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CEDAR LANE WATER SERVICE COMMISSION
SPECIAL MEETING

Notice of Special Meeting on Monday, January 10, 2022 at 10:00 AM
Salt Spring Island Library Meeting Room, 129 McPhillips Avenue, Salt Spring Island, BC

Gary Holman	Marianne Hobbs	Jason Griffin	Cathy Lenihan (r) regrets

Zoom Link: https://us06web.zoom.us/j/85855508617

AGENDA

1. Territorial Acknowledgement / Call Meeting to Order

2. Limited Space Meeting Resolution

That this resolution applies to the Cedar Lane Water Service Commission for the meeting being held on January 10, 2022, and that the attendance of the public at the place of the meeting will be limited in accordance with the applicable requirements or recommendations under the Public Health Act, despite the best efforts of the Commission because:

a. The available meeting facilities cannot accommodate more than (43) people in person, including members of the Commission and staff, and
b. There are no other facilities presently available that will allow physical attendance of the Commission and the public in sufficient numbers; and

That the Commission is ensuring openness, transparency, accessibility and accountability in respect of the open meeting by the following means:

a. By making the meeting agenda, as well as the other relevant documents, available on the CRD website, and directing interested persons to the website by means of the notices provided in respect of the meeting,
b. By making the minutes of the meeting available on the CRD website following the meeting.

3. Approval of Agenda 1-2

4. Adoption of Minutes - None

5. Chair's Report

6. New Business

6.1 Cedar Lane Manganese Treatment System and Engineering Designs 3-18

Manganese Treatment

That the Cedar Lane Water Service Commission receive this report and accept it as sufficient to satisfy the two motions from the Annual General Meeting on November 8th, 2021 and allow the project to proceed.

To ensure quorum, advise Shayla Burnham 250 537 4448 if you cannot attend.

Engineering Design Funding from Capital Reserve Fund

That the Cedar Lane Water Service Commission receive this report and approve the request for an additional $26,500 of funding for engineering design, Phase 1, from the Capital Reserve Fund.

7. Next Meeting - TBD

8. Adjournment

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REPORT TO CEDAR LANE WATER SERVICE COMMISSION
MEETING OF MONDAY, JANUARY 10th, 2022

SUBJECT **Cedar Lane Manganese Treatment System and Engineering Designs**

ISSUE SUMMARIES

Manganese Treatment

To provide information to the Cedar Lane Water Service Commission evidencing the necessity for the installation of a manganese treatment system incorporated in to the existing water treatment facility.

Additional Funding for Engineering Design from Capital Reserve Fund

To request additional money from the Capital Reserve Fund in order to award the contract for Phase 1 of the engineering design of the manganese treatment system for the Cedar Lane water system.

BACKGROUND

Manganese Treatment

On May 26th, 2021, Island Health issued a letter to the CRD advising that manganese levels in the drinking water for the Cedar Lane water system exceed the newly established maximum allowable concentration (MAC) for drinking water and the health concerns related to this. The letter (attached) outlines their requirements for the development of a plan to deal with these exceedances.

On July 12th, 2021 the CRD issued a letter in response to the Island Health letter outlining the action plan that the CRD would commit to. It involved both a short and long-term strategy and is also attached to this report. It is the long-term strategy that is the focus of this report as it involves the design, fabrication and installation of a suitable manganese treatment system which will be incorporated into the existing water treatment facility.

The Cedar Lane Water Service Commission, at the recent Annual General Meeting (AGM) on November 8th, 2021 asked for more data to justify the project as well as clarification around the recent monitoring results, the frequency of the exceedances and the number of exceedances that triggered the Island Health letter.

