
Do you have any more comments you would like to make about the subject? (continued)

88. “I was born and raised in this town. I would always brag about how good our water was. As far as I am concerned the water in Happy Valley is not fit to drink. A town this size in Labrador definitely should not have this problem when such a perfect source of water is on our doorstep. I now find our water is a source of embarrassment.”

89. “There is no where to find out if residents are still on boil order, like for example a part of town had a boil order a little while ago and no one knew when it was over because nothing was posted, etc.”

90. “It looks like the town is erecting a sign that you may be able to place notices/information on. That would be very useful to see the announcement on the lit-up sign being erected near the town/arena.”

91. “I think there are a significant increased number of advisories in the last few years than I ever recall in my 37 year history in Goose Bay. It seems that water technology and quality is going backwards. I do not feel that we have made progress. I would like to see an independent study of water quality.”

92. “I never know when a boil water advisory is in effect, I'm not on Facebook regularly, and as far as I know, this is the only method the town of Goose Bay is currently using.”

93. “I do not use tap water, filtered, or bottled water. I use water from the natural springs around the area. If I am unable to get to the either of the natural springs, I will go to a fast running brook to get drinking water. I would never drink water from the tap in town.”

94. “Notifications on the website and Facebook along with an announcement on the radio would get most of the population.”
“Water safety is very important in encouraging people to drink water and live a healthy lifestyle. It is also important financially if the water quality causes hot water tanks, washers, silverware to ruin or give out quicker than normal. Safe drinking water at home can also reduce the garbage around town and in landfills.”

“Usually do not hear about boil water advisories. Tap water is green and turns the bathtub etc. green. Taps get clogged with crystals.”

“This is an extremely important issue in our town. Thank you for bringing it to the forefront. Hopefully something can be done.”

“Sometimes I don't hear if there IS or Boil Water Advisory and don't hear when it is lifted.”

“Would like better drinking water or a public place to get treated water as in Rigolet, etc.”

“On TV would be good.”

“Time for the town council to admit there is a problem and switch us back to spring gulch. In this town, it’s a disgrace to have to use bottled water when there is a spring with excellent water so.”

“Town Council should be held responsible for hot water replacement due to salt, etc in present water supply.”

“There is very obviously a problem with the drinking water in the valley portion of town. It needs to be addressed immediately. If even my dog refuses to drink the tap water, that tells me she can definitely smell something wrong with the quality of the water.”
Do you have any more comments you would like to make about the subject? (continued)

104. “I am Happy Valley-Goose Bay born and raised. At one time I bragged about how good our water was - spring water out of our taps. I laughed at the thought of buying bottled water - who would pay money for water? When we were first switched off of spring gulch water I wondered why we all of a sudden didn't have enough supply for all of the town when we managed just fine when our base was double the size it is now but I didn't feel concerned about what our new water source would be. If I knew then what I know now I would have sounded the alarm, warned everyone not to let this happen but at the time I just assumed that the people in charge would be ensuring that our new water source would be of the same quality as what we had then. What a joke! Within the first year of being changed to well water my tub and toilet had green stains. Our shower faucet fell apart from rust. The same faucet that had been in the house for 10+ years with no sign of wear. I was excited in 2009 to move into a new home in a new subdivision of town. In 2012, three years into our new construction home, we awoke to the sound of running water. Our three year old hot water tank had burst! I had to make a claim on my home insurance to replace a huge amount of hardwood flooring. I started watering my houseplants with bottled water and the leaves turned from yellow back to green. I always buy special laundry detergent for dark clothes so that my work clothes don't fade but it doesn't make a difference when the laundry water smells like the swimming pool. Everything fades. I am fearful of what our tap water does to our bodies when my toilet, sink and water tank are stained and rusted. I pray that someone fixes this, and soon!”

