

Appendix C-3

Survey Responses – Emailed or Mailed Surveys

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Otter Lake Waste Processing & Disposal Facility Survey

As part of the NS Environment and Climate Change application process to deactivate the Front End Processor and Waste Stabilization Facility (FEP/WSF), Halifax Regional Municipality (HRM) and MIRROR Nova Scotia are providing the public with the opportunity to comment on the potential impacts of the project to the environment and the proposed mitigation measures.

More information on this application process, HRM staff recommendations and supporting documents are provided at the following link:

Halifax.ca/OtterLake

In accordance with Section 485 of the Municipal Government Act (MGA), the personal information collected through the completion of this form will only be used by municipal staff and, if necessary, individuals and/or organizations under service contract with the Halifax Regional Municipality, for purposes relating to processing activities at the Otter Lake Waste Processing facility; the information will not be presented or compiled in a manner that could potentially identify any respondent. If you have any questions about the collection and use of this personal information, please contact the Access and Privacy Office at 902.476.3294 or privacy@halifax.ca.

Otter Lake FEP/WSF



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Otter Lake Waste Processing & Disposal Facility Survey

General Questions

1. Do you live within 5 km of the FEP/WSF?

☐ Yes

☒ No

2. Please provide your postal code (optional). E.g., A1A2B2

We live near the mouth of Nine Mile River
B3T 2C1

Areas of Concern

In the next few questions, an overview of potential area of concern and proposed mitigation measures have been provided along with the opportunity for you to provide additional comments regarding each of the potential concerns.

Safety of workers/increased traffic at landfill disposal area

Currently, all waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the FEP tipping floor (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles, i.e., waste from businesses, industries and institutions). It is reiterated that waste from businesses, industries and institutions arriving at Otter Lake will continue to be managed as it is today and will be directed to the Transfer Station tipping floor to be transferred off-site. The approach with respect to the proposed deactivation of the Otter Lake FEP/WSF is consistent with the current approach, but with the following changes:

- All waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the landfill disposal area (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles). Based on recent records for residential collection vehicle arrivals at Otter Lake, this will equate to approximately 25 to 30 vehicle trips to the landfill disposal area per day. This represents an

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increase of approximately eight to 10 vehicle trips per day to the landfill disposal area as compared to current conditions.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an increase in landfill disposal area traffic or worker safety have been identified. Some on-site impacts have been identified as representing a medium risk which includes increased disposal area traffic and worker safety. Mitigation measures include the following:

- Provision of instructions to residential collection contractors regarding site traffic rules and restrictions, including the definition of protocols (e.g., warnings, banning from site) for non-compliance.
- Establish directional signage from the Scale House to the landfill disposal area.
- Provision of traffic spotters at the landfill disposal area, acknowledging peak traffic periods.

Collection Vehicle at the Scale House



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3. Do these mitigation measures address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

4. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Additional Blowing Litter

In addition to regular inspections and clean ups conducted along Highway 103 and the site access road, litter is currently collected on a daily basis from the Otter Lake site, particularly from fences, on-site roads, and entrance area. Fixed fences are installed as needed on exterior berms. Portable fences are installed at or near the landfill disposal area to catch windblown materials and are cleaned as necessary. Additionally, higher fencing is installed beyond the portable fencing as necessary to catch further wind-blown material.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to blowing litter have been identified. Some on-site impacts have been identified as medium risk which includes the increased potential for blowing litter at the landfill disposal area. Mitigation measures include the following:

- Use of additional portable fencing.
- Additional litter collection and removal efforts by site personnel.

Landfill Litter Fencing



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5. Do these mitigation measures address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

6. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

With climate change and more
severe windstorms, I do not believe
all litter can be collected.

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Enhanced attraction of birds

Currently, several bird management measures are regularly conducted in proximity to the landfill disposal area, including noise makers (whistler flares), use of a falcon and handler and limited culling (consistent with Federal regulations).

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an enhanced attraction of birds have been identified. Some on-site impacts have been identified as representing a medium risk which includes an enhanced attraction of birds. Mitigation measures include the following:

- Increased frequency of bird and vector control efforts at the landfill disposal area and around the landfill in general.
- Emphasis on minimizing the size (and thus the attractiveness to birds) of the landfill disposal area, as well as applying daily cover on freshly placed waste.

Birds on the Landfill Cap



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7. Do these mitigation measures address your concerns?

- ☐ Yes
☐ No
☒ I do not have any concerns

8. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Delivery of rodents to the disposal area

Currently, regular baiting programs for rodent control are conducted in proximity to the FEP/WSF. With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to the delivery of rodents to the landfill disposal area have been identified. Some on-site impacts have been identified as medium risk which includes the delivery of rodents to the landfill disposal area. Mitigation measures include the following:

- Implementation of a baiting program for rodents in proximity to the landfill disposal area.

Vehicle discharging waste at the Landfill Disposal Area



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9. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

10. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

I do not believe all rodents
will be controlled, especially
after the F.E.P. is closed.

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Dust generation from additional disposal site traffic

Currently, all vehicles delivering waste to the Front End Processor and Transfer Station travel on paved roads. The perimeter access road around the landfill and leading to the disposal area is granular. A naturally-sourced dust suppressant (Tembec) is used as necessary to reduce the generation of dust. Landfill road construction and maintenance practices will be completed in a manner that will minimize creation of mud. Granular material and positive drainage will work to keep landfill roads dry and reduce the possibility of mud accumulation on haul trucks. With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach. No on or off-site impacts have been identified due to dust generation from additional disposal site traffic.

Vehicle on the Perimeter Access Road



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11. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

12. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

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Additional generation of greenhouse gases

Landfills are a significant source of greenhouse gas emissions and produce methane gas, which is approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere. Diverting material (e.g., green cart program) from landfill disposal is the best way to reduce greenhouse gas emissions from Halifax's solid waste system.

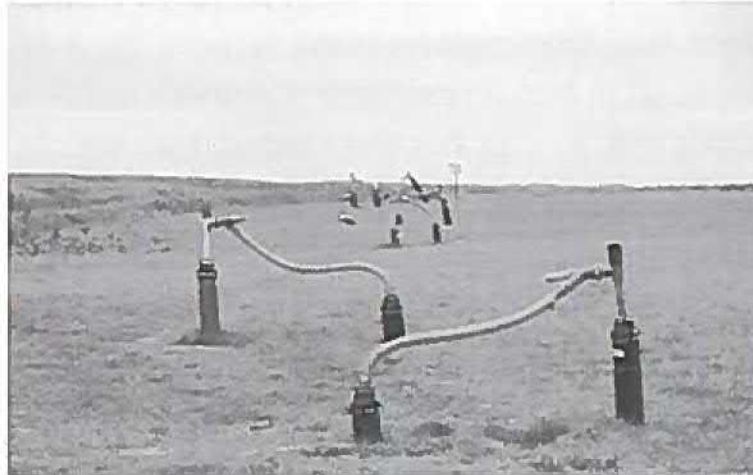
As organic materials decompose in a landfill, they generate greenhouse gases; namely, methane and carbon dioxide. Based on previously completed evaluations, the FEP/WSF does not have a significant effect on the decomposition potential of waste delivered to the landfill. This has been illustrated by the ongoing requirement for landfill gas and leachate management systems at the landfill. The WSF does partially treat (decompose/stabilize) materials and therefore can reduce the amount of greenhouse gases generated in the landfill. The FEP separates materials that are smaller than 150 mm in size and conveys them to the WSF for treatment. However, other methane-generating materials greater than 150 mm in size and are not treated in the WSF. As such, greenhouse gases are not anticipated to greatly increase by deactivating the FEP/WSF as food waste only makes up a portion of the methane- generating waste deposited in the landfill.

The operation of the FEP/WSF consumes significant electricity. As a result of deactivating the FEP/WSF, there will be a significant reduction in electricity use on site and a corresponding reduction of greenhouse gas emissions in the order of 1240 tonnes of CO₂ (equivalent) per year. This offset will mitigate potential increases as result of not stabilizing materials in the WSF (as noted above).

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Landfill Gas Collection Wells



13. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

14. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

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Additional generation of odours

Dillon's FEP/WSF Closure Review noted that the potential for odour issues at the landfill may be increased by operating the FEP/WSF. The reason is that the WSF stabilization process 'kick starts' the microbiological treatment process that continues once the material is landfilled. Once the 'stabilized' material is landfilled (i.e., output from WSF), the production of landfill gas (including odorous hydrogen sulfide gas) is quicker at Otter Lake than at a traditional municipal solid waste landfill.

Odour mitigation measures will continue regardless of whether the FEP/WSF is operated, these include:

- Maintaining the landfill disposal area as small as possible.
- Applying daily landfill cover to freshly placed waste.
- Maintaining a landfill gas collection and treatment system.
- Proactive monitoring for site odours.

With respect to the proposed deactivation of the Otter Lake FEP/WSF the proposed approach is consistent with the current approach for the management of odours. No on or off-site impacts due to odours have been identified with the proposed deactivation.

Landfill Gas Flares



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15. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

16. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item (400 character limit):

Once the F.E.P is closed no one
knows what is in the waste, i.e.
Hazardous materials

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Impact to groundwater quality

Nova Scotia has stringent landfill requirements with respect to groundwater quality protection. Otter Lake was developed as what is known in Nova Scotia as a 'second generation landfill'. This means that the landfill at Otter Lake is equipped with a double composite liner system and leachate collection system, which prevents leachate from entering the underlying soils and groundwater. Deactivating the FEP/WSF will have no impact on protecting groundwater.

Precipitation that comes in contact with waste in the landfill and percolates to the bottom of the landfill is called leachate. As such the landfill disposal area is kept as small as possible (e.g., less than 30 m in width) to limit the amount of exposed waste (water that runs off the landfill cap is managed as surface water). Leachate which percolates through waste is collected within the leachate collection system at the bottom of the landfill (and located above the double composite liner system). Leachate is conveyed via pipes to collection sumps where it is subsequently pumped to a leachate storage tank. Leachate from the storage tank is transferred to a tanker truck as required for transport to an approved treatment facility (currently Halifax Water's Mill Cove Wastewater Treatment Facility). In cases of high flows, a temporary holding pond, located near Cell 4, can accept leachate. Regular monitoring of site groundwater, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of leachate management infrastructure and operations at the site.

With respect to the deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of groundwater quality. No on or off-site impacts due to groundwater quality have been identified with the proposed deactivation.

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Sampling of a Groundwater Monitoring Well



17. Does the existing approach address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

18. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

Ground water has already been affected by the pumping of water from the site directly into Nine Mile River.

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Impact to surface water quality

Surface water is generated at landfills predominantly related to runoff from the landfill cap — i.e., this is precipitation/rainfall that runs down the capped landfill side slopes and has not come into contact with waste materials.

At Otter Lake, the surface water management system includes ditches, pipes, culverts etc. to convey surface water to stormwater management ponds. The stormwater management ponds are used to remove sedimentation in the surface water. The surface water in the stormwater management ponds is tested prior to discharging to the Nine Mile River.

Erosion control measures are key to preventing erosion and sedimentation in surface water. Examples of erosion control measures include temporary measures such as the use of erosion protection blankets, and permanent measures such as seeding and establishing a grass/vegetative cover on the landfill cap.

Monthly erosion inspections are completed to ensure that adequate measures have been put in place. Additionally after each storm event, all erosion control measures are inspected, and, if found to be damaged, are repaired or replaced as soon as possible.

Regular monitoring of site surface water, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of stormwater management infrastructure and operations at the site.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of surface water quality. No on or off-site impacts due to surface water quality have been identified with the proposed deactivation.

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Surface Water Sampling



19. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

20. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

Definitely does not address our concerns. I became physically ill after being told that this has been happening since day one. The environmental damage this has done to nine mile river and Shad Bay is visible to the naked eye. Very large balls of green foam can be seen whenever pumping takes place and the rocks and boulders in river and are covered in green slime. Especially when water levels are low in the river as they are in summer.

What about the mollusks (mussels) in Shad Bay we haven't been allowed to eat



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Honouring the original Community Agreement

The 1999 agreement between HRM and the Halifax Waste Resource Society (Society) titled: "Agreement for Community Monitoring of Solid Waste Facilities" (HRWS Agreement) lays out the framework for community monitoring of landfill operations by the Community Monitoring Committee (CMC). The agreement can be accessed at Halifax.ca/OtterLake

The Society was established in 1999 to represent the interests of the local community with respect to Otter Lake. As part of developing Otter Lake, HRM entered into an agreement with the Society to establish roles and responsibilities, including the establishment of the CMC. The CMC consists of 15 members, 9 of which are appointed by the Society, and 6 of which are appointed by HRM. HRM's representatives on the CMC include the Mayor and the Councillors from Districts 11, 12, and 13.

The agreement does not specifically mandate that the FEP/WSF be operated at Otter Lake. The agreement stipulates that only 'Acceptable Waste' shall be landfilled. Acceptable Waste is defined as "Inert Materials"; "Stable Materials" (i.e., biostabilized through the FEP/WSF); and "Residual Materials" (i.e., minor quantities of putrescible and other banned materials).

While the FEP/WSF was designed as a mechanism to biostabilize putrescible waste (e.g., food waste), it provides little if any benefit to the environment today as the composition of waste and quantity has changed significantly since the development of Otter Lake in the late 1990s. This is in part due to the success of HRM's solid waste program, including the success of the green cart program at diverting food waste from landfill disposal. Most of the waste currently delivered to and disposed of at Otter Lake is considered Inert Materials or Residual Materials, such that it does not need to be biostabilized prior to landfilling. Based on current tonnages HRM can therefore remain compliant with its commitments under agreement if the FEP/WSF is deactivated.

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21. Does this information address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

22. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Pumping so called clean water
from the storm water management ponds
has been a well kept secret.
This is a disgrace. The entire CMC
should be turfed on their ears.

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Inability to reactivate the FEP/WSF if necessary

As part of the proposed deactivation plan, the FEP/WSF will be maintained such that the facilities could be put back into operation if needed. Activities have been defined to appropriately monitor and maintain the FEP/WSF following deactivation and include:

General:

- Removal of waste materials.
- Areas free of debris or stored materials.
- Cleaning floors.
- Regular walkthroughs are conducted and documented including the inspection of structural members and equipment support members.
- Access Control - doors and access points locked and/or regularly checked.
- Security of site maintained.
- Structures are maintained wind and water tight.
- Ventilation minimized but maintained.
- Pest control program maintained.

Mechanical Equipment:

- Removing/flushing/draining/purging of tanks/piping and winterizing.
- Cleaning equipment/supports.
- Filling all lubricants/seal systems.
- Removing/replacement of existing fluids.
- Applying external vapour corrosion inhibitors to equipment and supports.
- Machinery shutdown (locked and tagged out) — ongoing inspections — may include additional lubricants, dust coverings, regular energizing/rotation schedule, etc.

Electrical Equipment:

- Application of desiccants and vapour phase inhibitors in panels/cabinets.
- Motor heaters' activation.
- Provide heaters inside panels where condensation might be an issue.
- Thermal imagery of electrical circuits to remain energized.