Attached to this report is a summary of all manganese test results from Cedar Lane between February 8th, 2018 and October 18th, 2021 (Appendix A). As is evident in the tables, the raw well water, from both wells, is consistently very high in manganese (Mn). The health limit (MAC) for manganese is 120 µg/L and the exceedances are highlighted in yellow. While the existing filter system is able to reduce the Mn concentrations to some degree, there are still frequent exceedances in the treated water samples (not designated as Raw Source in report attached). In addition to the number of exceedances, a concern is also that some concentrations have been found to be multiple times the health limit. This is clear evidence that the existing filtration system is incapable of reducing the Mn levels consistently and reliably below the regulated health limit. While the exceedances are not uniform across the entire distribution system, but rather more

concentrated closer to the treatment plant, it would be impracticable to divide the water system in zones of low and high health risk. The Island Health Authority, as the regulator of drinking water systems on Vancouver Island, has indicated that this health concern will have to be addressed with a properly designed treatment system for Mn removal. The CRD agrees with this assessment and will not accept that any of its drinking water systems consistently exceed health regulated standards without adequate mitigation.

The challenge in communicating this health issue to the community lies with the fact that until 2019, Health Canada had Mn only listed with an aesthetic objective. With similar Mn concentrations as today, the CRD had therefore always just mentioned the aesthetic risk in AGM/Annual Reports to the community. Based on that, there was no urgent need for a treatment upgrade. The introduction of a health limit based on new scientific evidence in 2019 suddenly changed the risk assessment of these consistently high Mn concentrations and led to the issuance of the Island Health requirements for manganese reduction in the drinking water to below the MAC.

Additional Funding for Engineering Design from Capital Reserve Fund

The first phase of the manganese treatment system design generally includes investigation and detailed design, further broken down in to several sub-tasks. Currently, there is a 2021 project established (CE.780.4501) funded to the level of $35,000 from the Capital Reserve Fund. Approximately $1,500 of this has already been spent to issue an RFP, evaluate the proposals and decide on the successful consultant. The successful bidder's proposal includes two phases as well as some optional services for a total of $78,407, the first phase of which is priced at $54,706. Adding on 10% for CRD project management, Phase 1 will cost approximately $60,000.

In order for the Phase 1 contract to be awarded and design work to begin, an additional $26,500 will be required from the Capital Reserve Fund. At the end of 2021 the CRF balance will be $41,837 so there is sufficient money available to fund this project. For 2022, there is a planned transfer of $15,000 and combining that with the additional draw of $26,500 would leave the balance at the end of 2022 at $2,507. This low balance will have to be addressed in the 2023 Capital Plan. It should be noted that there is $165,000 in the 2022 Capital Plan for the construction of the treatment system and it is presently scheduled to occur in 2023. The Capital Plan identifies $90,000 of this as debt and $75,000 as a grant. Staff expects that construction costs may well be lower than $165,000 which will offset the engineering design costing more than expected. More certainty around the construction costs will be available upon completion of Phase 1 of the engineering design as one of the deliverables of this phase is a Class A construction estimate.

IMPLICATIONS

Manganese Treatment

A manganese treatment system must be promptly designed and constructed in order to comply with Island Health's requirements and the CRD commitment. The need for this system is based on Mn monitoring results which regularly exceed the Health Canada MAC. The CRD has committed to complete construction of a manganese treatment system by the end of 2023. To meet this timeline, financial approval and design work must be completed in 2022.

Additional Funding for Engineering Design from Capital Reserve Fund

In order for this project to be completed by the deadline committed to with Island Health, engineering design needs to commence as early as possible in 2022 and sufficient funds need to

be in place to accomplish this. These additional funds will allow the award of Phase 1 of the engineering design to be awarded in their entirety without delay. Phase 2 and the Optional Services will then be funded by debt obtained in 2022. The process to borrow, as well as the grant application, will be initiated in early 2022.

CONCLUSION

Manganese Treatment

The manganese treatment system planned to be incorporated in to the water treatment facility for Cedar Lane is necessary based on frequent exceedances of the Health Canada MAC for manganese in drinking water, and to comply with a directive from the Island Health Authority.

Engineering Design Funding from Capital Reserve Fund

Additional funds to begin the engineering design are available from the Capital Reserve Fund and should be obtained as soon as possible in order not to delay the start of this project and to ensure that the commitment to Island Health will be met.