105. “I'm not an extremist who doesn't realize that water looks and tastes different everywhere (some people are REALLY riled up in town because the tap water doesn't taste like bottled water), and I don't necessarily think that the chlorination process is harmful, but it sure doesn't taste good. I am someone who drinks tap water almost exclusively; I don't drink juice, milk, pop, etc., so taste is important. I also worry about the chemicals that are in the ground around town from military activities, etc.--are we getting those in our water?”
Do you have any more comments you would like to make about the subject? (continued)

106.“It's great that we are advised by social media but I'm thinking about the population that don't avail of the internet or even those that aren't on Facebook or Twitter, something more should be done so that those people are more informed. There seems to be a lot of boil order advisories in different areas of our town a lot more frequently of late.”

107.“We never get advised about a water boil until long after the cause for the water boil. I think that's like closing the barn door after the animals has escaped. It's always days after the fact.”

108.“Any advisories should also use social media to get the message out. Hardly anyone ever uses the radio or the ad channel on TV for notifications anymore. Automatic phone calling would be an awesome tool to utilize as this will make sure everyone gets the message!”

109.“I am relieved that a survey is being administered. We have been calling for years for something to be done about our water situation. Hopefully this survey will act as support for the municipal government to take forward to other governments for financial support to improve our town water system. Thanks for allowing me the opportunity to participate.”

110.“I have lived in this community for almost 50 years and I never thought in a million years that myself and my family would ever have to buy bottled water when it was really good to drink right out of the tap. Hoping to be able to be confident that our water is safe for my family soon :)”

111.“I hope by you doing these tests we can find out what is in our water and we can feel safe about using or drinking etc. again.”
Do you have any more comments you would like to make about the subject? (continued)

112. “We pay very high taxes for town services at least our water should be fit to drink.”

113. “Yes, we would like to get all our water from spring gulch, the town council should do this now.”

114. “The town needs to invest in a backup power supply that can carry the load until the generator can start automatically. Having no power to the pumps until someone comes in to start the generator is not good enough. Over chlorination is not the answer, it’s the best of the worst options. There is something in the water that makes my dogs sick... I have been unable to get any answers to what that might be. We filter our drinking water in two stages... ceramic and chemical removing filter that is better than your basic carbon filter.”

115. “Make a real water treatment plant or find another source of water.”

116. “I think it’s about time a test is being done on the drinking water supply. Years ago when my parents lived on Base, there was never an issue with the drinking water taste or smell.”

117. “Is fluoride in the water an option? Is it helpful for dental health? I've read that some of the chemical by products in the valley water is a little over the acceptable limit. I'd like to know once and for all if the water is safe to drink for healthy adults, kids, pregnancy, etc.”

118. “WATER IN THE VALLEY - GROSS WATER EVERYWHERE ELSE - GOOD ?????”

119. “Water is the most valuable resource we have, essential to everything. I really hope the water quality can be improved in the valley. I work everyday down here and have to drink filtered or tap water because I can't stand the smell when the taps are turned on - therefore will definitely not drink it!”
Do you have any more comments you would like to make about the subject? (continued)

120. “I don't listen to local radio, I don't drive around town all the time. I don't go on face book all the time. I check email most every day. I answer my door if someone comes by. I can hear a loud horn announcement if a vehicle drives around with a water warning.”

121. “We need are water cleaner so we can drink it. Buying cases of water here isn't that cheap.”

122. “When your study is complete please, do not allow anyone to attempt to gloss over any of the results or attempt to suppress any of the information. All results obtained should be readily accessible to the public. The Access to Information Act should not be required to get this information.”

123. “This is an important and good area of research.”

124. “I rarely listen to the local radio station thus announcements regarding water quality are of little value to me. The town website is no maintained properly thus this is not a reliable source for boil order information. In one case that comes to mind, my home was under boil order for more than 4 days before I became aware of the situation. Had there been a serious hazard this could have had a much different outcome. I suspect that there have been other times that I had not been aware at all for the full extent of a boil order.”

125. “I believe that, until the municipality can provide the best possible, and least contaminated source of water for this community, the fees paid for safe water in this community should be reviewed. Why ask the residents to pay service fees for water most residents in the lower portion of the town can't even drink?”

126. “I am glad that you folks are doing this study. Hopefully you will be able to improve the water situation in our town.”
Do you have any more comments you would like to make about the subject? (continued)

127. “Bottled water should be a regulated industry.”