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Biofilter:

- Removal and landfilling of media.
- Transfer of leachate to leachate storage tank.
- Flushing clear stone and transfer to leachate storage tank.
- Placing geomembrane lined notch in berm to limit depth of stored precipitation.
- Connection of biofilter to Stormwater ditching system.
- Installing perimeter fencing.

Fire Safety:

- Fire doors and Exit lighting are maintained.
- Dry Sprinkler System is maintained and air pressure monitored as required.
- Annual inspections of fire suppression equipment and systems, alarm systems and hydrants maintained.
- Propane system disconnected.

FEP Equipment



23. Does this information address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

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24. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Other items of concern related to the deactivation of the FEP/WSF

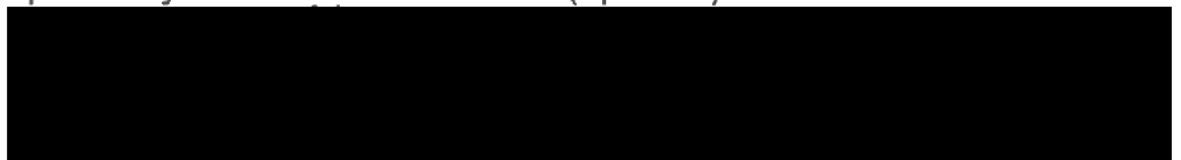
25. Please indicate any additional specific items of concern with respect to the proposed deactivation of the Otter Lake FEP/WSF:

The entire operation should be shut down and relocated elsewhere. Area residents were promised from day one that the site would be closed in 25yrs. Times up. Start looking for a new site Now

26. Please provide your contact information (optional):

Name:

Email:



Thank you for providing your input on the proposed deactivation of the FEP/WSF. For additional information including links to staff reports and the Closure Review report please visit here: Halifax.ca/OtterLake

This survey can be sent via email to otterlake@halifax.ca or by mail to Solid Waste Resources, PO Box 1749, Halifax, NS, B3J 3A5. Mailed surveys should be returned by **December 3, 2021**.

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Please do not alter the current processing of waste at Otter Lake FEP/WSF. We are opposed to the present down-grading facility.



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Otter Lake Waste Processing & Disposal Facility Survey

General Questions

1. Do you live within 5 km of the FEP/WSF?

- ☐ Yes
☒ No

2. Please provide your postal code (optional). E.g., A1A2B2

B3T2J8

Areas of Concern

In the next few questions, an overview of potential area of concern and proposed mitigation measures have been provided along with the opportunity for you to provide additional comments regarding each of the potential concerns.

Safety of workers/increased traffic at landfill disposal area

Currently, all waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the FEP tipping floor (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles, i.e., waste from businesses, industries and institutions). It is reiterated that waste from businesses, industries and institutions arriving at Otter Lake will continue to be managed as it is today and will be directed to the Transfer Station tipping floor to be transferred off-site. The approach with respect to the proposed deactivation of the Otter Lake FEP/WSF is consistent with the current approach, but with the following changes:

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increase of approximately eight to 10 vehicle trips per day to the landfill disposal area as compared to current conditions.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an increase in landfill disposal area traffic or worker safety have been identified. Some on-site impacts have been identified as representing a medium risk which includes increased disposal area traffic and worker safety. Mitigation measures include the following:

- Provision of instructions to residential collection contractors regarding site traffic rules and restrictions, including the definition of protocols (e.g., warnings, banning from site) for non-compliance.
- Establish directional signage from the Scale House to the landfill disposal area.
- Provision of traffic spotters at the landfill disposal area, acknowledging peak traffic periods.

Collection Vehicle at the Scale House



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3. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

4. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

LOWERING WASTE DISPOSAL STANDARDS
FROM CURRENT PRACTICE IS
TOTALLY UNACCEPTABLE!

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Additional Blowing Litter

In addition to regular inspections and clean ups conducted along Highway 103 and the site access road, litter is currently collected on a daily basis from the Otter Lake site, particularly from fences, on-site roads, and entrance area. Fixed fences are installed as needed on exterior berms. Portable fences are installed at or near the landfill disposal area to catch windblown materials and are cleaned as necessary. Additionally, higher fencing is installed beyond the portable fencing as necessary to catch further wind-blown material.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to blowing litter have been identified. Some on-site impacts have been identified as medium risk which includes the increased potential for blowing litter at the landfill disposal area. Mitigation measures include the following:

- Use of additional portable fencing.
- Additional litter collection and removal efforts by site personnel.

Landfill Litter Fencing



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5. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

6. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

CURRENTLY THERE IS MUCH LITTER
ALONG HIGHWAY 333 THAT IS NOT BEING
COLLECTED. MUCH OF THIS COMES FROM
TRUCKS CARRYING LITTER. ADDITIONAL
FENCING WILL NOT ALLEVIATE THIS PROBLEM
THE CHANGE PROPOSED WILL LEAD TO
MORE LITTER.

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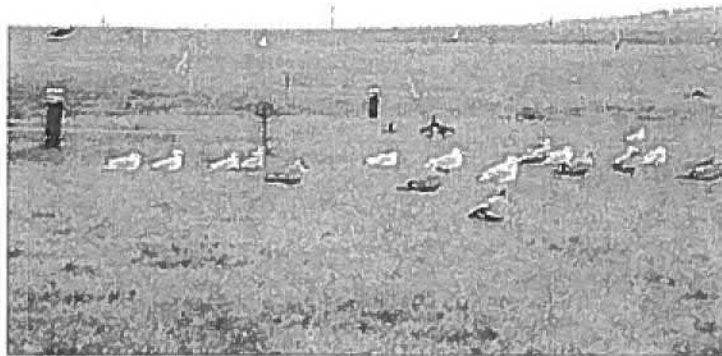
Enhanced attraction of birds

Currently, several bird management measures are regularly conducted in proximity to the landfill disposal area, including noise makers (whistler flares), use of a falcon and handler and limited culling (consistent with Federal regulations).

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- Increased frequency of bird and vector control efforts at the landfill disposal area and around the landfill in general.
- Emphasis on minimizing the size (and thus the attractiveness to birds) of the landfill disposal area, as well as applying daily cover on freshly placed waste.

Birds on the Landfill Cap



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7. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

8. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

WHEREVER THERE IS UNSORTED ORGANIC MATERIALS THERE WILL BE BIRDS, RATS AND OTHER VERMIN.
THE DEGRADATION OF WASTE DISPOSAL STANDARDS WILL LEAD TO MORE PROBLEMS.

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Delivery of rodents to the disposal area

Currently, regular baiting programs for rodent control are conducted in proximity to the FEP/WSF. With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to the delivery of rodents to the landfill disposal area have been identified. Some on-site impacts have been identified as medium risk which includes the delivery of rodents to the landfill disposal area. Mitigation measures include the following:

- Implementation of a baiting program for rodents in proximity to the landfill disposal area.

Vehicle discharging waste at the Landfill Disposal Area



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9. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

10. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

RISK OF RODENTS WILL BE
INCREASED WITH ELIMINATION OF
CURRENT PROCEDURES.

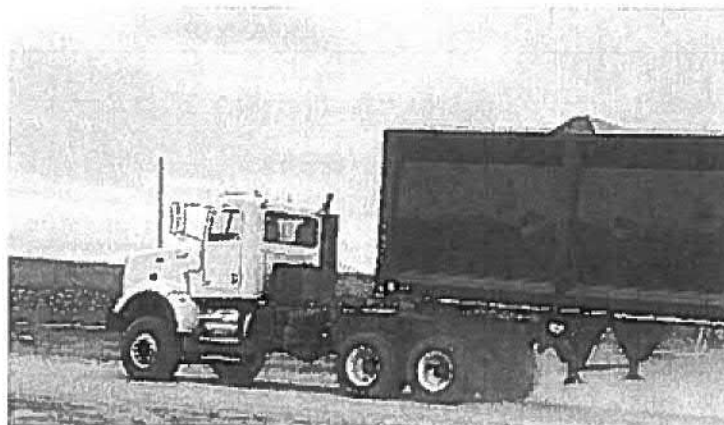
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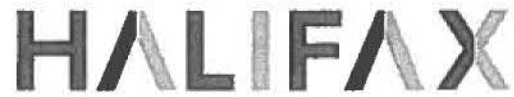
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Dust generation from additional disposal site traffic

Currently, all vehicles delivering waste to the Front End Processor and Transfer Station travel on paved roads. The perimeter access road around the landfill and leading to the disposal area is granular. A naturally-sourced dust suppressant (Tembec) is used as necessary to reduce the generation of dust. Landfill road construction and maintenance practices will be completed in a manner that will minimize creation of mud. Granular material and positive drainage will work to keep landfill roads dry and reduce the possibility of mud accumulation on haul trucks. With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach. No on or off-site impacts have been identified due to dust generation from additional disposal site traffic.

Vehicle on the Perimeter Access Road





Otter Lake Waste Processing & Disposal Facility Survey

11. Does the existing approach address your concerns?

- ☐ Yes
☐ No
☒ I do not have any concerns

12. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:



Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of greenhouse gases

Landfills are a significant source of greenhouse gas emissions and produce methane gas, which is approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere. Diverting material (e.g., green cart program) from landfill disposal is the best way to reduce greenhouse gas emissions from Halifax's solid waste system.

As organic materials decompose in a landfill, they generate greenhouse gases; namely, methane and carbon dioxide. Based on previously completed evaluations, the FEP/WSF does not have a significant effect on the decomposition potential of waste delivered to the landfill. This has been illustrated by the ongoing requirement for landfill gas and leachate management systems at the landfill. The WSF does partially treat (decompose/stabilize) materials and therefore can reduce the amount of greenhouse gases generated in the landfill. The FEP separates materials that are smaller than 150 mm in size and conveys them to the WSF for treatment. However, other methane-generating materials greater than 150 mm in size and are not treated in the WSF. As such, greenhouse gases are not anticipated to greatly increase by deactivating the FEP/WSF as food waste only makes up a portion of the methane- generating waste deposited in the landfill.

The operation of the FEP/WSF consumes significant electricity. As a result of deactivating the FEP/WSF, there will be a significant reduction in electricity use on site and a corresponding reduction of greenhouse gas emissions in the order of 1240 tonnes of CO₂ (equivalent) per year. This offset will mitigate potential increases as result of not stabilizing materials in the WSF (as noted above).

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Otter Lake Waste Processing & Disposal Facility Survey

Landfill Gas Collection Wells



13. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

14. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

THE MUNICIPALITY SHOULD SWITCH
 TO ENVIRONMENTALLY SUSTAINABLE
 SOURCES OF ELECTRICAL POWER
 GENERATION, E.G. HYDRO, SOLAR,
 WIND, GEOTHERMAL

HALIFAX

Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of odours

Dillon's FEP/WSF Closure Review noted that the potential for odour issues at the landfill may be increased by operating the FEP/WSF. The reason is that the WSF stabilization process 'kick starts' the microbiological treatment process that continues once the material is landfilled. Once the 'stabilized' material is landfilled (i.e., output from WSF), the production of landfill gas (including odorous hydrogen sulfide gas) is quicker at Otter Lake than at a traditional municipal solid waste landfill.

Odour mitigation measures will continue regardless of whether the FEP/WSF is operated, these include:

- Maintaining the landfill disposal area as small as possible.
- Applying daily landfill cover to freshly placed waste.
- Maintaining a landfill gas collection and treatment system.
- Proactive monitoring for site odours.

With respect to the proposed deactivation of the Otter Lake FEP/WSF the proposed approach is consistent with the current approach for the management of odours. No on or off-site impacts due to odours have been identified with the proposed deactivation.

Landfill Gas Flares



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Otter Lake Waste Processing & Disposal Facility Survey

15. Does the existing approach address your concerns?

- ☐ Yes
☐ No
☐ I do not have any concerns

16. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item (400 character limit):

THIS QUESTION IS DESIGNED TO BE
UNDERSTANDABLE TO THE AVERAGE
PERSON
WE FERVENTLY OPPOSE ANY CHANGES
TO OTTER LAKE



Otter Lake Waste Processing & Disposal Facility Survey

Impact to groundwater quality

Nova Scotia has stringent landfill requirements with respect to groundwater quality protection. Otter Lake was developed as what is known in Nova Scotia as a 'second generation landfill'. This means that the landfill at Otter Lake is equipped with a double composite liner system and leachate collection system, which prevents leachate from entering the underlying soils and groundwater. Deactivating the FEP/WSF will have no impact on protecting groundwater.

Precipitation that comes in contact with waste in the landfill and percolates to the bottom of the landfill is called leachate. As such the landfill disposal area is kept as small as possible (e.g., less than 30 m in width) to limit the amount of exposed waste (water that runs off the landfill cap is managed as surface water). Leachate which percolates through waste is collected within the leachate collection system at the bottom of the landfill (and located above the double composite liner system). Leachate is conveyed via pipes to collection sumps where it is subsequently pumped to a leachate storage tank. Leachate from the storage tank is transferred to a tanker truck as required for transport to an approved treatment facility (currently Halifax Water's Mill Cove Wastewater Treatment Facility). In cases of high flows, a temporary holding pond, located near Cell 4, can accept leachate. Regular monitoring of site groundwater, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of leachate management infrastructure and operations at the site.

With respect to the deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of groundwater quality. No on or off-site impacts due to groundwater quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

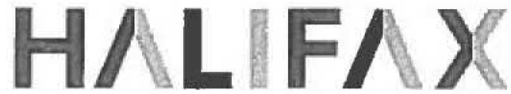
Sampling of a Groundwater Monitoring Well



17. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

18. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:



Otter Lake Waste Processing & Disposal Facility Survey

Impact to surface water quality

Surface water is generated at landfills predominantly related to runoff from the landfill cap — i.e., this is precipitation/rainfall that runs down the capped landfill side slopes and has not come into contact with waste materials.

At Otter Lake, the surface water management system includes ditches, pipes, culverts etc. to convey surface water to stormwater management ponds. The stormwater management ponds are used to remove sedimentation in the surface water. The surface water in the stormwater management ponds is tested prior to discharging to the Nine Mile River.

Erosion control measures are key to preventing erosion and sedimentation in surface water. Examples of erosion control measures include temporary measures such as the use of erosion protection blankets, and permanent measures such as seeding and establishing a grass/vegetative cover on the landfill cap.

Monthly erosion inspections are completed to ensure that adequate measures have been put in place. Additionally after each storm event, all erosion control measures are inspected, and, if found to be damaged, are repaired or replaced as soon as possible.

Regular monitoring of site surface water, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of stormwater management infrastructure and operations at the site.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of surface water quality. No on or off-site impacts due to surface water quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Surface Water Sampling



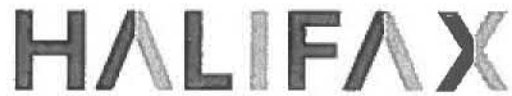
19. Does the existing approach address your concerns?