RECOMMENDATION

Manganese Treatment

That the Cedar Lane Water Service Commission receive this report and accept it as sufficient to satisfy the two motions from the Annual General Meeting on November 8th, 2021 and allow the project to proceed.

Engineering Design Funding from Capital Reserve Fund

That the Cedar Lane Water Service Commission receive this report and approve the request for an additional $26,500 of funding for engineering design, Phase 1, from the Capital Reserve Fund.

Submitted by:	Dean Olafson, P. Eng., MBA, Engineering Manager, Salt Spring Electoral Area
Submitted by:	Christoph Moch, Dipl.-Ing., P. Eng., Manager, Water Quality and Demand Management
Submitted by:	Lia Xu, Manager, Finance Services
Concurrence:	Karla Campbell, BPA, Senior Manager, Salt Spring Electoral Area

ATTACHMENT(S)

Appendix A: Cedar Lane Manganese Levels, February 8th, 2018 to October 18th, 2021
Appendix B: CRD Letter to VIHA, July 12th, 2021
Appendix C: VIHA Letter to CRD, May 26th, 2021

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WATER QUALITY REPORT FOR Cedar Lane Water System SSI

CRD Environmental Sustainability
Water Quality Information System
Inquiries at 250-474-9680

Reporting Period: January 01, 2018 to November 25, 2021

Printed: 2021-11-25

Appendix A

Station Description / Sampling Point / Location Code	Date	Time	Manganese (ug/L)
Well #1 Raw source / Well 1 Raw Source / CEDWS-01	08-Feb-2018	09:35	336
	18-May-2018	08:40	403
	14-Aug-2018	09:30	351
	19-Nov-2018	09:45	92
	19-Feb-2019	09:30	311
	06-May-2019	09:45	345
	12-Aug-2019	09:00	379
	05-Nov-2019	09:30	299
	10-Feb-2020	09:20	292
	11-May-2020	09:10	368
	10-Aug-2020	09:00	392
	16-Nov-2020	09:40	364
	08-Feb-2021	09:10	348
	10-May-2021	09:15	371
	21-Jul-2021	09:10	368
	09-Aug-2021	09:25	390
	11-Aug-2021	09:25	382
	13-Sep-2021	09:35	428
	18-Oct-2021	09:15	185
Well #5 Raw Source / Well 5 Raw Source / CEDWS-05	08-Feb-2018	09:50	306
	18-May-2018	09:05	412
	14-Aug-2018	09:55	485
	19-Nov-2018	09:15	407
	19-Feb-2019	10:10	456
	06-May-2019	10:10	463
	12-Aug-2019	09:50	410

Station Description Sampling Point Location Code	Date	Time	Manganese (ug/L)
	05-Nov-2019	09:50	465
	10-Feb-2020	09:35	491
	11-May-2020	09:55	479
	10-Aug-2020	09:25	393
	16-Nov-2020	10:00	438
	08-Feb-2021	09:25	454
	10-May-2021	09:25	441
	21-Jul-2021	09:20	447
	09-Aug-2021	09:55	431
	11-Aug-2021	09:55	419
	13-Sep-2021	09:50	447
	18-Oct-2021	09:35	425
Cedar Lane East end **Cedar Lane Water Main** **CEDWS-30**	08-Feb-2018	10:10	119
	18-May-2018	09:10	74.6
	14-Aug-2018	10:05	48
	19-Nov-2018	09:35	46.5
	19-Feb-2019	10:00	110
	06-May-2019	10:15	72.3
	12-Aug-2019	10:00	106
	05-Nov-2019	09:55	55.1
	10-Feb-2020	09:50	58.7
	11-May-2020	09:35	77.9
	10-Aug-2020	09:20	55.5
	16-Nov-2020	10:15	48.5
	08-Feb-2021	09:45	2.2
	10-May-2021	09:45	58.2
	21-Jul-2021	09:40	62.1
	09-Aug-2021	09:40	564
	11-Aug-2021	09:40	39.4
	13-Sep-2021	10:05	55.9
	18-Oct-2021	09:45	51.9