128. “Advise the public when the advisory is lifted.”

129. “The question about the bottled water. We use it for drinking at home even though it's bad too (after watching the documentary we know that), but we feel it's the lesser evil of the two. It happened several times that we (and other people we know) found out days later that there was a boil water advisory. If you don't listen to the radio, you'll never find out!”

130. “The town of Happy Valley Goose Bay needs to make Boil Water Advisory notices more public, and use different media sources to do this. If it wasn't for the radio in the work truck I would have never heard any of the advisories and would have continued using the water just the way it is. That is extremely unsafe.”

131. “Do something PLEASE! This is not a third world country. We have the most fresh water in the world! We should not be in this situation, we are a G7 nation, PLEASE HELP! Cartwright Labrador is worse! They have been on a Boil Water Advisory as far back as I can remember! We are in a "have" province in a first world nation, this should not be an issue, but it is. Again, Please Help!”

132. “It seems that you will hear about a boil water advisory not long after it is reported but you don't hear about when it is lifted unless you ask.”

133. “There's a good chance that if we get our water improved the government or town will have their share in and need to raise the cost of our water. No one likes that. Give us something that we could be proud of for once. That would be a kind surprise.”
Do you have any more comments you would like to make about the subject? (continued)

134. “Governments should be held liable for all cancer related deaths that have been caused by chemicals ingested by homeowners.”

135. “There needs to be something implemented for the older generation that do not own a computer and the upcoming generation where all we use are electronics. I have no idea how a calm medium will happen but something needs to be done.”

136. “I hope someone will find a solution to fix our water issues here in the Valley!”

137. “As people should be notified ahead of time by pamphlets dropped off at the hose a few days before water flushing an also by radio on all stations and where there is a water break is should be notified by radio at least very half hour. Tested to show that the water is clear of all health hazards then it should be placed on radio to let everyone know the water is safe to drink.”

138. “We have a new message board the town just put up. Notices should be advertised there as well. Sometimes your drinking the water for days before you even know there's a boil water in affect!!”

139. “I believe a lot of people now-a-days are very busy and don't have the time to relax and listen to the local radio or local TV station etc. I believe there should be a way residences can sign up to receive email notices about something as important as a boil water advisory.”

140. “I hope that from this study will come recommendations to the town on how to improve the quality of the drinking water in this town for the health and well-being of the people who live here. Thank you.”
Do you have any more comments you would like to make about the subject? (continued)

141. “The town now has an impact sign it can use to make announcements of this sort. We were advised of the boil water in place, but not when lifted and not informed via radio how long to boil water or why it was in place - I figured for flushing lines.”

142. “It's time to change the water situation. I have never heard of so much stomach cancer in the past 5 yrs. I will not be surprised to hear that our Water is making us sick. I believe it to be fact.”

143. “Water quality, taste and smell is extremely important. Hopefully this survey will make a difference.”

144. “The fact that our water may have a higher sodium content concerns me more than the chlorine smell. You can taste the salty water and even when you make ice cubes from it they do not freeze clear but are white in middle and not very hard to break apart. I am concerned for my health and the effects of high sodium content may have in the long term. We even decided not to buy a fridge with an ice maker because of the water quality. My brother lives in MOT area and we share a cabin we only use water from his home at cabin for our tea there because of the taste. In terms of quality I feel the towns well system has been a step backwards. Thanks for you survey.”

145. “BWA's are posted on Facebook after the fact.”

146. “Every effort should be made to ensure residents are aware of Boil Water Advisories and an explanation should be given as to why there is a boil advisory. The difference between advisories and orders should be made clear. Educated staff should be speaking on behalf of Town definitely not Town Council. Those people are volunteers.”
147. “Get better water for what we pay for....”

148. “In most circumstances, I do not hear about the Boil Water Advisory until I am at work. I do Brita my water when drinking but never for any other activity unless I am aware of same. Agitating the frequency of these. The water in the Valley area is deplorable. I personally have spent thousands of $$$$$ for a filtration system. Other spend a fortune on bottled water while others resort to using springs and / or getting water from friends in other parts of town. Hound hold equipment, piping and appliances fail prematurely costing residents a fortune.”