☐ Yes

☐ No

☒ I do not have any concerns

20. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:



Otter Lake Waste Processing & Disposal Facility Survey

Honouring the original Community Agreement

The 1999 agreement between HRM and the Halifax Waste Resource Society (Society) titled: "Agreement for Community Monitoring of Solid Waste Facilities" (HRWS Agreement) lays out the framework for community monitoring of landfill operations by the Community Monitoring Committee (CMC). The agreement can be accessed at Halifax.ca/OtterLake

The Society was established in 1999 to represent the interests of the local community with respect to Otter Lake. As part of developing Otter Lake, HRM entered into an agreement with the Society to establish roles and responsibilities, including the establishment of the CMC. The CMC consists of 15 members, 9 of which are appointed by the Society, and 6 of which are appointed by HRM. HRM's representatives on the CMC include the Mayor and the Councillors from Districts 11, 12, and 13.

The agreement does not specifically mandate that the FEP/WSF be operated at Otter Lake. The agreement stipulates that only 'Acceptable Waste' shall be landfilled. Acceptable Waste is defined as "Inert Materials"; "Stable Materials" (i.e., biostabilized through the FEP/WSF); and "Residual Materials" (i.e., minor quantities of putrescible and other banned materials).

While the FEP/WSF was designed as a mechanism to biostabilize putrescible waste (e.g., food waste), it provides little if any benefit to the environment today as the composition of waste and quantity has changed significantly since the development of Otter Lake in the late 1995. This is in part due to the success of HRM's solid waste program, including the success of the green cart program at diverting food waste from landfill disposal. Most of the waste currently delivered to and disposed of at Otter Lake is considered Inert Materials or Residual Materials, such that it does not need to be biostabilized prior to landfilling. Based on current tonnages HRM can therefore remain compliant with its commitments under agreement if the FEP/WSF is deactivated.

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Otter Lake Waste Processing & Disposal Facility Survey

Otter Lake Waste Processing & Disposal Facility



21. Does this information address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

22. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

ORGANIC BIOACTIVE MATERIAL IN
THE LANDFILL IS A REGRESSIVE
PRIMITIVE AND UNACCEPTABLE
METHOD OF WASTE PROCESSING.

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Otter Lake Waste Processing & Disposal Facility Survey

Inability to reactivate the FEP/WSF if necessary

As part of the proposed deactivation plan, the FEP/WSF will be maintained such that the facilities could be put back into operation if needed. Activities have been defined to appropriately monitor and maintain the FEP/WSF following deactivation and include:

General:

- Removal of waste materials.
- Areas free of debris or stored materials.
- Cleaning floors.
- Regular walkthroughs are conducted and documented including the inspection of structural members and equipment support members.
- Access Control - doors and access points locked and/or regularly checked.
- Security of site maintained.
- Structures are maintained wind and water tight.
- Ventilation minimized but maintained.
- Pest control program maintained.

Mechanical Equipment:

- Removing/flushing/draining/purging of tanks/piping and winterizing.
- Cleaning equipment/supports.
- Filling all lubricants/seal systems.
- Removing/replacement of existing fluids.
- Applying external vapour corrosion inhibitors to equipment and supports.
- Machinery shutdown (locked and tagged out) — ongoing inspections — may include additional lubricants, dust coverings, regular energizing/rotation schedule, etc.

Electrical Equipment:

- Application of desiccants and vapour phase inhibitors in panels/cabinets.
- Motor heaters' activation.
- Provide heaters inside panels where condensation might be an issue.
- Thermal imagery of electrical circuits to remain energized.

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Otter Lake Waste Processing & Disposal Facility Survey

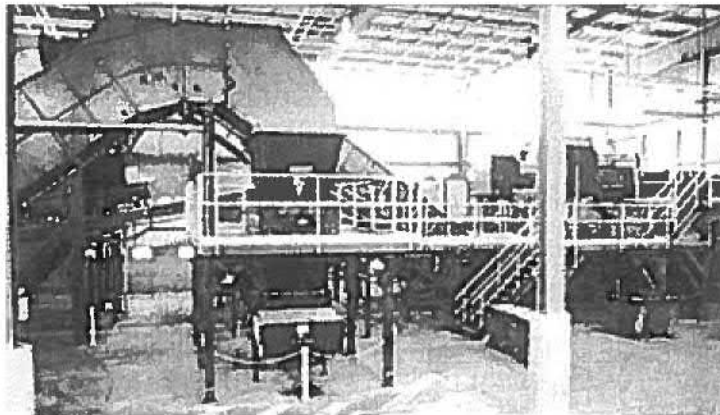
Biofilter:

- Removal and landfilling of media.
- Transfer of leachate to leachate storage tank.
- Flushing clear stone and transfer to leachate storage tank.
- Placing geomembrane lined notch in berm to limit depth of stored precipitation.
- Connection of biofilter to Stormwater ditching system.
- Installing perimeter fencing.

Fire Safety:

- Fire doors and Exit lighting are maintained.
- Dry Sprinkler System is maintained and air pressure monitored as required.
- Annual inspections of fire suppression equipment and systems, alarm systems and hydrants maintained.
- Propane system disconnected.

FEP Equipment



23. Does this information address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

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Otter Lake Waste Processing & Disposal Facility Survey

24. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

IF THE SYSTEM IS BEING MAINTAINED IT SHOULD BE USED. - WE (HRM TAXPAYERS) ARE PAYING FOR IT - IT SHOULD BE KEPT IN PLACE & USED.

Other items of concern related to the deactivation of the FEP/WSF

25. Please indicate any additional specific items of concern with respect to the proposed deactivation of the Otter Lake FEP/WSF:

THIS INITIATIVE REPRESENTS A COMPLETELY DISMISSIVE DISTAIN FOR THE SURROUNDING NEIGHBOURHOOD.

26. Please provide your contact information (optional):

Name:

Email:

Thank you for providing your input on the proposed deactivation of the FEP/WSF. For additional information including links to staff reports and the Closure Review report please visit here: Halifax.ca/OtterLake

This survey can be sent via email to otterlake@halifax.ca or by mail to Solid Waste Resources, PO Box 1749, Halifax, NS, B3J 3A5. Mailed surveys should be returned by **December 3, 2021**.

Bank's Office / Money
@ City Hall Nov. 30

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Otter Lake Waste Processing & Disposal Facility Survey

As part of the NS Environment and Climate Change application process to deactivate the Front End Processor and Waste Stabilization Facility (FEP/WSF), Halifax Regional Municipality (HRM) and MIRROR Nova Scotia are providing the public with the opportunity to comment on the potential impacts of the project to the environment and the proposed mitigation measures.

More information on this application process, HRM staff recommendations and supporting documents are provided at the following link:

Halifax.ca/OtterLake

In accordance with Section 485 of the Municipal Government Act (MGA), the personal information collected through the completion of this form will only be used by municipal staff and, if necessary, individuals and/or organizations under service contract with the Halifax Regional Municipality, for purposes relating to processing activities at the Otter Lake Waste Processing facility; the information will not be presented or compiled in a manner that could potentially identify any respondent. If you have any questions about the collection and use of this personal information, please contact the Access and Privacy Office at 902.476.3294 or privacy@halifax.ca.

Otter Lake FEP/WSF



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Otter Lake Waste Processing & Disposal Facility Survey

General Questions

1. Do you live within 5 km of the FEP/WSF?

- ☒ Yes
☐ No

2. Please provide your postal code (optional). E.g., A1A2B2

B3T-1P3

Areas of Concern

In the next few questions, an overview of potential area of concern and proposed mitigation measures have been provided along with the opportunity for you to provide additional comments regarding each of the potential concerns.

Safety of workers/increased traffic at landfill disposal area

Currently, all waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the FEP tipping floor (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles, i.e., waste from businesses, industries and institutions). It is reiterated that waste from businesses, industries and institutions arriving at Otter Lake will continue to be managed as it is today and will be directed to the Transfer Station tipping floor to be transferred off-site. The approach with respect to the proposed deactivation of the Otter Lake FEP/WSF is consistent with the current approach, but with the following changes:

- All waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the landfill disposal area (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles). Based on recent records for residential collection vehicle arrivals at Otter Lake, this will equate to approximately 25 to 30 vehicle trips to the landfill disposal area per day. This represents an

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Otter Lake Waste Processing & Disposal Facility Survey

increase of approximately eight to 10 vehicle trips per day to the landfill disposal area as compared to current conditions.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an increase in landfill disposal area traffic or worker safety have been identified. Some on-site impacts have been identified as representing a medium risk which includes increased disposal area traffic and worker safety. Mitigation measures include the following:

- Provision of instructions to residential collection contractors regarding site traffic rules and restrictions, including the definition of protocols (e.g., warnings, banning from site) for non-compliance.
- Establish directional signage from the Scale House to the landfill disposal area.
- Provision of traffic spotters at the landfill disposal area, acknowledging peak traffic periods.

Collection Vehicle at the Scale House



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Otter Lake Waste Processing & Disposal Facility Survey

3. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

4. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

Increased Traffic, Means Increased Volume. Already
 There is Residential Going Directly To Landfill. Sure
 The workers are safe from getting run over, But
 That's Not What Deactivation Of ECP/WSF Is
 All About.

Question irrelevant.

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Otter Lake Waste Processing & Disposal Facility Survey

Additional Blowing Litter

In addition to regular inspections and clean ups conducted along Highway 103 and the site access road, litter is currently collected on a daily basis from the Otter Lake site, particularly from fences, on-site roads, and entrance area. Fixed fences are installed as needed on exterior berms. Portable fences are installed at or near the landfill disposal area to catch windblown materials and are cleaned as necessary. Additionally, higher fencing is installed beyond the portable fencing as necessary to catch further wind-blown material.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to blowing litter have been identified. Some on-site impacts have been identified as medium risk which includes the increased potential for blowing litter at the landfill disposal area. Mitigation measures include the following:

- Use of additional portable fencing.
- Additional litter collection and removal efforts by site personnel.

Landfill Litter Fencing



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Otter Lake Waste Processing & Disposal Facility Survey

5. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

6. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

Blowing Litter HAS NOT BEEN A PROBLEM
AND WILL CONTINUE TO NOT BE A PROBLEM
SEEING THAT THE LAND FILL IS SURROUNDED BY
WOODED AREA THAT FILTERS BLOW OUT BEFORE
IT EVEN HITS RESIDENTIAL AREAS.

AGAIN NOT RELEVANT TO RESIDENTS

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Otter Lake Waste Processing & Disposal Facility Survey

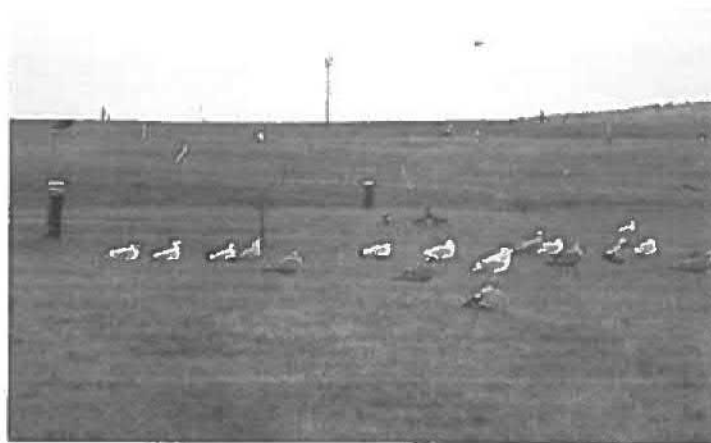
Enhanced attraction of birds

Currently, several bird management measures are regularly conducted in proximity to the landfill disposal area, including noise makers (whistler flares), use of a falcon and handler and limited culling (consistent with Federal regulations).

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an enhanced attraction of birds have been identified. Some on-site impacts have been identified as representing a medium risk which includes an enhanced attraction of birds. Mitigation measures include the following:

- Increased frequency of bird and vector control efforts at the landfill disposal area and around the landfill in general.
- Emphasis on minimizing the size (and thus the attractiveness to birds) of the landfill disposal area, as well as applying daily cover on freshly placed waste.

Birds on the Landfill Cap



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Otter Lake Waste Processing & Disposal Facility Survey

7. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

8. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

MORE GARBAGE, MORE BIRDS, MORE UPS
TO FIX THE PROBLEM. IT IS A PROBLEM
AT ALL.

HALIFAX

Otter Lake Waste Processing & Disposal Facility Survey

9. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

10. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

There is A Rodent Problem now in our Community.
HAS INCREASED over the last five years.
SO whatever is being done now doesn't work.
With the under estimated Increase of unchecked
Waste to the Landfill, I can only expect
Rodent Volume to Increase.

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Otter Lake Waste Processing & Disposal Facility Survey

Delivery of rodents to the disposal area

Currently, regular baiting programs for rodent control are conducted in proximity to the FEP/WSF. With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to the delivery of rodents to the landfill disposal area have been identified. Some on-site impacts have been identified as medium risk which includes the delivery of rodents to the landfill disposal area. Mitigation measures include the following:

- Implementation of a baiting program for rodents in proximity to the landfill disposal area.

Vehicle discharging waste at the Landfill Disposal Area



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Otter Lake Waste Processing & Disposal Facility Survey

Dust generation from additional disposal site traffic

Currently, all vehicles delivering waste to the Front End Processor and Transfer Station travel on paved roads. The perimeter access road around the landfill and leading to the disposal area is granular. A naturally-sourced dust suppressant (Tembec) is used as necessary to reduce the generation of dust. Landfill road construction and maintenance practices will be completed in a manner that will minimize creation of mud. Granular material and positive drainage will work to keep landfill roads dry and reduce the possibility of mud accumulation on haul trucks. With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach. No on or off-site impacts have been identified due to dust generation from additional disposal site traffic.

Vehicle on the Perimeter Access Road



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Otter Lake Waste Processing & Disposal Facility Survey

11. Does the existing approach address your concerns?

- ☒ Yes *AT LANDFILL*
☒ No *off site*
☐ I do not have any concerns

12. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

DUST is VENTUALLY NOT EXSISTANT NOW
HOWEVER,
WHEN MORE TYPES OF DISPOSAL ARE DIVERTED TO
OTHER LOCATIONS FOR EG. DEXTER CONSTRUCTION
AMP IN GOODWOOD "DUST IS A PROBLEM"
NOT HARD TO SEE THE CITY DOUBLING IN SIZE IN
THE NEXT 20 YEARS. WHAT IS BEING DONE
TO REDUCE THE HAZARDS INCREASED
BY DIVERSION TO OTHER SITES?

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Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of greenhouse gases

Landfills are a significant source of greenhouse gas emissions and produce methane gas, which is approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere. Diverting material (e.g., green cart program) from landfill disposal is the best way to reduce greenhouse gas emissions from Halifax's solid waste system.

As organic materials decompose in a landfill, they generate greenhouse gases; namely, methane and carbon dioxide. Based on previously completed evaluations, the FEP/WSF does not have a significant effect on the decomposition potential of waste delivered to the landfill. This has been illustrated by the ongoing requirement for landfill gas and leachate management systems at the landfill. The WSF does partially treat (decompose/stabilize) materials and therefore can reduce the amount of greenhouse gases generated in the landfill. The FEP separates materials that are smaller than 150 mm in size and conveys them to the WSF for treatment. However, other methane-generating materials greater than 150 mm in size and are not treated in the WSF. As such, greenhouse gases are not anticipated to greatly increase by deactivating the FEP/WSF as food waste only makes up a portion of the methane-generating waste deposited in the landfill.