Station Description Sampling Point Location Code	Date	Time	Manganese (ug/L)
Kangro Road Cedar Lane CEDWS-40	10-Feb-2020	09:25	92
	11-May-2020	08:55	48.9
	10-Aug-2020	08:50	40.6
	16-Nov-2020	09:15	62.6
	08-Feb-2021	08:45	38.9
	10-May-2021	08:45	33.8
	21-Jul-2021	08:45	726
	09-Aug-2021	09:00	207
	11-Aug-2021	09:00	31.2
	13-Sep-2021	09:00	879
	18-Oct-2021	08:55	119
WTP Fully Treated Discharge side of pump CEDWS-70	08-Feb-2018	09:55	158
	18-May-2018	09:00	196
	14-Aug-2018	09:45	102
	19-Nov-2018	09:30	357
	19-Feb-2019	09:50	195
	06-May-2019	10:00	132
	12-Aug-2019	10:05	103
	05-Nov-2019	09:40	115
	10-Feb-2020	09:45	133
	11-May-2020	09:45	155
	10-Aug-2020	09:35	122
	16-Nov-2020	09:50	183
	08-Feb-2021	09:35	200
	10-May-2021	09:35	145
	21-Jul-2021	09:25	462
	09-Aug-2021	09:50	160
	11-Aug-2021	09:50	101
	13-Sep-2021	09:55	117
	18-Oct-2021	09:25	108

End of Mansell Rd Flushing station CEDWS-75	10-Feb-2020	09:40	23.6
	11-May-2020	09:02	6.4
	10-Aug-2020	09:05	54
	16-Nov-2020	09:30	61.6
	08-Feb-2021	09:00	33.9
	10-May-2021	09:00	<1
	21-Jul-2021	09:00	1,340
	09-Aug-2021	09:15	267
	11-Aug-2021	09:15	37.4
	13-Sep-2021	09:20	1,790
	18-Oct-2021	09:05	155

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Integrated Water Services
479 Island Highway
Victoria, BC, Canada V9B 1H7

T: 250.474.9600
F: 250.474.4012
www.crd.bc.ca

July 12, 2021

File: 5270-20
Cedar Lane Water System

Chris Laughlin, CPHI(C)
Environmental Health Officer
Island Health Authority
Via email: chris.laughlin@viha.ca, original in mail

Dear Mr. Laughlin:

RE: RESPONSE TO YOUR LETTER OF MAY 26, 2021 – DRINKING WATER IN EXCEEDANCE FOR MANGANESE

Thank you for your letter of May 26, 2021 "Drinking Water in Exceedance for Manganese" in reference to the Cedar Lane Water System (Appendix A). In response, this letter presents a proposed action plan that addresses the three requirements you outlined in your letter.

BACKGROUND

The Capital Regional District (CRD) owns and operates the Cedar Lane Water System on Salt Spring Island. This utility provides drinking water service to 37 residential connections. It uses groundwater sources (well #1 and well #5) for its raw water supply. The treatment system utilizes a set of cartridge filters before UV and chlorine disinfection to produce potable water. The CRD's Island Health Operating Permit for this water system has no additional conditions listed.

In 2019, Health Canada introduced a maximum acceptable concentration (MAC) in addition to a lowered aesthetic objective for manganese in the Health Canada *Guidelines for Canadian Drinking Water Quality* due to potential health issues associated with exposure of infants to high concentrations of manganese. The risk to other segments of the population is considered low.

The CRD water quality monitoring plan for this water system includes a quarterly metal scan at 5 locations including the two well sites. Manganese concentrations exceed the aesthetic objective in all sampling locations consistently, and exceed the MAC in the raw water and in parts of the distribution system regularly.

In your letter of May 26, 2021, you required three specific actions:

1. A public advisory to the customers.
2. Increased manganese monitoring, from quarterly to monthly for a minimum of 6 months.
3. If increased monitoring results confirm the regular exceedances of the MAC for manganese, submit a manganese management plan to Island Health.