149. “I live the tap water in spruce park but I wouldn't dare drink the water in the valley!”

150. “The towns website should be kept up to date regarding advisories.”

151. “The Town of HV-GB has put a lot of money into a new water treatment plant but is there anybody qualified or trained to run and regulate it?”

152. “THIS IS AN URGENT ISSUE.”

153. “Unfortunately boil water advisories are being ignored as they are just about every week. Increases the discontent with our water as good water does not have boil order advisories every other week. Government is too strict on conditions for the advisories and other factors and more efficient way of testing water on that site needs to be attained more timely and efficiently as water on main is up and running which would determine whether boil order needs to be publicized on that particular repair. Waiting for results from St. johns is not the answer.”
Do you have any more comments you would like to make about the subject? (continued)

154. “Something needs to be done now before our health is effected and too late, I can just barely shower with our town water.”

155. “With so many boil water advisories that happen, the town should be liable to provide safe drinking water and perhaps provide a water voucher or give some sort of incentive for living in such a crap hole water place.”

156. “I realize that all of the tests to our water over the past number of years have indicated that it is safe. I do have trust in the system, however I have seen first hand what that water does to copper pipes, stainless steel plumbing fixtures and hot water tanks. It is highly corrosive so when given a reasonable alternative I will use it. For me, that alternative is bottled water and a reverse osmosis system. I kid you not, in 9 years I am on my 4th hot water tank. Anything that can destroy a hot water tank in 2 years should not be regularly ingested....period.”

157. “Please, put more emphasis on cleaning up our water supply. I once was able to brag about the water in goose bay and now not so.”

158. “My family and I reside in a new home - less than two years old. Since moving into our home, we are on the 4th set of bathroom taps for the master bathroom, two keurigs, two coffee pots and numerous soap dishes and dispensers due to the unsatisfactory water. Our bathroom fixtures are actually starting to rust. Not impressed. We purchased a reverse osmosis water system for our home. It was very expense, but so worth it.”

159. “Town council should be responsible for replacing all my silverware and cookware, it's all rusted!!”
Do you have any more comments you would like to make about the subject? (continued)

160. “Thank you.”

161. “Lifting the boil water could be advertised on the local TV channel. When we had the last boil water advisory I did not know when the ban was lifted. Perhaps it could be posted on the Town Hall web page as well.”

162. “With an abundance of fresh water sources close to the town, why not ensure the water supply comes from that source. A large river runs by our door. Clean good tasting water should not be denied us. It's as important as the air we breath.”

163. “Very dissatisfied with the quality, having to replace plumbing fixtures that have rotted out after a few years, the constant staining of toilets, sinks. Not happy that the Town council keep telling us there is nothing wrong with our water, there was never an issue when we were on Spring gulch. Not happy about the price we pay for water that some people won't even let their dog drink. I hope all of this studying is not a waste of our tax payers money, and that a solution will be sooner than later.”

164. “Improve our drinking water. Go back to the old system.”

165. “Seems to be a lot of boil order notices lately which is concerning.”

166. “Stop fucking with our water fer our bongs.”

167. “Get rid of the well water and put the whole town on Spring Gulch. The Mayor and council are ignoring the problem.”

168. “The water is disgusting and not fit to drink or shower in.”
169.“Good luck, great initiative.”

170.“We have a seasonal home in a community that has been under boil-water orders for twenty years. Nobody pays any attention to it. I worry about it but I don't do anything about it either—we just drink what comes out of the taps. I don't think people take clean water seriously, and they probably don't take it seriously when their are short-term boil-water orders here either. Another minor issue I have is the lack of water fountains in the new airport. That was a specific decision of the authorities, I'm told. They said nobody needed them, but you go there and everyone is sucking on a bottle of imported water, a plastic bottle that gets into the woods and water after it is empty. Few public buildings have water fountains. I recently stayed at a hotel in Red Bay where there was a boil-water order. There was no water provided in the rooms, nor at the diner. You had to buy bottled water to do your teeth. I think businesses like the airport, hotels and diners, the college, hospital, all of them, should be doing more to provide clean water for their customers, and if they don't want to take on the cost, they should be getting on to their municipal governments to do something to provide clean tap water for them. If that requires higher taxes, so be it, let them adjust their prices accordingly. Clean water can't be as damaging to the environment or as expensive as bottled water.”