The operation of the FEP/WSF consumes significant electricity. As a result of deactivating the FEP/WSF, there will be a significant reduction in electricity use on site and a corresponding reduction of greenhouse gas emissions in the order of 1240 tonnes of CO₂ (equivalent) per year. This offset will mitigate potential increases as result of not stabilizing materials in the WSF (as noted above).

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Otter Lake Waste Processing & Disposal Facility Survey

Landfill Gas Collection Wells



13. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

14. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

You say NOT TO Expect A significant increase in gases.
 You don't say how much gas contributing material
 is separated by way of FEP/WSF. When shut
 down, it is only common sense to anticipate
 an increase in gas producing material.
 After all, there are a lot of black bags with mixed
 waste getting to landfill now. With the increase
 in apartment + condo living you can expect
 more. If these are the under estimated
 8-10 loads per day, you will have
 a bigger problem.

THE SAVINGS IN ELECTRICITY WILL NOT WARRANT.

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Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of odours

Dillon's FEP/WSF Closure Review noted that the potential for odour issues at the landfill may be increased by operating the FEP/WSF. The reason is that the WSF stabilization process 'kick starts' the microbiological treatment process that continues once the material is landfilled. Once the 'stabilized' material is landfilled (i.e., output from WSF), the production of landfill gas (including odorous hydrogen sulfide gas) is quicker at Otter Lake than at a traditional municipal solid waste landfill.

Odour mitigation measures will continue regardless of whether the FEP/WSF is operated, these include:

- Maintaining the landfill disposal area as small as possible.
- Applying daily landfill cover to freshly placed waste.
- Maintaining a landfill gas collection and treatment system.
- Proactive monitoring for site odours.

With respect to the proposed deactivation of the Otter Lake FEP/WSF the proposed approach is consistent with the current approach for the management of odours. No on or off-site impacts due to odours have been identified with the proposed deactivation.

Landfill Gas Flares



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Otter Lake Waste Processing & Disposal Facility Survey

15. Does the existing approach address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

16. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item (400 character limit):

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Otter Lake Waste Processing & Disposal Facility Survey

Impact to groundwater quality

Nova Scotia has stringent landfill requirements with respect to groundwater quality protection. Otter Lake was developed as what is known in Nova Scotia as a 'second generation landfill'. This means that the landfill at Otter Lake is equipped with a double composite liner system and leachate collection system, which prevents leachate from entering the underlying soils and groundwater. Deactivating the FEP/WSF will have no impact on protecting groundwater.

Precipitation that comes in contact with waste in the landfill and percolates to the bottom of the landfill is called leachate. As such the landfill disposal area is kept as small as possible (e.g., less than 30 m in width) to limit the amount of exposed waste (water that runs off the landfill cap is managed as surface water). Leachate which percolates through waste is collected within the leachate collection system at the bottom of the landfill (and located above the double composite liner system). Leachate is conveyed via pipes to collection sumps where it is subsequently pumped to a leachate storage tank. Leachate from the storage tank is transferred to a tanker truck as required for transport to an approved treatment facility (currently Halifax Water's Mill Cove Wastewater Treatment Facility). In cases of high flows, a temporary holding pond, located near Cell 4, can accept leachate. Regular monitoring of site groundwater, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of leachate management infrastructure and operations at the site.

With respect to the deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of groundwater quality. No on or off-site impacts due to groundwater quality have been identified with the proposed deactivation.

HALIFAX

Otter Lake Waste Processing & Disposal Facility Survey

Sampling of a Groundwater Monitoring Well



17. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

18. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

The Double composite liner has already been added
 to its height some years ago. The landfill has already
 surpassed the date of which a new landfill was supposed
 to be found. What I see coming is an
 overflow due to the definite increase in volume.
 Ask Mr. Dillon what happened in Toronto 45 years
 ago when all those surrounding areas were amalgamated
 in to the Big City.

FEP/WSF become even more important
 as a city grows!

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Otter Lake Waste Processing & Disposal Facility Survey

Impact to surface water quality

Surface water is generated at landfills predominantly related to runoff from the landfill cap — i.e., this is precipitation/rainfall that runs down the capped landfill side slopes and has not come into contact with waste materials.

At Otter Lake, the surface water management system includes ditches, pipes, culverts etc. to convey surface water to stormwater management ponds. The stormwater management ponds are used to remove sedimentation in the surface water. The surface water in the stormwater management ponds is tested prior to discharging to the Nine Mile River.

Erosion control measures are key to preventing erosion and sedimentation in surface water. Examples of erosion control measures include temporary measures such as the use of erosion protection blankets, and permanent measures such as seeding and establishing a grass/vegetative cover on the landfill cap.

Monthly erosion inspections are completed to ensure that adequate measures have been put in place. Additionally after each storm event, all erosion control measures are inspected, and, if found to be damaged, are repaired or replaced as soon as possible.

Regular monitoring of site surface water, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of stormwater management infrastructure and operations at the site.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of surface water quality. No on or off-site impacts due to surface water quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Surface Water Sampling



19. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

20. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

Our weather patterns are changing, when it rains
 it comes in great volume. What use to be
 snow, with a slow meltdown, is now rain
 (global warming) 30 years ago when the landfill
 was designed, we lived in a different environment.
 Now with increased unchecked garbage, landfill
 out dated, you can only expect surface
 Run off to reach farther than ever.

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Otter Lake Waste Processing & Disposal Facility Survey

Honouring the original Community Agreement

The 1999 agreement between HRM and the Halifax Waste Resource Society (Society) titled: "Agreement for Community Monitoring of Solid Waste Facilities" (HRWS Agreement) lays out the framework for community monitoring of landfill operations by the Community Monitoring Committee (CMC). The agreement can be accessed at Halifax.ca/OtterLake

The Society was established in 1999 to represent the interests of the local community with respect to Otter Lake. As part of developing Otter Lake, HRM entered into an agreement with the Society to establish roles and responsibilities, including the establishment of the CMC. The CMC consists of 15 members, 9 of which are appointed by the Society, and 6 of which are appointed by HRM. HRM's representatives on the CMC include the Mayor and the Councillors from Districts 11, 12, and 13.

The agreement does not specifically mandate that the FEP/WSF be operated at Otter Lake. The agreement stipulates that only 'Acceptable Waste' shall be landfilled. Acceptable Waste is defined as "Inert Materials"; "Stable Materials" (i.e., biostabilized through the FEP/WSF); and "Residual Materials" (i.e., minor quantities of putrescible and other banned materials).

While the FEP/WSF was designed as a mechanism to biostabilize putrescible waste (e.g., food waste), it provides little if any benefit to the environment today as the composition of waste and quantity has changed significantly since the development of Otter Lake in the late 1995. This is in part due to the success of HRM's solid waste program, including the success of the green cart program at diverting food waste from landfill disposal. Most of the waste currently delivered to and disposed of at Otter Lake is considered Inert Materials or Residual Materials, such that it does not need to be biostabilized prior to landfilling. Based on current tonnages HRM can therefore remain compliant with its commitments under agreement if the FEP/WSF is deactivated.

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Otter Lake Waste Processing & Disposal Facility Survey

Otter Lake Waste Processing & Disposal Facility



21. Does this information address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

22. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Basing your views on current tonnage is not responsible. There will be increased tonnage as you stated. The speed of growth in HRM should only determine that the FEP/WSP need be improved to handle more. I know for a fact that separation by the residents is not always done. This means at the FEP/WSP, the food waste, chemicals, metals etc. still need to be separated. By shutting down the FEP/WSP we will be facing a toxic site in 20 years to come such as the Sackville landfill which had to payout surrounding residents for contamination. MORE SEPARATION! NOT LESS!

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Otter Lake Waste Processing & Disposal Facility Survey

Biofilter:

- Removal and landfilling of media.
- Transfer of leachate to leachate storage tank.
- Flushing clear stone and transfer to leachate storage tank.
- Placing geomembrane lined notch in berm to limit depth of stored precipitation.
- Connection of biofilter to Stormwater ditching system.
- Installing perimeter fencing.

Fire Safety:

- Fire doors and Exit lighting are maintained.
- Dry Sprinkler System is maintained and air pressure monitored as required.
- Annual inspections of fire suppression equipment and systems, alarm systems and hydrants maintained.
- Propane system disconnected.

FEP Equipment



23. Does this information address your concerns?

☐ Yes

☒ No

☐ I do not have any concerns

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Otter Lake Waste Processing & Disposal Facility Survey

Inability to reactivate the FEP/WSF if necessary

As part of the proposed deactivation plan, the FEP/WSF will be maintained such that the facilities could be put back into operation if needed. Activities have been defined to appropriately monitor and maintain the FEP/WSF following deactivation and include:

General:

- Removal of waste materials.
- Areas free of debris or stored materials.
- Cleaning floors.
- Regular walkthroughs are conducted and documented including the inspection of structural members and equipment support members.
- Access Control - doors and access points locked and/or regularly checked.
- Security of site maintained.
- Structures are maintained wind and water tight.
- Ventilation minimized but maintained.
- Pest control program maintained.

Mechanical Equipment:

- Removing/flushing/draining/purging of tanks/piping and winterizing.
- Cleaning equipment/supports.
- Filling all lubricants/seal systems.
- Removing/replacement of existing fluids.
- Applying external vapour corrosion inhibitors to equipment and supports.
- Machinery shutdown (locked and tagged out) — ongoing inspections — may include additional lubricants, dust coverings, regular energizing/rotation schedule, etc.

Electrical Equipment:

- Application of desiccants and vapour phase inhibitors in panels/cabinets.
- Motor heaters' activation.
- Provide heaters inside panels where condensation might be an issue.
- Thermal imagery of electrical circuits to remain energized.

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Otter Lake Waste Processing & Disposal Facility Survey

24. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Equipment is meant to be used, the longer it sits the more foreseeable problems. After all, that's why you speak of maintenance. Due to the expected increase in volume, at some point it is decided to reactivate, the system will not be sufficient to handle the new work load. By keeping it in operating (FEP/WSF) it can be improved as we grow.

Other items of concern related to the deactivation of the FEP/WSF

25. Please indicate any additional specific items of concern with respect to the proposed deactivation of the Otter Lake FEP/WSF:

This was a big deal several years ago. At that point we could have public meetings. Today you want people to go on a computer. For those who do not have computers, they are at a disadvantage. Throughout this survey, not once has it been asked just what the FEP/WSF has done or the importance of it. It appears it all comes down to costs of running, and that's what you really want to defer.

26. Please provide your contact information (optional):

Name:

Email:

Thank you for providing your input on the proposed deactivation of the FEP/WSF. For additional information including links to staff reports and the Closure Review report please visit here: Halifax.ca/OtterLake

This survey can be sent via email to otterlake@halifax.ca or by mail to Solid Waste Resources, PO Box 1749, Halifax, NS, B3J 3A5. Mailed surveys should be returned by **December 3, 2021**.

Otter Lake Waste Processing & Disposal Facility Survey

As part of the NS Environment and Climate Change application process to deactivate the Front End Processor and Waste Stabilization Facility (FEP/WSF), Halifax Regional Municipality (HRM) and MIRROR Nova Scotia are providing the public with the opportunity to comment on the potential impacts of the project to the environment and the proposed mitigation measures.

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Otter Lake FEP/WSF



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Otter Lake Waste Processing & Disposal Facility Survey

General Questions

1. Do you live within 5 km of the FEP/WSF?

- ☒ Yes
☐ No

2. Please provide your postal code (optional). E.g., A1A2B2

B3T0H3

Areas of Concern

In the next few questions, an overview of potential area of concern and proposed mitigation measures have been provided along with the opportunity for you to provide additional comments regarding each of the potential concerns.

Safety of workers/increased traffic at landfill disposal area

Currently, all waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the FEP tipping floor (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles, i.e., waste from businesses, industries and institutions). It is reiterated that waste from businesses, industries and institutions arriving at Otter Lake will continue to be managed as it is today and will be directed to the Transfer Station tipping floor to be transferred off-site. The approach with respect to the proposed deactivation of the Otter Lake FEP/WSF is consistent with the current approach, but with the following changes:

- All waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the landfill disposal area (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles). Based on recent records for residential collection vehicle arrivals at Otter Lake, this will equate to approximately 25 to 30 vehicle trips to the landfill disposal area per day. This represents an

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Otter Lake Waste Processing & Disposal Facility Survey

increase of approximately eight to 10 vehicle trips per day to the landfill disposal area as compared to current conditions. *increased traffic - highway*

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an increase in landfill disposal area traffic or worker safety have been identified. Some on-site impacts have been identified as representing a medium risk which includes increased disposal area traffic and worker safety. Mitigation measures include the following:

- Provision of instructions to residential collection contractors regarding site traffic rules and restrictions, including the definition of protocols (e.g., warnings, banning from site) for non-compliance.
- Establish directional signage from the Scale House to the landfill disposal area.
- Provision of traffic spotters at the landfill disposal area, acknowledging peak traffic periods.

Collection Vehicle at the Scale House



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Otter Lake Waste Processing & Disposal Facility Survey

3. Do these mitigation measures address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

4. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

- Admit to increase in traffic - Trucks

- Agree, no identified concerns - re: safety / other impacts

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Otter Lake Waste Processing & Disposal Facility Survey

Additional Blowing Litter

In addition to regular inspections and clean ups conducted along Highway 103 and the site access road, litter is currently collected on a daily basis from the Otter Lake site, particularly from fences, on-site roads, and entrance area. Fixed fences are installed as needed on exterior berms. Portable fences are installed at or near the landfill disposal area to catch windblown materials and are cleaned as necessary. Additionally, higher fencing is installed beyond the portable fencing as necessary to catch further wind-blown material.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to blowing litter have been identified. Some on-site impacts have been identified as medium risk which includes the increased potential for blowing litter at the landfill disposal area. Mitigation measures include the following:

- ✓ Use of additional portable fencing.
- ✓ Additional litter collection and removal efforts by site personnel.

Landfill Litter Fencing



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5. Do these mitigation measures address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

6. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Enhanced attraction of birds

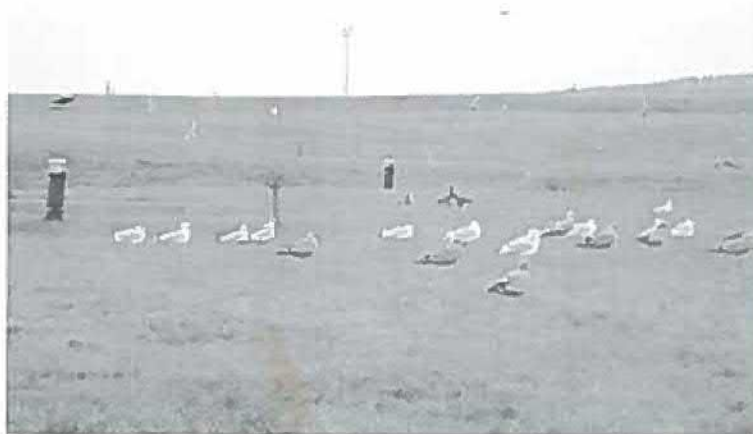
Currently, several bird management measures are regularly conducted in proximity to the landfill disposal area, including noise makers (whistler flares), use of a falcon and handler and limited culling (consistent with Federal regulations).