ACTION PLAN

The CRD will address the three requirements identified in your May 26, 2021 letter as outlined below.

1. Short-Term Strategy

Public Communication: The CRD will distribute a public notice to the customers advising them of the current manganese exceedances and possible mitigation options within the households. The content of the notice was drafted in reference to the BC Ministry of Health guidance document on manganese in drinking water (issued by the Health Protection Branch, May 2019). This notice, as provided in Appendix B, will be issued via mail during the first week of July 2021, and will also be available on the water service's website at www.crd.bc.ca/cedarlane-ws.

The notice will remain in place until Island Health confirms, following review of analyses completed by CRD, that manganese concentrations no longer pose a public health risk.

Increased Manganese Monitoring: The CRD will increase the manganese sampling and testing in all five current sampling locations from quarterly to monthly for a minimum of six months. Increased monitoring will start in July 2021. The CRD will submit a summary after six months (January 2022) for Island Health's review and recommendations.

Reducing Manganese Accumulation in Storage Tank: In order to reduce manganese concentrations in the distribution system, the CRD will complete storage tank cleaning maintenance until the end of September 2021. This cleaning will serve to reduce manganese precipitates that move from the tank into the system.

2. Long-Term Strategy

Manganese Treatment: The high manganese concentrations in both Cedar Lane Water System source water wells are naturally occurring and have been fairly consistent over many years. CRD anticipates that only additional and specific treatment will be able to meet the new Health Canada water quality guideline limits on a consistent basis.

The timing of the implementation of upgraded treatment works is uncertain at this point, due to the challenges associated with the financing of upgrades. Depending on the cost estimates that are produced during the design phase, financing upgrades may require debt borrowing which is subject to obtaining electoral assent through a formal voting process in accordance with the Local Government Act and the Community Charter. Once the funding sources are secured, the upgrade project will be implemented.

The current estimate for a project schedule has the CRD beginning a design and option analysis in late 2021. The project financing approval is anticipated for 2022, and final design and construction completion by December 31, 2023.

We trust that Island Health finds the proposed action plan acceptable. For questions or comments, please contact me at 250.360.3061 or trobbins@crd.bc.ca.

Sincerely,

Ted Robbins
General Manager, Integrated Water Services

Attachments:

Appendix A: Letter from Island Health regarding drinking water in exceedance for Manganese (May 26, 2021)
Appendix B: Letter to Cedar Lane Water System residents

cc: Dr. Richard Stanwick, Chief Medical Health Officer, IHA
Dr. Murray Fyfe, Medical Health Officer, IHA
Craig Nowakowski, Supervisor, Environmental Health Officers, IHA

island health

May 26, 2021

Christoph Moch, Dipl.-Ing., P.Eng.
Manager
Water Quality and Demand Management
Capital Regional District
479 Island Highway
Victoria, BC V9B 1H7

Dear Christoph Moch:

Re: Drinking Water in Exceedance for Manganese

The recent drinking water results from the Cedar Lane Water System show that samples have tested above the newly established maximum acceptable concentration (MAC) for manganese. Health Canada has established a health-based guideline for manganese with a MAC of 0.12 mg/L (120 µg/L). This new MAC is to protect those most sensitive and at risk, which are infants and young children.

Samples from the Cedar Lane Water System show manganese concentration(s) at approximately three times the Health Canada MAC guideline in the raw water samples and a distribution sample slightly above. To mitigate this exceedance, a plan must be submitted outlining steps to reduce the manganese concentration, which meets or exceeds the MAC for manganese in drinking water.

In the interim, steps must be taken to protect the health of the Cedar Lane Water System users and those most sensitive to elevated manganese who are at risk to manganese concentration above the MAC health requirements.

The following items are requirements that must be undertaken to ensure the safety of the Cedar Lane Water System users until a plan is implemented to reduce the manganese concentration to an acceptable level:

- An advisory needs to be issued to the users of the water system informing them of the elevated manganese concentration in the drinking water, with information and actions required to protect the population at risk and actions planned to reduce the concentration to meet the current standard.