171.“Residents deserve safe and clean drinking water. It should not be determined "safe" because of the amount chlorine they have to put in the water to clean up. Pure water suppose to be clear and tasteless. Goose Bay water does not have either of those characteristics.”

172.“It seems wrong that we cannot be certain of our water.”

173.“Thanks for the survey! :)”
Conclusions

• The results of this survey is representative of the residents in the Valley area of town.

• The majority of respondents were concerned about the quality of tap water. This led to a high degree of dissatisfaction with municipal drinking water system and use bottled water or filtered tap water for drinking.

• Factors that influence perceptions and attitudes towards drinking water quality are the taste, smell, taste, healthiness and safety.

• The need of a multiple media strategy for effective communication of the boil water advisories to the public was cited by the respondents.

• This understanding of the respondents perceptions, concerns and opinions can help in improvement strategies of drinking water quality (especially in the Valley area) and public notification of boil water advisories.
March 24, 2014

To Whom It May Concern,

On behalf of the Town of Happy Valley-Goose Bay, I would like to extend our support of Merline Fonkwe's research project on the evaluation for the quality of the drinking water in our community. The town is currently re-examining our water system and how we can best move forward with providing a high-quality water resource to our residents. The more information that our town can obtain the better, which is why we are feel so strongly in favor of this project.

This study would be crucial to the decision-making process in the design of sustainable management strategies of our water treatment plants, not only for the prevention of public health hazards, but also for the improvement of communication leading to amelioration of public perceptions and attitudes towards the quality of our tap water. We feel that partnering with the Labrador Institute for this project will lead us as a municipality in achieving this exact goal.

If you would like to discuss this further with a representative of the town please feel free to contact the Chair of our Municipal Services Committee, Councillor Shannon Tobin. He can communicate Council’s support of this project.

Sincerely yours,

Jamie Snook,
His Worship The Mayor
Appendix 2: Printed advertisement of the survey

Drinking Water Study of Happy Valley – Goose Bay
by
The Labrador Institute of Memorial University of Newfoundland, located here in Happy Valley–Goose Bay at 219 Hamilton River Road

Do you live in Happy Valley-Goose Bay?

Do you have an opinion about the quality of your drinking water?

If so, you are invited to participate in the online survey until October 31, 2014. The survey will take approximately 10 minutes to fill in and is completely anonymous.

For any further details (including contact information) and to participate, please follow the link below.

http://fluidsurveys.com/surveys/hru/hv-gb-drinking-water/

Your participation is greatly appreciated!
Appendix 3: Survey questionnaire

A survey of residents’ perspectives of drinking water in Happy Valley-Goose Bay

Do you live in Happy Valley-Goose Bay? Do you have an opinion about the quality of your drinking water? If so, you are invited to participate in the online survey below until **October 31, 2014**, as part of a community-based research project conducted at the Labrador Institute of Memorial University of Newfoundland. This project is funded by the Harris Centre, Memorial University of Newfoundland. This is a short survey designed to gain a better understanding of how residents perceive the quality of their tap water. Your feedback is very important for this study! If you have any questions before you complete this survey, please email us, Dr. Merline Fonkwe ([merline.fonkwe@mun.ca](mailto:merline.fonkwe@mun.ca)) and Dr. Rebecca Schiff ([rschiff@mun.ca](mailto:rschiff@mun.ca)). All survey responses will be completely confidential. If you complete the survey then you will have the opportunity to participate in a draw for 5 cash prizes of $50 each.

All the results of this survey will be available to the general public in summer 2015 through the Labrador Institute/Harris Centre, Memorial University of Newfoundland website and the Town. Survey respondents will not be identified by name or any other information that could be used to infer your identity.

Your participation is greatly appreciated!