Killing

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an enhanced attraction of birds have been identified.[?] Some on-site impacts have been identified as representing a medium risk which includes an enhanced attraction of birds. Mitigation measures include the following:

- Increased frequency of bird and vector control efforts at the landfill disposal area and around the landfill in general.
- Emphasis on minimizing the size (and thus the attractiveness to birds) of the landfill disposal area, as well as applying daily cover on freshly placed waste.

Birds on the Landfill Cap



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Otter Lake Waste Processing & Disposal Facility Survey

7. Do these mitigation measures address your concerns?



Yes



No



I do not have any concerns

8. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

— exposure of waste will attract feeders —
— remedy — includes increased killing —
— We can't predict animal behaviour —

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Otter Lake Waste Processing & Disposal Facility Survey

Delivery of rodents to the disposal area

Currently, regular baiting programs for rodent control are conducted in proximity to the FEP/WSF. With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to the delivery of rodents to the landfill disposal area have been identified. Some on-site impacts have been identified as medium risk which includes the delivery of rodents to the landfill disposal area. Mitigation measures include the following:

- Implementation of a baiting program for rodents in proximity to the landfill disposal area.

Vehicle discharging waste at the Landfill Disposal Area



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Otter Lake Waste Processing & Disposal Facility Survey

9. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

10. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

statement refers to "delivery of rodents"
Exposure of trash will attract rodents
— greater breeding / increased numbers
potential for spreading to outlying
areas / housing

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Otter Lake Waste Processing & Disposal Facility Survey

Dust generation from additional disposal site traffic

Currently, all vehicles delivering waste to the Front End Processor and Transfer Station travel on paved roads. The perimeter access road around the landfill and leading to the disposal area is granular. A naturally-sourced dust suppressant (Tembec) is used as necessary to reduce the generation of dust. Landfill road construction and maintenance practices will be completed in a manner that will minimize creation of mud. Granular material and positive drainage will work to keep landfill roads dry and reduce the possibility of mud accumulation on haul trucks. With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach. No on or off-site impacts have been identified due to dust generation from additional disposal site traffic.

Vehicle on the Perimeter Access Road



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Otter Lake Waste Processing & Disposal Facility Survey

11. Does the existing approach address your concerns?

- ☐ Yes
☐ No
☒ I do not have any concerns

12. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

increased traffic! more disturbance!
more dust

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Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of greenhouse gases

Landfills are a significant source of greenhouse gas emissions and produce methane gas, which is approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere. Diverting material (e.g., green cart program) from landfill disposal is the best way to reduce greenhouse gas emissions from Halifax's solid waste system.

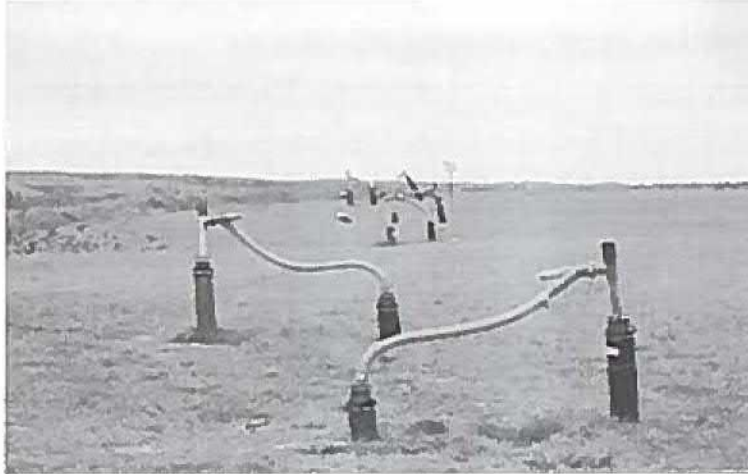
As organic materials decompose in a landfill, they generate greenhouse gases; namely, methane and carbon dioxide. Based on previously completed evaluations, the FEP/WSF does not have a significant effect on the decomposition potential of waste delivered to the landfill. This has been illustrated by the ongoing requirement for landfill gas and leachate management systems at the landfill. The WSF does partially treat (decompose/stabilize) materials and therefore can reduce the amount of greenhouse gases generated in the landfill. The FEP separates materials that are smaller than 150 mm in size and conveys them to the WSF for treatment. However, other methane-generating materials greater than 150 mm in size and are not treated in the WSF. As such, greenhouse gases are not anticipated to greatly increase by deactivating the FEP/WSF as food waste only makes up a portion of the methane-generating waste deposited in the landfill. *perhaps greater portion*

The operation of the FEP/WSF consumes significant electricity. As a result of deactivating the FEP/WSF, there will be a significant reduction in electricity use on site and a corresponding reduction of greenhouse gas emissions in the order of 1240 tonnes of CO₂ (equivalent) per year. This offset will mitigate potential increases as result of not stabilizing materials in the WSF (as noted above).

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Otter Lake Waste Processing & Disposal Facility Survey

Landfill Gas Collection Wells



13. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

14. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

Organic waste still needs disposal
or treatment - regardless of method,
gases still generated
Electricity saving is likely negligible

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Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of odours

Dillon's FEP/WSF Closure Review noted that the potential for odour issues at the landfill may be increased by operating the FEP/WSF. The reason is that the WSF stabilization process 'kick starts' the microbiological treatment process that continues once the material is landfilled. Once the 'stabilized' material is landfilled (i.e., output from WSF), the production of landfill gas (including odorous hydrogen sulfide gas) is quicker at Otter Lake than at a traditional municipal solid waste landfill.

Odour mitigation measures will continue regardless of whether the FEP/WSF is operated, these include:

- Maintaining the landfill disposal area as small as possible.
- Applying daily landfill cover to freshly placed waste.
- Maintaining a landfill gas collection and treatment system.
- Proactive monitoring for site odours.

With respect to the proposed deactivation of the Otter Lake FEP/WSF the proposed approach is consistent with the current approach for the management of odours. No on or off-site impacts due to odours have been identified with the proposed deactivation.

Landfill Gas Flares



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Otter Lake Waste Processing & Disposal Facility Survey

15. Does the existing approach address your concerns?

- ☐ Yes
☐ No
☐ I do not have any concerns

16. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item (400 character limit):

Don't have background to
evaluate - productⁿ of odors.

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Otter Lake Waste Processing & Disposal Facility Survey

Impact to groundwater quality

Nova Scotia has stringent landfill requirements with respect to groundwater quality protection. Otter Lake was developed as what is known in Nova Scotia as a 'second generation landfill'. This means that the landfill at Otter Lake is equipped with a double composite liner system and leachate collection system, which prevents leachate from entering the underlying soils and groundwater. Deactivating the FEP/WSF will have no impact on protecting groundwater.

Precipitation that comes in contact with waste in the landfill and percolates to the bottom of the landfill is called leachate. As such the landfill disposal area is kept as small as possible (e.g., less than 30 m in width) to limit the amount of exposed waste (water that runs off the landfill cap is managed as surface water). Leachate which percolates through waste is collected within the leachate collection system at the bottom of the landfill (and located above the double composite liner system). Leachate is conveyed via pipes to collection sumps where it is subsequently pumped to a leachate storage tank. Leachate from the storage tank is transferred to a tanker truck as required for transport to an approved treatment facility (currently Halifax Water's Mill Cove Wastewater Treatment Facility). In cases of high flows, a temporary holding pond, located near Cell 4, can accept leachate. Regular monitoring of site groundwater, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of leachate management infrastructure and operations at the site.

With respect to the deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of groundwater quality. No on or off-site impacts due to groundwater quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Sampling of a Groundwater Monitoring Well



17. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

18. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

No liner/leachate system
is fool proof. History shows
multiple failures - many places
More exposure - greater risk

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Otter Lake Waste Processing & Disposal Facility Survey

Impact to surface water quality

Surface water is generated at landfills predominantly related to runoff from the landfill cap — i.e., this is precipitation/rainfall that runs down the capped landfill side slopes and has not come into contact with waste materials.

At Otter Lake, the surface water management system includes ditches, pipes, culverts etc. to convey surface water to stormwater management ponds. The stormwater management ponds are used to remove sedimentation in the surface water. The surface water in the stormwater management ponds is tested prior to discharging to the Nine Mile River.

Erosion control measures are key to preventing erosion and sedimentation in surface water. Examples of erosion control measures include temporary measures such as the use of erosion protection blankets, and permanent measures such as seeding and establishing a grass/vegetative cover on the landfill cap.

Monthly erosion inspections are completed to ensure that adequate measures have been put in place. Additionally after each storm event, all erosion control measures are inspected, and, if found to be damaged, are repaired or replaced as soon as possible.

Regular monitoring of site surface water, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of stormwater management infrastructure and operations at the site.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of surface water quality. No on or off-site impacts due to surface water quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Surface Water Sampling



19. Does the existing approach address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

20. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

Again - while we may attempt to
control potential events -
unlikely that we'll succeed

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Otter Lake Waste Processing & Disposal Facility Survey

Honouring the original Community Agreement

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While the FEP/WSF was designed as a mechanism to biostabilize putrescible waste (e.g., food waste), it provides little if any benefit to the environment today as the composition of waste and quantity has changed significantly since the development of Otter Lake in the late 1995. This is in part due to the success of HRM's solid waste program, including the success of the green cart program at diverting food waste from landfill disposal. Most of the waste currently delivered to and disposed of at Otter Lake is considered Inert Materials or Residual Materials, such that it does not need to be biostabilized prior to landfilling. Based on current tonnages HRM can therefore remain compliant with its commitments under agreement if the FEP/WSF is deactivated.

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Otter Lake Waste Processing & Disposal Facility Survey

Otter Lake Waste Processing & Disposal Facility



21. Does this information address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

22. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Cherry picking to weasel out of
an agreement.

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Otter Lake Waste Processing & Disposal Facility Survey

Inability to reactivate the FEP/WSF if necessary

As part of the proposed deactivation plan, the FEP/WSF will be maintained such that the facilities could be put back into operation if needed. Activities have been defined to appropriately monitor and maintain the FEP/WSF following deactivation and include:

General:

- Removal of waste materials.
- Areas free of debris or stored materials.
- Cleaning floors.
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Otter Lake Waste Processing & Disposal Facility Survey

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- Fire doors and Exit lighting are maintained.
- Dry Sprinkler System is maintained and air pressure monitored as required.
- Annual inspections of fire suppression equipment and systems, alarm systems and hydrants maintained.
- Propane system disconnected.

FEP Equipment



23. Does this information address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

HALIFAX

Otter Lake Waste Processing & Disposal Facility Survey

24. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

The longer equipment is mothballed, the greater the likelihood of neglect to facilities - As time passes - easier ways of doing things will take place - facilities will deteriorate

Other items of concern related to the deactivation of the FEP/WSF

25. Please indicate any additional specific items of concern with respect to the proposed deactivation of the Otter Lake FEP/WSF:

Item in newspaper stated that a saving of 2 million in a budget of 2 billions - $\approx 0.002\%$ miniscule. However, it's likely that a contract of some sort will be planned to eat that small saving

26. Please provide your contact information (optional):

Name: _____

Email: _____

Thank you for providing your input on the proposed deactivation of the FEP/WSF. For additional information including links to staff reports and the Closure Review report please visit here: Halifax.ca/OtterLake

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I have contacted the Timberline Representative but no reply. I have tried to fill the

Survey online with 2 I-pads, 1 Mac Pro but was blocked. Please listen to your clientele.

From: [REDACTED]
To: [Otter Lake Waste Processing Facility](#)
Subject: [External Email] Otterlake Landfill Survey
Date: Wednesday, December 1, 2021 11:10:48 PM
Attachments: [Otter Lake Survey.pdf](#)

[This email has been received from an external person or system]

[REDACTED]

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Otter Lake Waste Processing & Disposal Facility Survey

As part of the NS Environment and Climate Change application process to deactivate the Front End Processor and Waste Stabilization Facility (FEP/WSF), Halifax Regional Municipality (HRM) and MIRROR Nova Scotia are providing the public with the opportunity to comment on the potential impacts of the project to the environment and the proposed mitigation measures.

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Otter Lake FEP/WSF



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Otter Lake Waste Processing & Disposal Facility Survey

General Questions

1. Do you live within 5 km of the FEP/WSF?

- ☐ Yes
☒ No

2. Please provide your postal code (optional). E.g., A1A2B2

B3M4M8

Areas of Concern

In the next few questions, an overview of potential area of concern and proposed mitigation measures have been provided along with the opportunity for you to provide additional comments regarding each of the potential concerns.

Safety of workers/increased traffic at landfill disposal area

Currently, all waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the FEP tipping floor (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles, i.e., waste from businesses, industries and institutions). It is reiterated that waste from businesses, industries and institutions arriving at Otter Lake will continue to be managed as it is today and will be directed to the Transfer Station tipping floor to be transferred off-site. The approach with respect to the proposed deactivation of the Otter Lake FEP/WSF is consistent with the current approach, but with the following changes:

- All waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the landfill disposal area (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles). Based on recent records for residential collection vehicle arrivals at Otter Lake, this will equate to approximately 25 to 30 vehicle trips to the landfill disposal area per day. This represents an

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Otter Lake Waste Processing & Disposal Facility Survey

increase of approximately eight to 10 vehicle trips per day to the landfill disposal area as compared to current conditions.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an increase in landfill disposal area traffic or worker safety have been identified. Some on-site impacts have been identified as representing a medium risk which includes increased disposal area traffic and worker safety. Mitigation measures include the following:

- Provision of instructions to residential collection contractors regarding site traffic rules and restrictions, including the definition of protocols (e.g., warnings, banning from site) for non-compliance.
- Establish directional signage from the Scale House to the landfill disposal area.
- Provision of traffic spotters at the landfill disposal area, acknowledging peak traffic periods.

Collection Vehicle at the Scale House





Otter Lake Waste Processing & Disposal Facility Survey

3. Do these mitigation measures address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

4. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

Elimination of the sorting of trash will result in many undesirable items entering the landfill,
many of which will be toxic to the environment while items that would typically be composted
will attract vermin and birds

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Additional Blowing Litter

In addition to regular inspections and clean ups conducted along Highway 103 and the site access road, litter is currently collected on a daily basis from the Otter Lake site, particularly from fences, on-site roads, and entrance area. Fixed fences are installed as needed on exterior berms. Portable fences are installed at or near the landfill disposal area to catch windblown materials and are cleaned as necessary. Additionally, higher fencing is installed beyond the portable fencing as necessary to catch further wind-blown material.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to blowing litter have been identified. Some on-site impacts have been identified as medium risk which includes the increased potential for blowing litter at the landfill disposal area. Mitigation measures include the following:

- Use of additional portable fencing.
- Additional litter collection and removal efforts by site personnel.

Landfill Litter Fencing





Otter Lake Waste Processing & Disposal Facility Survey

5. Do these mitigation measures address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

6. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Enhanced attraction of birds

Currently, several bird management measures are regularly conducted in proximity to the landfill disposal area, including noise makers (whistler flares), use of a falcon and handler and limited culling (consistent with Federal regulations).