- Increase manganese sampling throughout the system to identify the areas that are exceeding the health standards. At this time, monthly representative manganese samples would be required

for the first six months, and then revert to the standard quarterly sample requirement if warranted.

- If samples continue to exceed the MAC, a method of treatment to control the elevated manganese levels would be required, and a plan outlining how this will be accomplished. If ANY treatment equipment is added, then a construction permit or waiver would be required prior to any work commencing.

Please provide an action plan by June 14, 2021, outlining methods to monitor manganese at the source and throughout the system, and a plan to mitigate manganese in the interim until the final treatment options have been completed and submitted to this office for review and input.

Sincerely,

Chris Laughlin, CPHI(C)
Environmental Health Officer

CL/rb

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Integrated Water Services
479 Island Highway
Victoria, BC, Canada V9B 1H7

T: 250.474.9600
F: 250.474.4012
www.crd.bc.ca

July XX, 2021

ADDRESS

RE: WATER QUALITY ADVISORY FOR CEDAR LANE WATER SYSTEM

Dear Resident:

You are receiving this notice because your property is served by the Cedar Lane drinking water service. The Cedar Lane drinking water service is experiencing elevated concentrations of manganese. Manganese is a naturally occurring element that is present throughout the environment and can normally be found in many water sources and in particular in groundwater from certain geological formations. Manganese is an essential nutrient and consuming a small of amount of manganese is necessary to maintain your overall health. Until recently, elevated levels of manganese in drinking water were not considered a health risk but rather only an aesthetic concern. The latest science now associates high manganese concentrations in drinking water with health issues in infants. High levels of manganese can make water appear brown, purple or black at concentrations less than what Health Canada considers the Maximum Acceptable Concentration (MAC) in drinking water.

Health Canada has set a MAC for manganese at 120 parts per billion (ppb) and an aesthetic objective of 20 ppb. The current levels in the Cedar Lane water distribution system range from 23.6 - 200 ppb. Therefore, infants should not consume the tap water and formula made with tap water. As a precaution, it is recommended that you avoid drinking discoloured water, or using it to prepare food or infant formula. Children and adults are less sensitive to manganese than infants, and Health Canada suggests that the health risk from manganese concentrations of less than 300 ppb is insignificant to these parts of the population. A list of Frequently Asked Questions regarding manganese is included with this letter.

Manganese can be reduced to acceptable levels through specific water treatment. The Capital Regional District (CRD) is working on strategies to reduce the concentration of manganese that enters the distribution system following treatment of the well water. A short-term strategy includes cleaning the storage tank to remove manganese accumulation. Monthly manganese sampling will be occurring for a minimum of six months. Longer term strategies are being developed in consultation with Island Health. The CRD anticipates that additional water treatment to address the manganese issue will be in place by the end of 2023. The CRD will continue to provide information directly to residents as the issue is addressed, and updated information will be available on the CRD website at www.crd.bc.ca/service/drinking-water/systems/cedar-lane-water-system.

If you have any immediate concerns or questions, please contact the CRD (Matt McCrank, 250.940.7402 or mmccrank@crd.bc.ca) or Island Health at gateway_office@viha.ca.

Sincerely,
Ted Robbins
General Manager, Integrated Water Services

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Frequently Asked Questions

How does Health Canada determine the Maximum Acceptable Concentration (MAC) for manganese?

The MAC is based on animal studies and includes safety factors to ensure even sensitive individuals are protected. Concentrations approaching, but remaining less than, the MAC are not associated with increased health risks in individuals. Health Canada calculated the MAC assuming that people would be constantly exposed to elevated levels of manganese for long periods of time. Occasionally consuming water with manganese concentrations slightly greater than the MAC is unlikely to cause any health issues. Health Canada has adopted a precautionary approach due to the limitations on the available information. Manganese concentrations greater than the guideline are only representative of a potential risk to health, but do not represent measureable health impacts.

What are the health effects of manganese?