**Note:** Please be aware that by completing and submitting the following survey, you have provided consent to participate in this research study.

**Characteristics of the Samples**

1. **In which part of the town are you living (in which neighbourhood)?**
   - Spruce Park
   - MOT/Hamilton Heights
   - North Side
   - Valley (Upper and Lower Valley)
   - Base (5 Wing)
   - Dock/Terrington Basin

2. **What is your gender?**
   - Male
   - Female
   - Other

3. **What is your place of birth?**
   - Labrador
   - Island (Newfoundland)
   - Somewhere else

4. **What is your age?**
   - 18-24
   - 25-34
   - 35-44
   - 45-54
   - 55-64
   - 65+
5. What is the highest level of education that you have completed?
   o Below high school
   o High school
   o College
   o University

6. How long have you lived in Happy Valley-Goose Bay?
   o I moved here this year ( ) Months
   o I have lived here for ( ) Years

7. How many people typically live in your household?
   o 1
   o 2
   o 3-4
   o 5+

8. How old is the house/apartment you are currently living in?
   o Less than 10 years
   o 11-20 years
   o 21-40 years
   o 41-60 years
   o 60+ years

Perceptions of the quality of drinking water and satisfaction

9. What is the source of drinking water in town? Please select all that apply
   o Groundwater (well water)
   o Surface water (lake or river)
   o Don’t know

10. How important is the quality of drinking water in your household, on a scale of 1-5 (with 1 being very unimportant and 5 being very important)?

<table>
<thead>
<tr>
<th>1 Very unimportant</th>
<th>2 Somewhat unimportant</th>
<th>3 Neither important nor unimportant</th>
<th>4 Somewhat important</th>
<th>5 Very important</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

11. Overall, how satisfied are you with the quality of tap water in your home, on a scale of 1-5 (with 1 being very dissatisfied and 5 being very satisfied)?

<table>
<thead>
<tr>
<th>1 Very dissatisfied</th>
<th>2 Somewhat dissatisfied</th>
<th>3 Neither satisfied nor dissatisfied</th>
<th>4 Somewhat satisfied</th>
<th>5 Very satisfied</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
12. Using a scale of 1-5 (with 1 being very poor and 5 being very good), how do you rate the tap water in your home for the following factors?

<table>
<thead>
<tr>
<th></th>
<th>1 Very poor</th>
<th>2 Poor</th>
<th>3 Barely acceptable</th>
<th>4 Good</th>
<th>5 Very good</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td></td>
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<tr>
<td>Taste</td>
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<tr>
<td>Smell</td>
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<tr>
<td>Clarity</td>
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<tr>
<td>Being healthy for you</td>
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<tr>
<td>Being safe to drink</td>
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</tr>
</tbody>
</table>

13a. Have you noticed any changes to your tap water over time?
   - o Yes
   - o No
   - o Unsure

13b. If “YES”, what changes have you noticed?
   Box (Please specify the changes here)

13c. If “YES”, would you say the quality of your tap water has gotten...
   - o Much better
   - o A little better
   - o About the same
   - o A little worse
   - o Much worse
   - o Don’t know

14. On a scale of 1-5 (with 1 being very poor and 5 being very good) how would you rate the overall quality of tap water in different parts of town? Why?

<table>
<thead>
<tr>
<th></th>
<th>1 Very poor</th>
<th>2 Poor</th>
<th>3 Barely acceptable</th>
<th>4 Good</th>
<th>5 Very good</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spruce Park</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>MOT/Hamilton Heights</td>
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<tr>
<td>North Side</td>
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<tr>
<td>Valley (Upper and Lower Valley)</td>
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<tr>
<td>At the Base (5 Wing)</td>
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<tr>
<td>Dock/Terrington Basin</td>
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</tbody>
</table>
15. In your opinion, who should be most responsible for ensuring clean and safe drinking-water in town?
   - Federal government
   - Provincial government
   - Municipal government
   - First Nations government and council
   - Industries
   - Individual citizens
   - No opinion

16. What do you think should be done to improve the quality of drinking water in town?
   Box (Please provide comment here)