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an enhanced attraction of birds have been identified. Some on-site impacts have been identified as representing a medium risk which includes an enhanced attraction of birds. Mitigation measures include the following:

- Increased frequency of bird and vector control efforts at the landfill disposal area and around the landfill in general.
- Emphasis on minimizing the size (and thus the attractiveness to birds) of the landfill disposal area, as well as applying daily cover on freshly placed waste.

Birds on the Landfill Cap





Otter Lake Waste Processing & Disposal Facility Survey

7. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

8. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

Unless you are willing to employ your proposed mitigation measures 24/7 352 days a year
they real impact will be marginal

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Delivery of rodents to the disposal area

Currently, regular baiting programs for rodent control are conducted in proximity to the FEP/WSF. With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to the delivery of rodents to the landfill disposal area have been identified. Some on-site impacts have been identified as medium risk which includes the delivery of rodents to the landfill disposal area. Mitigation measures include the following:

- Implementation of a baiting program for rodents in proximity to the landfill disposal area.

Vehicle discharging waste at the Landfill Disposal Area





Otter Lake Waste Processing & Disposal Facility Survey

9. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

10. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

Baiting in an attempt to control rodents will not be effective. Elimination of a food source (i.e. removal of potential food sources) is the only proven method. As a worker in the Halifax food/restaurant industry I have had to deal with rats and mice in the workplace. Traps and poison baiting DOES NOT WORK. Removal of their food sources like trash food waste is the only proven method.

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Dust generation from additional disposal site traffic

Currently, all vehicles delivering waste to the Front End Processor and Transfer Station travel on paved roads. The perimeter access road around the landfill and leading to the disposal area is granular. A naturally-sourced dust suppressant (Tembec) is used as necessary to reduce the generation of dust. Landfill road construction and maintenance practices will be completed in a manner that will minimize creation of mud. Granular material and positive drainage will work to keep landfill roads dry and reduce the possibility of mud accumulation on haul trucks. With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach. No on or off-site impacts have been identified due to dust generation from additional disposal site traffic.

Vehicle on the Perimeter Access Road





Otter Lake Waste Processing & Disposal Facility Survey

11. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

12. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:



Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of greenhouse gases

Landfills are a significant source of greenhouse gas emissions and produce methane gas, which is approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere. Diverting material (e.g., green cart program) from landfill disposal is the best way to reduce greenhouse gas emissions from Halifax's solid waste system.

As organic materials decompose in a landfill, they generate greenhouse gases; namely, methane and carbon dioxide. Based on previously completed evaluations, the FEP/WSF does not have a significant effect on the decomposition potential of waste delivered to the landfill. This has been illustrated by the ongoing requirement for landfill gas and leachate management systems at the landfill. The WSF does partially treat (decompose/stabilize) materials and therefore can reduce the amount of greenhouse gases generated in the landfill. The FEP separates materials that are smaller than 150 mm in size and conveys them to the WSF for treatment. However, other methane-generating materials greater than 150 mm in size and are not treated in the WSF. As such, greenhouse gases are not anticipated to greatly increase by deactivating the FEP/WSF as food waste only makes up a portion of the methane- generating waste deposited in the landfill.

The operation of the FEP/WSF consumes significant electricity. As a result of deactivating the FEP/WSF, there will be a significant reduction in electricity use on site and a corresponding reduction of greenhouse gas emissions in the order of 1240 tonnes of CO₂ (equivalent) per year. This offset will mitigate potential increases as result of not stabilizing materials in the WSF (as noted above).

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Landfill Gas Collection Wells



13. Does the existing approach address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

14. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

Offgas production in a landfill is to be expected. With the loss of the WSF you will be

increasing the volumne of gas production and thereby mitigate any progress towards a

cleaner environment.

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Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of odours

Dillon's FEP/WSF Closure Review noted that the potential for odour issues at the landfill may be increased by operating the FEP/WSF. The reason is that the WSF stabilization process 'kick starts' the microbiological treatment process that continues once the material is landfilled. Once the 'stabilized' material is landfilled (i.e., output from WSF), the production of landfill gas (including odorous hydrogen sulfide gas) is quicker at Otter Lake than at a traditional municipal solid waste landfill.

Odour mitigation measures will continue regardless of whether the FEP/WSF is operated, these include:

- Maintaining the landfill disposal area as small as possible.
- Applying daily landfill cover to freshly placed waste.
- Maintaining a landfill gas collection and treatment system.
- Proactive monitoring for site odours.

With respect to the proposed deactivation of the Otter Lake FEP/WSF the proposed approach is consistent with the current approach for the management of odours. No on or off-site impacts due to odours have been identified with the proposed deactivation.

Landfill Gas Flares





Otter Lake Waste Processing & Disposal Facility Survey

15. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

16. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item (400 character limit):



Otter Lake Waste Processing & Disposal Facility Survey

Impact to groundwater quality

Nova Scotia has stringent landfill requirements with respect to groundwater quality protection. Otter Lake was developed as what is known in Nova Scotia as a 'second generation landfill". This means that the landfill at Otter Lake is equipped with a double composite liner system and leachate collection system, which prevents leachate from entering the underlying soils and groundwater. Deactivating the FEP/WSF will have no impact on protecting groundwater.

Precipitation that comes in contact with waste in the landfill and percolates to the bottom of the landfill is called leachate. As such the landfill disposal area is kept as small as possible (e.g., less than 30 m in width) to limit the amount of exposed waste (water that runs off the landfill cap is managed as surface water). Leachate which percolates through waste is collected within the leachate collection system at the bottom of the landfill (and located above the double composite liner system). Leachate is conveyed via pipes to collection sumps where it is subsequently pumped to a leachate storage tank. Leachate from the storage tank is transferred to a tanker truck as required for transport to an approved treatment facility (currently Halifax Water's Mill Cove Wastewater Treatment Facility). In cases of high flows, a temporary holding pond, located near Cell 4, can accept leachate. Regular monitoring of site groundwater, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of leachate management infrastructure and operations at the site.

With respect to the deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of groundwater quality. No on or off-site impacts due to groundwater quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Sampling of a Groundwater Monitoring Well



17. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

18. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

My concerns are a possible failure of your containment facility and the poisoning of the
local water table. With very few exceptions the people who current live (and those that
may potentially live as the city expands) in the area are serviced by individual wells. The
elimination of the WSF will undoubtedly result in toxic substances entering the landfill. Once
the ground water table is contaminated, they will be no way to rectify the problem



Otter Lake Waste Processing & Disposal Facility Survey

Impact to surface water quality

Surface water is generated at landfills predominantly related to runoff from the landfill cap — i.e., this is precipitation/rainfall that runs down the capped landfill side slopes and has not come into contact with waste materials.

At Otter Lake, the surface water management system includes ditches, pipes, culverts etc. to convey surface water to stormwater management ponds. The stormwater management ponds are used to remove sedimentation in the surface water. The surface water in the stormwater management ponds is tested prior to discharging to the Nine Mile River.

Erosion control measures are key to preventing erosion and sedimentation in surface water. Examples of erosion control measures include temporary measures such as the use of erosion protection blankets, and permanent measures such as seeding and establishing a grass/vegetative cover on the landfill cap.

Monthly erosion inspections are completed to ensure that adequate measures have been put in place. Additionally after each storm event, all erosion control measures are inspected, and, if found to be damaged, are repaired or replaced as soon as possible.

Regular monitoring of site surface water, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of stormwater management infrastructure and operations at the site.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of surface water quality. No on or off-site impacts due to surface water quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Surface Water Sampling



19. Does the existing approach address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

20. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

My fear is that chemicals, paints, acids, toxic and animal waste, to name a few
 will end up contaminating the ground water during periods of extreme precipitation.
 Many of these possible contaminants are now being through the sorting process. Once
 they escape from the landfill, the effect on local ground water, vegetation and animals will be
 irreversible



Otter Lake Waste Processing & Disposal Facility Survey

Honouring the original Community Agreement

The 1999 agreement between HRM and the Halifax Waste Resource Society (Society) titled: "Agreement for Community Monitoring of Solid Waste Facilities" (HRWS Agreement) lays out the framework for community monitoring of landfill operations by the Community Monitoring Committee (CMC). The agreement can be accessed at Halifax.ca/OtterLake

The Society was established in 1999 to represent the interests of the local community with respect to Otter Lake. As part of developing Otter Lake, HRM entered into an agreement with the Society to establish roles and responsibilities, including the establishment of the CMC. The CMC consists of 15 members, 9 of which are appointed by the Society, and 6 of which are appointed by HRM. HRM's representatives on the CMC include the Mayor and the Councillors from Districts 11, 12, and 13.

The agreement does not specifically mandate that the FEP/WSF be operated at Otter Lake. The agreement stipulates that only 'Acceptable Waste' shall be landfilled. Acceptable Waste is defined as "Inert Materials"; "Stable Materials" (i.e., biostabilized through the FEP/WSF); and "Residual Materials" (i.e., minor quantities of putrescible and other banned materials).

While the FEP/WSF was designed as a mechanism to biostabilize putrescible waste (e.g., food waste), it provides little if any benefit to the environment today as the composition of waste and quantity has changed significantly since the development of Otter Lake in the late 1990s. This is in part due to the success of HRM's solid waste program, including the success of the green cart program at diverting food waste from landfill disposal. Most of the waste currently delivered to and disposed of at Otter Lake is considered Inert Materials or Residual Materials, such that it does not need to be biostabilized prior to landfilling. Based on current tonnages HRM can therefore remain compliant with its commitments under agreement if the FEP/WSF is deactivated.

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Otter Lake Waste Processing & Disposal Facility



21. Does this information address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

22. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Although the Green Bin Program is effective, a great deal of food waste still ends up in the trash. Have you conducted a survey of exactly how much of the waste arriving at the site is indeed waste that should have been "Green-Bin'd" but wasn't, and if so would you be willing make that information public?

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Otter Lake Waste Processing & Disposal Facility Survey

Inability to reactivate the FEP/WSF if necessary

As part of the proposed deactivation plan, the FEP/WSF will be maintained such that the facilities could be put back into operation if needed. Activities have been defined to appropriately monitor and maintain the FEP/WSF following deactivation and include:

General:

- Removal of waste materials.
- Areas free of debris or stored materials.
- Cleaning floors.
- Regular walkthroughs are conducted and documented including the inspection of structural members and equipment support members.
- Access Control - doors and access points locked and/or regularly checked.
- Security of site maintained.
- Structures are maintained wind and water tight.
- Ventilation minimized but maintained.
- Pest control program maintained.

Mechanical Equipment:

- Removing/flushing/draining/purging of tanks/piping and winterizing.
- Cleaning equipment/supports.
- Filling all lubricants/seal systems.
- Removing/replacement of existing fluids.
- Applying external vapour corrosion inhibitors to equipment and supports.
- Machinery shutdown (locked and tagged out) — ongoing inspections — may include additional lubricants, dust coverings, regular energizing/rotation schedule, etc.

Electrical Equipment:

- Application of desiccants and vapour phase inhibitors in panels/cabinets.
- Motor heaters' activation.
- Provide heaters inside panels where condensation might be an issue.
- Thermal imagery of electrical circuits to remain energized.

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Biofilter:

- Removal and landfilling of media.
- Transfer of leachate to leachate storage tank.
- Flushing clear stone and transfer to leachate storage tank.
- Placing geomembrane lined notch in berm to limit depth of stored precipitation.
- Connection of biofilter to Stormwater ditching system.
- Installing perimeter fencing.

Fire Safety:

- Fire doors and Exit lighting are maintained.
- Dry Sprinkler System is maintained and air pressure monitored as required.
- Annual inspections of fire suppression equipment and systems, alarm systems and hydrants maintained.
- Propane system disconnected.

FEP Equipment



23. Does this information address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns



Otter Lake Waste Processing & Disposal Facility Survey

24. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Once shut-down, moth-balled or removed, should the need to reactivated or replace equipment will be far more that the cost of normal operation and maintenance not to mention the delay if getting funding and approval. In the meantime, the environment and health of people and animals in the vicinity of the landfill will be endangered. Is the cost savings of removing the WSF worth that?

Other items of concern related to the deactivation of the FEP/WSF

25. Please indicate any additional specific items of concern with respect to the proposed deactivation of the Otter Lake FEP/WSF:

26. Please provide your contact information (optional):

Name:

Email:

Thank you for providing your input on the proposed deactivation of the FEP/WSF. For additional information including links to staff reports and the Closure Review report please visit here: Halifax.ca/OtterLake

This survey can be sent via email to otterlake@halifax.ca or by mail to Solid Waste Resources, PO Box 1749, Halifax, NS, B3J 3A5. Mailed surveys should be returned by **December 3, 2021**.

From: [REDACTED]
To: [Otter Lake Waste Processing Facility](#)
Subject: [External Email] Survey
Date: Thursday, December 2, 2021 3:17:57 PM
Attachments: [completed Otter Lake Survey.pdf](#)

[This email has been received from an external person or system]

Hello,

Please find attached my completed survey.

Thank you.

Sent from [Mail](#) for Windows



Otter Lake Waste Processing & Disposal Facility Survey

As part of the NS Environment and Climate Change application process to deactivate the Front End Processor and Waste Stabilization Facility (FEP/WSF), Halifax Regional Municipality (HRM) and MIRROR Nova Scotia are providing the public with the opportunity to comment on the potential impacts of the project to the environment and the proposed mitigation measures.

More information on this application process, HRM staff recommendations and supporting documents are provided at the following link:

[Halifax.ca/OtterLake](https://halifax.ca/OtterLake)

In accordance with Section 485 of the Municipal Government Act (MGA), the personal information collected through the completion of this form will only be used by municipal staff and, if necessary, individuals and/or organizations under service contract with the Halifax Regional Municipality, for purposes relating to processing activities at the Otter Lake Waste Processing facility; the information will not be presented or compiled in a manner that could potentially identify any respondent. If you have any questions about the collection and use of this personal information, please contact the Access and Privacy Office at 902.476.3294 or privacy@halifax.ca.

Otter Lake FEP/WSF



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Otter Lake Waste Processing & Disposal Facility Survey

General Questions

1. Do you live within 5 km of the FEP/WSF?

- ☐ Yes
- ☒ No

2. Please provide your postal code (optional). E.g., A1A2B2

B3Z 3T6

Areas of Concern

In the next few questions, an overview of potential area of concern and proposed mitigation measures have been provided along with the opportunity for you to provide additional comments regarding each of the potential concerns.

Safety of workers/increased traffic at landfill disposal area

Currently, all waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the FEP tipping floor (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles, i.e., waste from businesses, industries and institutions). It is reiterated that waste from businesses, industries and institutions arriving at Otter Lake will continue to be managed as it is today and will be directed to the Transfer Station tipping floor to be transferred off-site. The approach with respect to the proposed deactivation of the Otter Lake FEP/WSF is consistent with the current approach, but with the following changes:

- All waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the landfill disposal area (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles). Based on recent records for residential collection vehicle arrivals at Otter Lake, this will equate to approximately 25 to 30 vehicle trips to the landfill disposal area per day. This represents an

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increase of approximately eight to 10 vehicle trips per day to the landfill disposal area as compared to current conditions.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an increase in landfill disposal area traffic or worker safety have been identified. Some on-site impacts have been identified as representing a medium risk which includes increased disposal area traffic and worker safety. Mitigation measures include the following:

- Provision of instructions to residential collection contractors regarding site traffic rules and restrictions, including the definition of protocols (e.g., warnings, banning from site) for non-compliance.
- Establish directional signage from the Scale House to the landfill disposal area.
- Provision of traffic spotters at the landfill disposal area, acknowledging peak traffic periods.