People who are exposed to high levels of manganese can develop manganese toxicity. The primary target of manganese toxicity is the central nervous system, followed by the reproductive system. There is no evidence to conclude that detectable differences in health will be present at concentrations less than the MAC, the available evidence does suggest that measureable neurological impacts may be possible when infants and children are chronically exposed to manganese concentrations greater than the MAC. New evidence has shown that consuming drinking water with high levels of manganese may impact the memory, attention, motor function, and the overall intellectual development of infants and young children. The high degree of uncertainty and limitations of available information, the guideline of 120 ppb should be interpreted as being protective of ongoing exposure to all infants relying solely on formula made with tap water. Health impacts in other human groups with decreased exposure or sensitivity might not be significant until drinking water concentrations are much higher.

Can I be exposed to manganese through skin contact?

No. Exposure through skin contact is not harmful. Exposure through hand washing, showering, or bathing from water with manganese is unlikely to be significant. Inhalation of manganese aerosols during showering has not been directly evaluated but it is not expected to pose any risk to human health.

Can I boil the water to remove the manganese?

No. Boiling water is not an effective form of treatment of manganese reduction. Boiling water can increase the concentration of dissolved, and therefore absorbable, manganese in drinking water.

What can I do to reduce my exposure to manganese?

There are several ways you can lower the manganese in the drinking water at home:

- Infants need to be supplied an alternate drinking water source such as bottled water.
- Switching your drinking water to an alternate source such as bottled water.
- Tap filters suitable for manganese removal.
- Point of Entry treatment for the home.

For more information, visit the Health Canada website at www.canada.ca/en/health-canada.html

island health

May 26, 2021

Christoph Moch, Dipl.-Ing., P.Eng.
Manager
Water Quality and Demand Management
Capital Regional District
479 Island Highway
Victoria, BC V9B 1H7

Dear Christoph Moch:

Re: Drinking Water in Exceedance for Manganese

The recent drinking water results from the Cedar Lane Water System show that samples have tested above the newly established maximum acceptable concentration (MAC) for manganese. Health Canada has established a health-based guideline for manganese with a MAC of 0.12 mg/L (120 µg/L). This new MAC is to protect those most sensitive and at risk, which are infants and young children.

Samples from the Cedar Lane Water System show manganese concentration(s) at approximately three times the Health Canada MAC guideline in the raw water samples and a distribution sample slightly above. To mitigate this exceedance, a plan must be submitted outlining steps to reduce the manganese concentration, which meets or exceeds the MAC for manganese in drinking water.

In the interim, steps must be taken to protect the health of the Cedar Lane Water System users and those most sensitive to elevated manganese who are at risk to manganese concentration above the MAC health requirements.

The following items are requirements that must be undertaken to ensure the safety of the Cedar Lane Water System users until a plan is implemented to reduce the manganese concentration to an acceptable level:

- An advisory needs to be issued to the users of the water system informing them of the elevated manganese concentration in the drinking water, with information and actions required to protect the population at risk and actions planned to reduce the concentration to meet the current standard.

- Increase manganese sampling throughout the system to identify the areas that are exceeding the health standards. At this time, monthly representative manganese samples would be required

Gateway Village Health Unit
201 - 771 Vernon Avenue | Victoria, BC V8X 5A7 Tel: 250.519.3401 | Fax: 250.519.3402
Email: **Gateway_office@viha.ca** ***www.islandhealth.ca***

for the first six months, and then revert to the standard quarterly sample requirement if warranted.

- If samples continue to exceed the MAC, a method of treatment to control the elevated manganese levels would be required, and a plan outlining how this will be accomplished. If ANY treatment equipment is added, then a construction permit or waiver would be required prior to any work commencing.

Please provide an action plan by June 14, 2021, outlining methods to monitor manganese at the source and throughout the system, and a plan to mitigate manganese in the interim until the final treatment options have been completed and submitted to this office for review and input.

Sincerely,

Chris Laughlin, CPHI(C)
Environmental Health Officer

CL/rb