Usage of Tap Water

17a. What type of water do you use at home for the following activities? Please select all that apply for each of the activity

<table>
<thead>
<tr>
<th></th>
<th>Regular tap Water</th>
<th>Filtered tap water</th>
<th>Boiled tap water</th>
<th>Bottled water</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking</td>
<td></td>
<td></td>
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<tr>
<td>Cooking</td>
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<tr>
<td>Washing food</td>
<td></td>
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<tr>
<td>Food preparation where you are mixing with water</td>
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<tr>
<td>Making coffee or tea</td>
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<tr>
<td>Brushing teeth</td>
<td></td>
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</tbody>
</table>

17b. If you selected “FILTERED” water, how important are the following factors when deciding to use FILTERED tap water at home? Please rate each one on a scale of 1-5 (with 1 being very unimportant and 5 being very important)

<table>
<thead>
<tr>
<th></th>
<th>1 Very unimportant</th>
<th>2 Somewhat unimportant</th>
<th>3 Neither important nor unimportant</th>
<th>4 Somewhat important</th>
<th>5 Very important</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>To remove impurity/chemicals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To improve the taste</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>To ensure safety</td>
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<td></td>
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<tr>
<td>Drinking Water Advisories</td>
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<td></td>
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</tbody>
</table>
17c. If you selected “BOILED” water, how important are the following factors when deciding to use BOILED tap water at home? Please rate each one on a scale of 1-5 (with 1 being very unimportant and 5 being very important)

<table>
<thead>
<tr>
<th>Factor</th>
<th>1 Very unimportant</th>
<th>2 Somewhat unimportant</th>
<th>3 Neither important nor unimportant</th>
<th>4 Somewhat important</th>
<th>5 Very important</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>To remove impurity/chemicals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To improve the taste</td>
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<tr>
<td>To ensure safety</td>
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<tr>
<td>Drinking Water Advisories</td>
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</tbody>
</table>

17d. If you selected “BOTTLED” water, how important are the following factors when deciding to use BOTTLED water at home? Please rate each one on a scale of 1-5 (with 1 being very unimportant and 5 being very important)

<table>
<thead>
<tr>
<th>Factor</th>
<th>1 Very unimportant</th>
<th>2 Somewhat unimportant</th>
<th>3 Neither important nor unimportant</th>
<th>4 Somewhat important</th>
<th>5 Very important</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference of taste, smell and appearance</td>
<td></td>
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<td></td>
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<tr>
<td>Safer, no contaminants and chemicals</td>
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<td></td>
</tr>
<tr>
<td>Drinking Water Advisories</td>
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</tbody>
</table>

**Awareness of Public Service Announcement on Drinking Water Advisory**

18. Do you think information about Drinking or Boil Water Advisories is being disseminated effectively and broadly?
   - o Yes
   - o Somewhat
   - o No
   - o Don’t know
19. Thinking about the last time your area was under a Drinking or Boil Water Advisory, how did you hear about the public announcement?
   - On the radio
   - Newspaper
   - Through an email list
   - A friend or co-worker told me
   - Social media (example: Facebook or Twitter)
   - Never heard anything

20. Public announcement for both the Boil Water Advisory and lifting of the Boil Water Advisory should be done immediately using the following method… Please select all that apply
   - Local radio station
   - Notice placed in the sign board at the STOP sign areas in the town
   - Phone call or email sent to residents or hand deliver notices to affected areas
   - Fax, phone call or email sent to the Department of Government Services and businesses

21. Do you have any more comments you would like to make about the subject?
   Box (please provide comment here)
Appendix 4: Thank you note added to the gifts for survey prize drawn winners

January 28, 2015

Dear survey respondent,

We would like to thank you for your participation in our online survey about the quality of drinking water in Happy Valley-Goose Bay! We are processing the results and will publish the report as soon as possible.

Wishing you and your family all the best for 2015!

Sincerely,

Dr. Merline Fonkwe and Dr. Rebecca Schiff
Labrador Institute of Memorial University
219 Hamilton River Road, P.O. Box 490, Station B,
Happy Valley-Goose Bay, NL, A0P 1E0, Canada