Collection Vehicle at the Scale House





Otter Lake Waste Processing & Disposal Facility Survey

3. Do these mitigation measures address your concerns?

- ☒ Yes
- ☐ No
- ☐ I do not have any concerns

4. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

The number of trips having to be made are of concern due to fuel consumption and pollution by the vehicles

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Otter Lake Waste Processing & Disposal Facility Survey

Additional Blowing Litter

In addition to regular inspections and clean ups conducted along Highway 103 and the site access road, litter is currently collected on a daily basis from the Otter Lake site, particularly from fences, on-site roads, and entrance area. Fixed fences are installed as needed on exterior berms. Portable fences are installed at or near the landfill disposal area to catch windblown materials and are cleaned as necessary. Additionally, higher fencing is installed beyond the portable fencing as necessary to catch further wind-blown material.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to blowing litter have been identified. Some on-site impacts have been identified as medium risk which includes the increased potential for blowing litter at the landfill disposal area. Mitigation measures include the following:

- Use of additional portable fencing.
- Additional litter collection and removal efforts by site personnel.

Landfill Litter Fencing





Otter Lake Waste Processing & Disposal Facility Survey

5. Do these mitigation measures address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

6. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Enhanced attraction of birds

Currently, several bird management measures are regularly conducted in proximity to the landfill disposal area, including noise makers (whistler flares), use of a falcon and handler and limited culling (consistent with Federal regulations).

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an enhanced attraction of birds have been identified. Some on-site impacts have been identified as representing a medium risk which includes an enhanced attraction of birds. Mitigation measures include the following:

- Increased frequency of bird and vector control efforts at the landfill disposal area and around the landfill in general.
- Emphasis on minimizing the size (and thus the attractiveness to birds) of the landfill disposal area, as well as applying daily cover on freshly placed waste.

Birds on the Landfill Cap





Otter Lake Waste Processing & Disposal Facility Survey

7. Do these mitigation measures address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

8. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Delivery of rodents to the disposal area

Currently, regular baiting programs for rodent control are conducted in proximity to the FEP/WSF. With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to the delivery of rodents to the landfill disposal area have been identified. Some on-site impacts have been identified as medium risk which includes the delivery of rodents to the landfill disposal area. Mitigation measures include the following:

- Implementation of a baiting program for rodents in proximity to the landfill disposal area.

Vehicle discharging waste at the Landfill Disposal Area





Otter Lake Waste Processing & Disposal Facility Survey

9. Do these mitigation measures address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

10. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

Does the baiting of rodents actually keep them away or attract them to the bait stations?

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Otter Lake Waste Processing & Disposal Facility Survey

Dust generation from additional disposal site traffic

Currently, all vehicles delivering waste to the Front End Processor and Transfer Station travel on paved roads. The perimeter access road around the landfill and leading to the disposal area is granular. A naturally-sourced dust suppressant (Tembec) is used as necessary to reduce the generation of dust. Landfill road construction and maintenance practices will be completed in a manner that will minimize creation of mud. Granular material and positive drainage will work to keep landfill roads dry and reduce the possibility of mud accumulation on haul trucks. With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach. No on or off-site impacts have been identified due to dust generation from additional disposal site traffic.

Vehicle on the Perimeter Access Road





Otter Lake Waste Processing & Disposal Facility Survey

11. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

12. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:



Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of greenhouse gases

Landfills are a significant source of greenhouse gas emissions and produce methane gas, which is approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere. Diverting material (e.g., green cart program) from landfill disposal is the best way to reduce greenhouse gas emissions from Halifax's solid waste system.

As organic materials decompose in a landfill, they generate greenhouse gases; namely, methane and carbon dioxide. Based on previously completed evaluations, the FEP/WSF does not have a significant effect on the decomposition potential of waste delivered to the landfill. This has been illustrated by the ongoing requirement for landfill gas and leachate management systems at the landfill. The WSF does partially treat (decompose/stabilize) materials and therefore can reduce the amount of greenhouse gases generated in the landfill. The FEP separates materials that are smaller than 150 mm in size and conveys them to the WSF for treatment. However, other methane-generating materials greater than 150 mm in size and are not treated in the WSF. As such, greenhouse gases are not anticipated to greatly increase by deactivating the FEP/WSF as food waste only makes up a portion of the methane- generating waste deposited in the landfill.

The operation of the FEP/WSF consumes significant electricity. As a result of deactivating the FEP/WSF, there will be a significant reduction in electricity use on site and a corresponding reduction of greenhouse gas emissions in the order of 1240 tonnes of CO₂ (equivalent) per year. This offset will mitigate potential increases as result of not stabilizing materials in the WSF (as noted above).

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Otter Lake Waste Processing & Disposal Facility Survey

Landfill Gas Collection Wells



13. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

14. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

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Additional generation of odours

Dillon's FEP/WSF Closure Review noted that the potential for odour issues at the landfill may be increased by operating the FEP/WSF. The reason is that the WSF stabilization process 'kick starts' the microbiological treatment process that continues once the material is landfilled. Once the 'stabilized' material is landfilled (i.e., output from WSF), the production of landfill gas (including odorous hydrogen sulfide gas) is quicker at Otter Lake than at a traditional municipal solid waste landfill.

Odour mitigation measures will continue regardless of whether the FEP/WSF is operated, these include:

- Maintaining the landfill disposal area as small as possible.
- Applying daily landfill cover to freshly placed waste.
- Maintaining a landfill gas collection and treatment system.
- Proactive monitoring for site odours.

With respect to the proposed deactivation of the Otter Lake FEP/WSF the proposed approach is consistent with the current approach for the management of odours. No on or off-site impacts due to odours have been identified with the proposed deactivation.

Landfill Gas Flares





Otter Lake Waste Processing & Disposal Facility Survey

15. Does the existing approach address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

16. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item (400 character limit):



Otter Lake Waste Processing & Disposal Facility Survey

Impact to groundwater quality

Nova Scotia has stringent landfill requirements with respect to groundwater quality protection. Otter Lake was developed as what is known in Nova Scotia as a 'second generation landfill'. This means that the landfill at Otter Lake is equipped with a double composite liner system and leachate collection system, which prevents leachate from entering the underlying soils and groundwater. Deactivating the FEP/WSF will have no impact on protecting groundwater.

Precipitation that comes in contact with waste in the landfill and percolates to the bottom of the landfill is called leachate. As such the landfill disposal area is kept as small as possible (e.g., less than 30 m in width) to limit the amount of exposed waste (water that runs off the landfill cap is managed as surface water). Leachate which percolates through waste is collected within the leachate collection system at the bottom of the landfill (and located above the double composite liner system). Leachate is conveyed via pipes to collection sumps where it is subsequently pumped to a leachate storage tank. Leachate from the storage tank is transferred to a tanker truck as required for transport to an approved treatment facility (currently Halifax Water's Mill Cove Wastewater Treatment Facility). In cases of high flows, a temporary holding pond, located near Cell 4, can accept leachate. Regular monitoring of site groundwater, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of leachate management infrastructure and operations at the site.

With respect to the deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of groundwater quality. No on or off-site impacts due to groundwater quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Sampling of a Groundwater Monitoring Well



17. Does the existing approach address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

18. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

As long as these things are kept up regularly and always.



Otter Lake Waste Processing & Disposal Facility Survey

Impact to surface water quality

Surface water is generated at landfills predominantly related to runoff from the landfill cap — i.e., this is precipitation/rainfall that runs down the capped landfill side slopes and has not come into contact with waste materials.

At Otter Lake, the surface water management system includes ditches, pipes, culverts etc. to convey surface water to stormwater management ponds. The stormwater management ponds are used to remove sedimentation in the surface water. The surface water in the stormwater management ponds is tested prior to discharging to the Nine Mile River.

Erosion control measures are key to preventing erosion and sedimentation in surface water. Examples of erosion control measures include temporary measures such as the use of erosion protection blankets, and permanent measures such as seeding and establishing a grass/vegetative cover on the landfill cap.

Monthly erosion inspections are completed to ensure that adequate measures have been put in place. Additionally after each storm event, all erosion control measures are inspected, and, if found to be damaged, are repaired or replaced as soon as possible.

Regular monitoring of site surface water, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of stormwater management infrastructure and operations at the site.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of surface water quality. No on or off-site impacts due to surface water quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Surface Water Sampling



19. Does the existing approach address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

20. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:



Otter Lake Waste Processing & Disposal Facility Survey

Honouring the original Community Agreement

The 1999 agreement between HRM and the Halifax Waste Resource Society (Society) titled: "Agreement for Community Monitoring of Solid Waste Facilities" (HRWS Agreement) lays out the framework for community monitoring of landfill operations by the Community Monitoring Committee (CMC). The agreement can be accessed at Halifax.ca/OtterLake

The Society was established in 1999 to represent the interests of the local community with respect to Otter Lake. As part of developing Otter Lake, HRM entered into an agreement with the Society to establish roles and responsibilities, including the establishment of the CMC. The CMC consists of 15 members, 9 of which are appointed by the Society, and 6 of which are appointed by HRM. HRM's representatives on the CMC include the Mayor and the Councillors from Districts 11, 12, and 13.

The agreement does not specifically mandate that the FEP/WSF be operated at Otter Lake. The agreement stipulates that only 'Acceptable Waste' shall be landfilled. Acceptable Waste is defined as "Inert Materials"; "Stable Materials" (i.e., biostabilized through the FEP/WSF); and "Residual Materials" (i.e., minor quantities of putrescible and other banned materials).

While the FEP/WSF was designed as a mechanism to biostabilize putrescible waste (e.g., food waste), it provides little if any benefit to the environment today as the composition of waste and quantity has changed significantly since the development of Otter Lake in the late 1990s. This is in part due to the success of HRM's solid waste program, including the success of the green cart program at diverting food waste from landfill disposal. Most of the waste currently delivered to and disposed of at Otter Lake is considered Inert Materials or Residual Materials, such that it does not need to be biostabilized prior to landfilling. Based on current tonnages HRM can therefore remain compliant with its commitments under agreement if the FEP/WSF is deactivated.

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Otter Lake Waste Processing & Disposal Facility Survey

Otter Lake Waste Processing & Disposal Facility



21. Does this information address your concerns?

- ☐ Yes
- ☒ No
- ☐ I do not have any concerns

22. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

What happens if things change and more waste is making its way to the landfill which shouldn't be there
is the situation going to keep being monitored?



Otter Lake Waste Processing & Disposal Facility Survey

Inability to reactivate the FEP/WSF if necessary

As part of the proposed deactivation plan, the FEP/WSF will be maintained such that the facilities could be put back into operation if needed. Activities have been defined to appropriately monitor and maintain the FEP/WSF following deactivation and include:

General:

- Removal of waste materials.
- Areas free of debris or stored materials.
- Cleaning floors.
- Regular walkthroughs are conducted and documented including the inspection of structural members and equipment support members.
- Access Control - doors and access points locked and/or regularly checked.
- Security of site maintained.
- Structures are maintained wind and water tight.
- Ventilation minimized but maintained.
- Pest control program maintained.

Mechanical Equipment:

- Removing/flushing/draining/purging of tanks/piping and winterizing.
- Cleaning equipment/supports.
- Filling all lubricants/seal systems.
- Removing/replacement of existing fluids.
- Applying external vapour corrosion inhibitors to equipment and supports.
- Machinery shutdown (locked and tagged out) — ongoing inspections — may include additional lubricants, dust coverings, regular energizing/rotation schedule, etc.

Electrical Equipment:

- Application of desiccants and vapour phase inhibitors in panels/cabinets.
- Motor heaters' activation.
- Provide heaters inside panels where condensation might be an issue.
- Thermal imagery of electrical circuits to remain energized.

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Otter Lake Waste Processing & Disposal Facility Survey

Biofilter:

- Removal and landfilling of media.
- Transfer of leachate to leachate storage tank.
- Flushing clear stone and transfer to leachate storage tank.
- Placing geomembrane lined notch in berm to limit depth of stored precipitation.
- Connection of biofilter to Stormwater ditching system.
- Installing perimeter fencing.

Fire Safety:

- Fire doors and Exit lighting are maintained.
- Dry Sprinkler System is maintained and air pressure monitored as required.
- Annual inspections of fire suppression equipment and systems, alarm systems and hydrants maintained.
- Propane system disconnected.

FEP Equipment



23. Does this information address your concerns?

- ☐ Yes
- ☐ No
- ☐ I do not have any concerns



Otter Lake Waste Processing & Disposal Facility Survey

24. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Other items of concern related to the deactivation of the FEP/WSF

25. Please indicate any additional specific items of concern with respect to the proposed deactivation of the Otter Lake FEP/WSF:

26. Please provide your contact information (optional):

Name: _____

Email: _____

Thank you for providing your input on the proposed deactivation of the FEP/WSF. For additional information including links to staff reports and the Closure Review report please visit here: [Halifax.ca/OtterLake](https://halifax.ca/OtterLake)

This survey can be sent via email to otterlake@halifax.ca or by mail to Solid Waste Resources, PO Box 1749, Halifax, NS, B3J 3A5. Mailed surveys should be returned by **December 3, 2021**.

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Otter Lake Waste Processing & Disposal Facility Survey

As part of the NS Environment and Climate Change application process to deactivate the Front End Processor and Waste Stabilization Facility (FEP/WSF), Halifax Regional Municipality (HRM) and MIRROR Nova Scotia are providing the public with the opportunity to comment on the potential impacts of the project to the environment and the proposed mitigation measures.

More information on this application process, HRM staff recommendations and supporting documents are provided at the following link:

Halifax.ca/OtterLake

In accordance with Section 485 of the Municipal Government Act (MGA), the personal information collected through the completion of this form will only be used by municipal staff and, if necessary, individuals and/or organizations under service contract with the Halifax Regional Municipality, for purposes relating to processing activities at the Otter Lake Waste Processing facility; the information will not be presented or compiled in a manner that could potentially identify any respondent. If you have any questions about the collection and use of this personal information, please contact the Access and Privacy Office at 902.476.3294 or privacy@halifax.ca.

Otter Lake FEP/WSF



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Otter Lake Waste Processing & Disposal Facility Survey

General Questions

1. Do you live within 5 km of the FEP/WSF?

- ☒ Yes
☐ No

2. Please provide your postal code (optional). E.g., A1A2B2

B3T 1B9

Areas of Concern

In the next few questions, an overview of potential area of concern and proposed mitigation measures have been provided along with the opportunity for you to provide additional comments regarding each of the potential concerns.

Safety of workers/increased traffic at landfill disposal area

Currently, all waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the FEP tipping floor (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles, i.e., waste from businesses, industries and institutions). It is reiterated that waste from businesses, industries and institutions arriving at Otter Lake will continue to be managed as it is today and will be directed to the Transfer Station tipping floor to be transferred off-site. The approach with respect to the proposed deactivation of the Otter Lake FEP/WSF is consistent with the current approach, but with the following changes:

- All waste collection vehicles arriving at Otter Lake, after reporting to the Scale House, proceed to either the landfill disposal area (residential collection vehicles) or the Transfer Station tipping floor (commercial collection vehicles). Based on recent records for residential collection vehicle arrivals at Otter Lake, this will equate to approximately 25 to 30 vehicle trips to the landfill disposal area per day. This represents an

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Otter Lake Waste Processing & Disposal Facility Survey

increase of approximately eight to 10 vehicle trips per day to the landfill disposal area as compared to current conditions.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an increase in landfill disposal area traffic or worker safety have been identified. Some on-site impacts have been identified as representing a medium risk which includes increased disposal area traffic and worker safety. Mitigation measures include the following:

- Provision of instructions to residential collection contractors regarding site traffic rules and restrictions, including the definition of protocols (e.g., warnings, banning from site) for non-compliance.
- Establish directional signage from the Scale House to the landfill disposal area.
- Provision of traffic spotters at the landfill disposal area, acknowledging peak traffic periods.

Collection Vehicle at the Scale House



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Otter Lake Waste Processing & Disposal Facility Survey

3. Do these mitigation measures address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

4. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

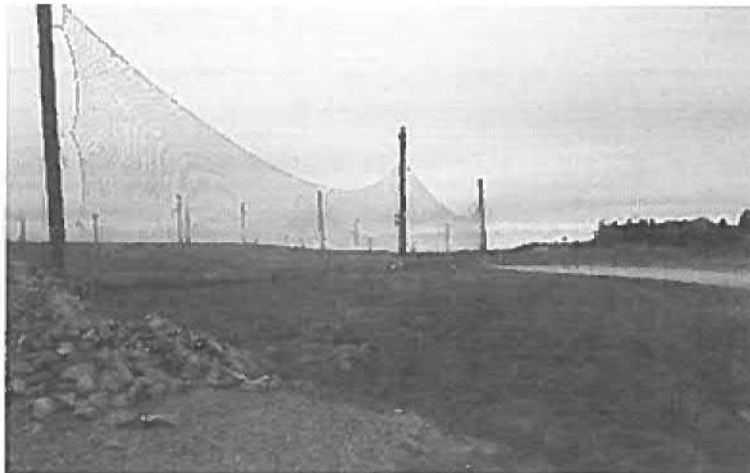
Additional Blowing Litter

In addition to regular inspections and clean ups conducted along Highway 103 and the site access road, litter is currently collected on a daily basis from the Otter Lake site, particularly from fences, on-site roads, and entrance area. Fixed fences are installed as needed on exterior berms. Portable fences are installed at or near the landfill disposal area to catch windblown materials and are cleaned as necessary. Additionally, higher fencing is installed beyond the portable fencing as necessary to catch further wind-blown material.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to blowing litter have been identified. Some on-site impacts have been identified as medium risk which includes the increased potential for blowing litter at the landfill disposal area. Mitigation measures include the following:

- Use of additional portable fencing.
- Additional litter collection and removal efforts by site personnel.

Landfill Litter Fencing



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Otter Lake Waste Processing & Disposal Facility Survey

5. Do these mitigation measures address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

6. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Enhanced attraction of birds

Currently, several bird management measures are regularly conducted in proximity to the landfill disposal area, including noise makers (whistler flares), use of a falcon and handler and limited culling (consistent with Federal regulations).

With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to an enhanced attraction of birds have been identified. Some on-site impacts have been identified as representing a medium risk which includes an enhanced attraction of birds. Mitigation measures include the following:

- Increased frequency of bird and vector control efforts at the landfill disposal area and around the landfill in general.
- Emphasis on minimizing the size (and thus the attractiveness to birds) of the landfill disposal area, as well as applying daily cover on freshly placed waste.

Birds on the Landfill Cap



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Otter Lake Waste Processing & Disposal Facility Survey

7. Do these mitigation measures address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

8. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Delivery of rodents to the disposal area

Currently, regular baiting programs for rodent control are conducted in proximity to the FEP/WSF. With respect to the proposed deactivation of the Otter Lake FEP/WSF, no off-site impacts due to the delivery of rodents to the landfill disposal area have been identified. Some on-site impacts have been identified as medium risk which includes the delivery of rodents to the landfill disposal area. Mitigation measures include the following:

- Implementation of a baiting program for rodents in proximity to the landfill disposal area.

Vehicle discharging waste at the Landfill Disposal Area



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Otter Lake Waste Processing & Disposal Facility Survey

9. Do these mitigation measures address your concerns?

- ☐ Yes
☒ No
☐ I do not have any concerns

10. If No, please indicate why these mitigation measures do not address your concerns and/or any additional concerns you may have with this specific item:

Redundant. We should have a regular culling program to eliminate all rodents, rather than trapping + moving.

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Otter Lake Waste Processing & Disposal Facility Survey

Dust generation from additional disposal site traffic

Currently, all vehicles delivering waste to the Front End Processor and Transfer Station travel on paved roads. The perimeter access road around the landfill and leading to the disposal area is granular. A naturally-sourced dust suppressant (Tembec) is used as necessary to reduce the generation of dust. Landfill road construction and maintenance practices will be completed in a manner that will minimize creation of mud. Granular material and positive drainage will work to keep landfill roads dry and reduce the possibility of mud accumulation on haul trucks. With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach. No on or off-site impacts have been identified due to dust generation from additional disposal site traffic.

Vehicle on the Perimeter Access Road



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Otter Lake Waste Processing & Disposal Facility Survey

11. Does the existing approach address your concerns?



Yes



No



I do not have any concerns

12. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of greenhouse gases

Landfills are a significant source of greenhouse gas emissions and produce methane gas, which is approximately 25 times more potent than carbon dioxide at trapping heat in the atmosphere. Diverting material (e.g., green cart program) from landfill disposal is the best way to reduce greenhouse gas emissions from Halifax's solid waste system.

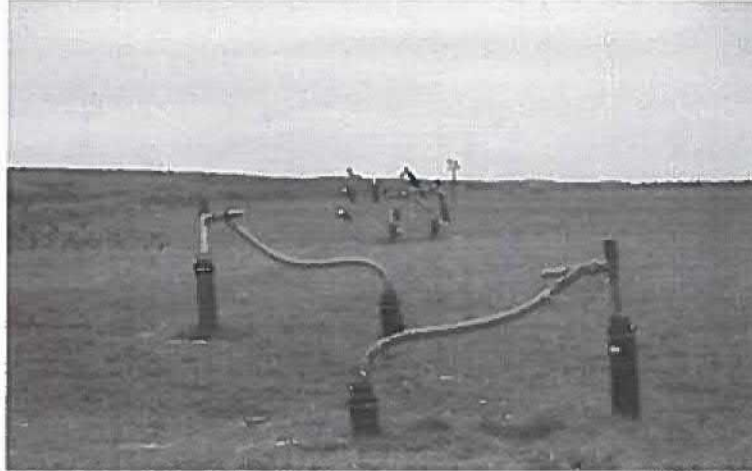
As organic materials decompose in a landfill, they generate greenhouse gases; namely, methane and carbon dioxide. Based on previously completed evaluations, the FEP/WSF does not have a significant effect on the decomposition potential of waste delivered to the landfill. This has been illustrated by the ongoing requirement for landfill gas and leachate management systems at the landfill. The WSF does partially treat (decompose/stabilize) materials and therefore can reduce the amount of greenhouse gases generated in the landfill. The FEP separates materials that are smaller than 150 mm in size and conveys them to the WSF for treatment. However, other methane-generating materials greater than 150 mm in size and are not treated in the WSF. As such, greenhouse gases are not anticipated to greatly increase by deactivating the FEP/WSF as food waste only makes up a portion of the methane- generating waste deposited in the landfill.

The operation of the FEP/WSF consumes significant electricity. As a result of deactivating the FEP/WSF, there will be a significant reduction in electricity use on site and a corresponding reduction of greenhouse gas emissions in the order of 1240 tonnes of CO₂ (equivalent) per year. This offset will mitigate potential increases as result of not stabilizing materials in the WSF (as noted above).

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Otter Lake Waste Processing & Disposal Facility Survey

Landfill Gas Collection Wells



13. Does the existing approach address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

14. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Additional generation of odours

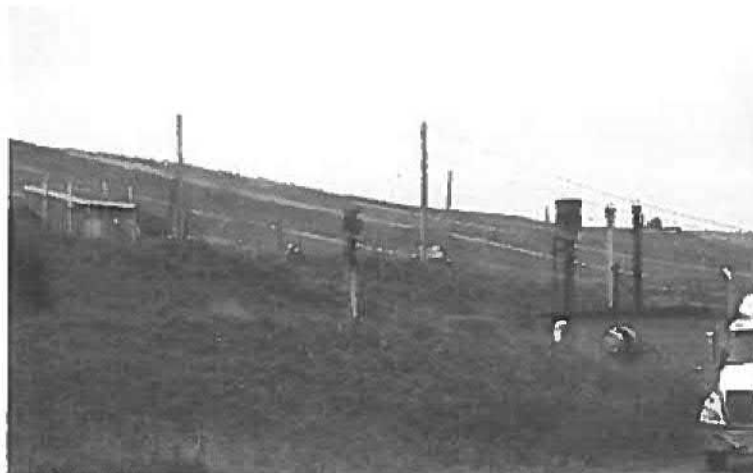
Dillon's FEP/WSF Closure Review noted that the potential for odour issues at the landfill may be increased by operating the FEP/WSF. The reason is that the WSF stabilization process 'kick starts' the microbiological treatment process that continues once the material is landfilled. Once the 'stabilized' material is landfilled (i.e., output from WSF), the production of landfill gas (including odorous hydrogen sulfide gas) is quicker at Otter Lake than at a traditional municipal solid waste landfill.

Odour mitigation measures will continue regardless of whether the FEP/WSF is operated, these include:

- Maintaining the landfill disposal area as small as possible.
- Applying daily landfill cover to freshly placed waste.
- Maintaining a landfill gas collection and treatment system.
- Proactive monitoring for site odours.

With respect to the proposed deactivation of the Otter Lake FEP/WSF the proposed approach is consistent with the current approach for the management of odours. No on or off-site impacts due to odours have been identified with the proposed deactivation.

Landfill Gas Flares



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Otter Lake Waste Processing & Disposal Facility Survey

15. Does the existing approach address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

16. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item (400 character limit):

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Otter Lake Waste Processing & Disposal Facility Survey

Impact to groundwater quality

Nova Scotia has stringent landfill requirements with respect to groundwater quality protection. Otter Lake was developed as what is known in Nova Scotia as a 'second generation landfill". This means that the landfill at Otter Lake is equipped with a double composite liner system and leachate collection system, which prevents leachate from entering the underlying soils and groundwater. Deactivating the FEP/WSF will have no impact on protecting groundwater.

Precipitation that comes in contact with waste in the landfill and percolates to the bottom of the landfill is called leachate. As such the landfill disposal area is kept as small as possible (e.g., less than 30 m in width) to limit the amount of exposed waste (water that runs off the landfill cap is managed as surface water). Leachate which percolates through waste is collected within the leachate collection system at the bottom of the landfill (and located above the double composite liner system). Leachate is conveyed via pipes to collection sumps where it is subsequently pumped to a leachate storage tank. Leachate from the storage tank is transferred to a tanker truck as required for transport to an approved treatment facility (currently Halifax Water's Mill Cove Wastewater Treatment Facility). In cases of high flows, a temporary holding pond, located near Cell 4, can accept leachate. Regular monitoring of site groundwater, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of leachate management infrastructure and operations at the site.

With respect to the deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of groundwater quality. No on or off-site impacts due to groundwater quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Sampling of a Groundwater Monitoring Well



17. Does the existing approach address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

18. If No, please indicate why the existing approach does not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Impact to surface water quality

Surface water is generated at landfills predominantly related to runoff from the landfill cap — i.e., this is precipitation/rainfall that runs down the capped landfill side slopes and has not come into contact with waste materials.

At Otter Lake, the surface water management system includes ditches, pipes, culverts etc. to convey surface water to stormwater management ponds. The stormwater management ponds are used to remove sedimentation in the surface water. The surface water in the stormwater management ponds is tested prior to discharging to the Nine Mile River.

Erosion control measures are key to preventing erosion and sedimentation in surface water. Examples of erosion control measures include temporary measures such as the use of erosion protection blankets, and permanent measures such as seeding and establishing a grass/vegetative cover on the landfill cap.

Monthly erosion inspections are completed to ensure that adequate measures have been put in place. Additionally after each storm event, all erosion control measures are inspected, and, if found to be damaged, are repaired or replaced as soon as possible.

Regular monitoring of site surface water, along with associated reporting to NS Environment and Climate Change (with copies provided to the Otter Lake Community Monitoring Committee), will continue to allow for validation of the effectiveness of stormwater management infrastructure and operations at the site.

With respect to the proposed deactivation of the Otter Lake FEP/WSF, the proposed approach is consistent with the current approach for the management of surface water quality. No on or off-site impacts due to surface water quality have been identified with the proposed deactivation.

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Otter Lake Waste Processing & Disposal Facility Survey

Surface Water Sampling



19. Does the existing approach address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

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Otter Lake Waste Processing & Disposal Facility Survey

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Otter Lake Waste Processing & Disposal Facility Survey

Otter Lake Waste Processing & Disposal Facility



21. Does this information address your concerns?

- ☒ Yes
☐ No
☐ I do not have any concerns

22. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

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Otter Lake Waste Processing & Disposal Facility Survey

Inability to reactivate the FEP/WSF if necessary

As part of the proposed deactivation plan, the FEP/WSF will be maintained such that the facilities could be put back into operation if needed. Activities have been defined to appropriately monitor and maintain the FEP/WSF following deactivation and include:

General:

- Removal of waste materials.
- Areas free of debris or stored materials.
- Cleaning floors.
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Biofilter:

- Removal and landfilling of media.
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- Flushing clear stone and transfer to leachate storage tank.
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Fire Safety:

- Fire doors and Exit lighting are maintained.
- Dry Sprinkler System is maintained and air pressure monitored as required.
- Annual inspections of fire suppression equipment and systems, alarm systems and hydrants maintained.
- Propane system disconnected.

FEP Equipment



23. Does this information address your concerns?

- ☐ Yes
- ☐ No
- ☒ I do not have any concerns

HALIFAX

Otter Lake Waste Processing & Disposal Facility Survey

24. If No, please indicate why the information provided does not address your concerns and/or any additional concerns you may have with this specific item:

Other items of concern related to the deactivation of the FEP/WSF

25. Please indicate any additional specific items of concern with respect to the proposed deactivation of the Otter Lake FEP/WSF:

26. Please provide your contact information (optional):

Name:

Email:



Thank you for providing your input on the proposed deactivation of the FEP/WSF. For additional information including links to staff reports and the Closure Review report please visit here: Halifax.ca/OtterLake

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